



A publication of the Friends of the National Arboretum

ARBOR FRIENDS

FALL 2019



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FROM THE FORMER BOARD CHAIR



DEAR FRIENDS OF THE NATIONAL ARBORETUM:

Do make time to come visit the Arboretum during this beautiful fall season! You won't be disappointed because the colors get more beautiful every day. Fall fundraising and planning for 2020 and beyond are in full swing at FONA.

We have had several leadership transitions that I want to share with you. FONA said good-bye to its Executive Director, Tom McGuire, in August and now we say hello to Craven Rand, our interim Executive Director. Craven is the former Chief Operating Officer of the Friends of the National Zoo and he has already proven to be a strong and welcome leader.

Nadia Mercer has moved from Director of the Washington Youth Garden into an important new fundraising role focused on foundations and institutional giving. Brianne Studer has taken over Nadia's former position as the WYG director in the new role of FONA's Director of Programs.

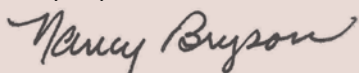
FONA elected new officers in October. Jennifer Hatcher, my friend and a long-time FONA supporter and board member, is the new Board Chair, and I am confident that the organization will move forward quickly under her guidance. All of us at FONA are enthusiastic about these changes and confident that they will lead to the continued growth and success of FONA.

The partnership between the Arboretum and FONA is stronger than ever, and together, we are collaborating on a common vision for the "Arboretum 100" – the 2027 centennial anniversary of the Arboretum.

A core element of this vision includes capital improvements, such as the restoration of the Capitol Columns and the surrounding meadow, a gift shop, visitor center, event space, educational greenhouses, and expansion of the Washington Youth Garden and family use space. FONA has initiated a feasibility study for a potential capital campaign to fund these improvements—stay tuned. It's all very exciting!

The future is bright and it beckons. None of this would be possible without your continued support and love for the beautiful open space that is the Arboretum. Thank you! 🌳

Nancy Bryson



Former Board Chair, Friends of the National Arboretum

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ON THE COVER Autumn leaves carpet the ground under maple trees.

LETTER FROM THE DIRECTOR

The heat is on...



This year tied the record for the hottest summer in the northern hemisphere, and in our area, it was nearly three degrees

warmer than it was one hundred years ago. We are seeing signs of prolonged stress in our failing urban tree canopy, and while there is not likely one silver bullet, the compounded effects of urban heat islands, chaotic rainfall patterns, and changing soil hydrology—part and parcel of global warming—are all taking their toll on long-lived, immobile organisms like trees that germinated and took root under more benign conditions.

As we move forward in the twenty-first century, we as individuals, and for this purpose, we as an institution, will be determining what will and won't persist in future landscapes and urban forests. It's a daunting thought but a noble purpose that motivates our staff to safeguard these important resources. Unfortunately, we already have conservation species, species whose existence depends on their cultivation, in our collections. Most notable is the Franklin tree (*Franklinia alatamaha*),



extinct in the wild since the beginning of the nineteenth century but cultivated (conserved) in our gardens ever since. It has beautiful camellia-like white flowers in late summer and brilliant scarlet fall color, but the fact that it is functionally extinct is often ignored by passersby.

What value do you place on trees, or for that matter all plants that may be non-ornamental, non-edible, non-industrial, or some other anthropocentric unimportant label? Tough questions for tough times. We know we cannot save it all at the National Arboretum, but our scientists, staff, and friends put up the good

We are seeing signs of prolonged stress in our failing urban tree canopy.

fight. We collaborate and even fund these efforts at other botanical institutions through the American Public Gardens Association and research agreements, leveraging our federal funds with external sources to collect, conserve, characterize, and distribute plants here and abroad. Horticulture is vital to plant conservation efforts and will only increase as habitats shrink and species go extinct.

That we do this noble work via beautiful gardens and exhibits often hides the importance of the underlying scientific effort. As you continue to engage and support us through FONA, consider the true value of a world of plants, public gardens, and public servants committed to safeguarding these resources. 🌳

Richard T. Olsen, Director
The United States National Arboretum

The Garden Club of America Welcomes Dr. Olsen as a 2019 Honorary Member

Annually, The Garden Club of America (a national organization that includes about 200 clubs with 18,000 members) recognizes extraordinary people who exemplify the GCA's ideals by extending honorary membership to them. Accordingly, with appreciation for his achievements, the GCA welcomed Dr. Richard Olsen as one of four new Honorary Members for 2019.

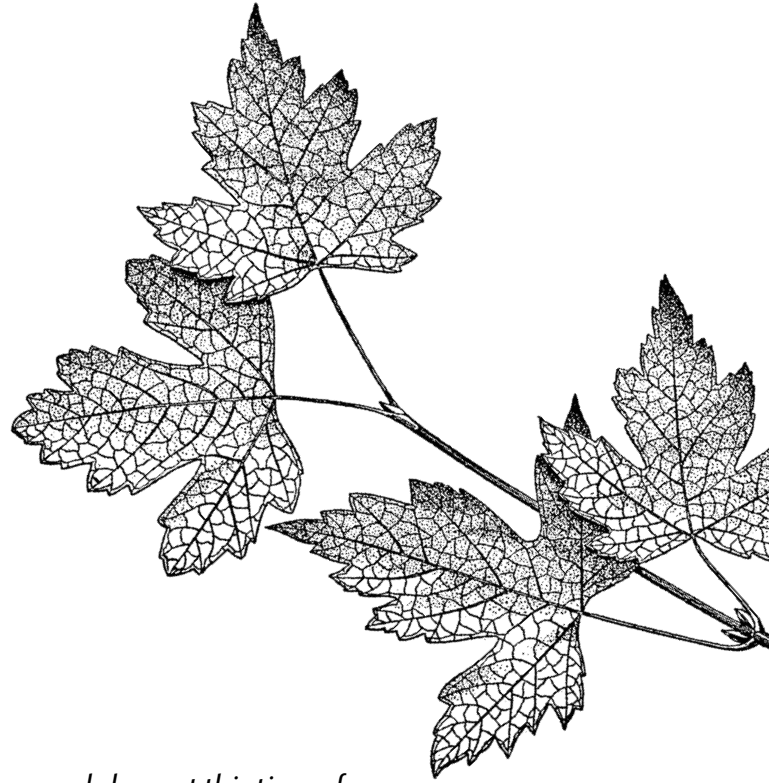
Richard T. Olsen, PhD, nominated by GCA Zone VI, is the Director of the U.S. National Arboretum. He is a plant scientist and geneticist, environmentalist, and recognized leader in the international public garden arena. He has served as consultant to Casey Trees since 2014. His research on *Catalpa chionanthus* for urban forests will culminate with their much-anticipated release to the commercial market within the next few years. He serves on the J. C. Raulston Arboretum Board of Advisors. In 1998, he was named as an alternate for the Martin McLaren Scholarship Fellow, GCA Institute of Horticulture, British Isles. 🌳



Autumn colors shine bright on this black maple, *Acer saccharum* subsp. *nigrum* 'Greencolumn', in the Maples Collection.

The Maples Collection

Karen Zill



Maple trees can be counted on to provide a good show at this time of year. Renowned for their spectacular fall colors, these popular, adaptable trees are an annual draw for seasonal travelers who want to see the brilliant leaf colors before the muted shades of winter appear. At the Arboretum, maple trees have taken on a new distinction. Last spring, they became a certified collection within the Plant Collections Network.

What is the Plant Collections Network?

The Plant Collections Network (PCN) is a long-term collaboration between the American Public Gardens Association (APGA) and the USDA-Agricultural Research Service, which administers the Arboretum. Its purpose is to coordinate a continent-wide approach to the preservation of plant germplasm and to promote excellence in the management of plant collections. Having a nationally accredited plant collection not only signifies that an institution is committed to long-term plant collection preservation but also confers national and international recognition of the high quality of the collection.

Being part of the PCN helps to fulfill an essential component of the mission of the Arboretum, which is required by law to preserve more than two hundred genera. Maintaining genetic diversity in its collections is another goal shared with the APGA-Agricultural Research Service partnership.

Who can participate?

All members of the APGA, including individual collectors, breeders, and plant societies, are eligible to apply for accreditation of any number of their collections. Participants must commit to holding and developing a documented living plant collection at the highest professional level and must meet additional criteria for successful participation, such as maintaining up-to-date plant records, making sure the staff have expertise with the designated plant group, and ensuring the likelihood of long-term stability and support for the collection.

Defining a collection

Deciding how to define a collection depends on the institution's own goals. Collections can be defined by taxonomic level, such as family, genus, or section, or by floristic or geographic region, horticultural category, or breeding program. Or a collection may comprise woody or herbaceous ornamentals from throughout the world.



Top: Growing in pairs, *Acer palmatum*'s winged fruits or "samara" ripen in September-October; **Right:** One of the USNA plant introductions is the red maple *Acer rubrum* 'Red Rocket' cultivar, known for its hardiness, tight upright form, and red fall color; **Bottom:** Maples are concentrated in the Maples Collection by Springhouse Run, but individual trees are planted around the Arboretum, like this full-moon maple *Acer japonicum* 'mikasayama' in the meadow; **Left:** *Acer palmatum* 'Winter Red' Japanese maple.



Maples at the Arboretum

The Maples Collection represents the Arboretum's second certified collection since it helped establish the PCN almost 25 years ago. The first was the Boxwood Collection, certified in 1996. The maples are clustered not far from the New York Avenue Gate, east of Springhouse Run, and along Hickory Lane. There are also maples in the Gotelli Collection and the Asian Collections and at other locations throughout the Arboretum. The Maples Collection contains 287 live taxa and 860 individual plants.

A coordinated effort

Applying for PCN accreditation took several years and involved numerous steps, including getting approval for the Arboretum Collections Policy, getting approval for the Collection Development Plan that described what the collection would look like in the future, having a complete inventory of plant material, ensuring that all maples are properly labeled, evaluating the inventory, and creating a Collections Disaster Plan that includes details on how to safeguard the collection if a natural disaster occurs. The application process—and the management of the Maples Collection—was, and is, a truly collaborative effort involving several individuals. Kevin Conrad, who is Curator of the Woody Landscape Plant Germplasm Repository and is responsible for wild collected germplasm, coordinated the application process. Supervisory Horticulturist Christopher Carley, wrote the application for PCN certification. Carole Bordelon, Supervisory Horticulturist, is in charge of Asian maples. Stefan Lura, Botanist in Plant Records, manages the maple inventory. Horticulturalist Joseph Meny, who maintains the Maples Collection, was in charge of mapping and labeling all the maples.

In a careful review of the Arboretum's inventory of plants, staff identified which are of high value. A high value (or VIP) plant is one for which there is accurate and complete data: its origin is known and good records have been kept. With 3,500 vouchers of native maples and 1,500 vouchers of non-native maples in the Herbarium, there is a great deal of information on these plants. (A voucher is an herbarium specimen that serves as documentation for a piece of information about a plant.) The Maples Collection contains trees that are rare or declining in their native ranges, such as the paperbark maple (*Acer griseum*), a native of central China, and the Japanese red maple (*Acer pycnanthum*). In addition, the collection includes the Arboretum's own

cultivars—for example, red maples such as *Acer rubrum* 'Brandywine' and *Acer rubrum* 'Red Rocket', which have been bred for exceptional, long-lasting red fall color and for resistance to potato leafhopper, a major landscape pest. Thus, the collection has depth and a broad range of germplasm, making it especially valuable.

PCN participation

The Arboretum is one of eighteen institutions in the United States and Canada to have a PCN-certified collection of maples. The collection serves as a reference point for research, so careful recordkeeping is a must. Participating institutions cooperate in the distribution of plant germplasm and share information to compare collections and identify duplications and gaps. Such collaboration strengthens collections by making efficient use of available resources.

The Arboretum is one of eighteen institutions in the United States and Canada to have a PCN-certified collection of maples.

Because plant loss due to weather conditions, pests, or other unforeseen circumstances is always a possibility, having backups—that is, more than one individual of any plant—at the Arboretum and within the PCN is vitally important. The Arboretum's Collections Disaster Plan identifies VIP plants, contains precise records and maps of the plants, and provides for safe storage of the data.

Perhaps the biggest challenge facing the Maples Collection team is how to develop the collection, given limited resources. The sharing and cooperation among PCN participants could enable the Arboretum to expand the collection, increasing the number and variety of trees. For now, visitors looking for autumn color will find plenty of it in the Maples Collection. For more information about the Plant Collections Network, go to <https://www.publicgardens.org/programs/about-plant-collections-network>. 🌳

KAREN ZILL is a DC-based freelance writer. Her work includes discussion guides for film and public television programs, memoirs, essays, and nature writing.

Meet Our Interns

In 2019, the National Arboretum was thrilled to welcome more than twenty interns. The annual program offers on-the-job training in horticulture, botany, research, education, facilities management, and public garden administration. We would like to say thank you to all of this year's interns. Your incredible hard work and seemingly unending enthusiasm helped us accomplish so much. We would also like to thank all of the participating partner groups and institutions that so graciously sponsored the interns; without them, this program would be impossible. Funding these internships is one of the ways FONA members and David Fairchild Society members support the Arboretum in a tangible way, enhancing the capacity of the Arboretum.



ROSE BEHRE

National Bonsai and Penjing Museum
Howard Community College (2020),
Plant Science

Maintained bonsai and penjing by pruning, watering, weeding, and other seasonal care. Also opened and closed the museum and answered visitors' questions about the care and maintenance of bonsai and penjing.

What's next: Advancing my knowledge of plant science and bonsai.

Funder: FONA



KAILA BEVINS

Fern Valley, Native Plant Collection
University of Maryland, College Park
(May 2020), Environmental Science and
Technology

Learned about native plants and their importance to the ecosystem. Improved my plant identification skills, learned how to drive a stick shift, and learned how to properly prune a live tree.

Created a tour for the US Arboretum's app about some of the ferns that can be found in Fern Valley.

What's next: Finish degree.

Funder: USDA Pathways (and Lahr Symposium funds)



MADELINE HUFFMAN

Springhouse Run
Oregon State University (June 2021),
Fisheries and Wildlife

Removed the invasive plant species in the stream restoration area, helped volunteers with water testing, learned about native wetland plant species of the mid-Atlantic, and worked on a project that focused on the relationship between wildlife and important native plant species.

What's next: Finish my degree and look for another internship.

Funder: USDA Pathways



SHANA BURKE

Asian Collections
University of Maryland (Fall 2020),
Agriculture Science and Technology

Worked on soil testing in various locations in China Valley. Compared the results with the tests done back in 1997. Performed various gardening duties throughout the Asian Collections.

What's next: Continuing my studies at the University of Maryland.

Funder: U.S. National Arboretum



ANDREW BELLO

National Bonsai and Penjing Museum
University of Arizona (2016),
Natural Resources Conservation and
Management

Learned the principles of horticulture and bonsai design.

What's next: Advancing my career in bonsai or in natural resource management.

Funder: National Bonsai Foundation



ADRIAN BRITT

Herbarium
George Washington University (May 2019), Biology, Urban Agriculture/
Environmental Sciences

Digitized and disseminated type and cultivar standard specimens.

What's next: Continuing in horticulture or going into a genetics lab involved in plant pathology.

Funder: U.S. National Arboretum



ABBY MOORE

Research under Fred Gouker
Ohio University (2021), Environmental
and Plant Biology

Worked on a genetic diversity study of *Sassafras albidum*.

What's next: Returning to Ohio University to continue lab work.

Funder: The Washington Center



ANNA SHATS

Herbarium
Graduated from college (2018), Biology/
Botany

Identified indeterminate grass species in the wheat genus and related genera (Triticeae). Also helped organize the grass (Poaceae) collection in the herbarium.

What's next: A year of working as a lab tech or ag tech, then going to graduate school in 2020.

Funder: FONA



In addition to their work at the Arboretum, Herbarium interns went to the Capitol to do collecting and vouchering of some of its historic trees.

NOT PICTURED

ALEC BOLUS

Gotelli Conifer Collection

University of Vermont, Horticulture
Helped weed, plant, prune, and propagate plants and photographed crapemyrtles within the Gotelli Collection to provide images for the new Arboretum App.

What's next: Possibly another position at a public horticultural institution.

Funder: FONA

ZAINAB PASHAEI

National Herb Garden

George Mason University (2013)

Supported the Herb Garden with garden maintenance, educational labels, greenhouse operations, and photography for the USNA app.

What's next: Begin a career in plant science. Find new ways to use plants for the health and well-being of people and the environment.

Funder: Herb Society of America

WILL ELLINGTON

Research under Fred Gouker

North Carolina State University (May 2020), Microbiology and Plant Biology
Screened for boxwood blight resistance in various Arboretum boxwood crosses to help develop an elite cultivar with key horticultural traits, especially resistance to boxwood blight.

What's next: Complete degree and then apply to graduate school.

Funder: U.S. National Arboretum

MITCHELL DEGASPERIS

Boxwood Collection, Perennials, and Friendship Garden

University of Maryland, Baltimore County (2021), Biology

Researched the effects of white-tailed deer on local perennial populations.

What's next: Complete my degree.

Funder: U.S. National Arboretum

HANNAH IMHOFF

Dogwood Collection

University of Maryland (2020), Environmental Science and Policy, and Studio Art

Managed and maintained the Dogwood Collection by weeding, planting, and pruning. Investigated the impact of pollinators on Abelia species in the collection.

What's next: Finish both of my degrees at UMD and find a secure position working with plant life or wildlife.

Funder: U.S. National Arboretum

KATIE KRULAK

Archives

Samford University (2021), Classics

Sorted and organized the collection of newspaper clippings and made a finding aid online. Organized the official archival box for the history, construction, and conservation of the Capitol Columns.

What's next: Return to school and seek further archival opportunities either on campus or in my community.

Funder: The Washington Center

BREANNA BOUDINOT

Research under Kevin Conrad

Funder: Ohio University

MAX FEDELI

Introduction Garden/Gardens Unit

Funder: FONA

ANDREW FANGMEYER

Azalea Collection/Gardens Unit

Funder: FONA

AUNDREA LAWSON

Herbarium

Texas Tech University

Digitizing the Cultivated Maples of the U.S. National Arboretum Herbarium

Funder: Wallace Carver–USDA

JOHN REALL

Herbarium

George Washington University

Vouchering the National Herb Garden

Funder: FONA

DEANN DRA RICHARDS

Administration

Funder: U.S. National Arboretum

KAYLA SURLEY

Administration

Funder: U.S. National Arboretum

Below: Aundrea Lawson presented her work at the USDA Next Generation Poster Symposium, where she won first place!





Colonial Bentgrass

Hybrid Bentgrass

Creeping Bentgrass

BENTGRASS HYBRIDIZATION RESEARCH

Scott Warnke

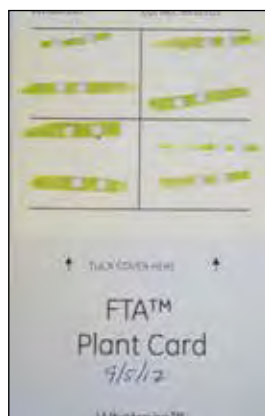
The U.S. National Arboretum has a dual mission of education and research. While visitors are familiar with the work of the staff in maintaining the beautiful gardens and plant collections, the scientific research is more behind the scenes. Much of the Arboretum's research takes place at the Beltsville campus in Maryland. The Arboretum's Floral and Nursery Plants Research Unit has many ongoing projects, including one titled "Germplasm Development for Reduced Input Turf Management Systems." A recent accomplishment in that project is a new method to identify bentgrass hybrids.

The bentgrasses are native to Western Europe and very likely migrated to the United States with the first European livestock because the seeds are very small and are easily transported in animal fur. The two primary cultivated species of bentgrass are commonly referred to as creeping and colonial bentgrass. Creeping bentgrass is widely used in the northern regions of the United States on golf courses because of its ability to tolerate very low mowing heights and to recover quickly from damage by spreading. From a sustainability perspective, creeping bentgrass could be improved. It is a water-loving species and can be very susceptible to a common fungal disease called dollar spot. The disease name comes from the fact that it causes silver dollar-sized spots on the turf, and since more money is spent to manage this disease than any other, the name is fitting. Colonial bentgrass is not as widely used because it has lower turf quality and spreads more slowly. However, colonial bentgrass is more drought tolerant than creeping bentgrass and is more resistant to dollar spot, so hybridization between the species is a strategy that could be used to improve bentgrass sustainability.

Between-species pollination of creeping and colonial bentgrass is possible and has been reported by a number of scientists. One of the challenges in developing bentgrass hybrids is identifying which plants are hybrids because seedlings from a plant can be the result of a within-species pollination or the preferred between-species pollination. Generally, 75% of seedlings are the result of unwanted within-species pollinations. The distinguishing

visual characteristics of hybrids are subtle and require that the plants be large to be evaluated. To identify hybrids more effectively, previously developed DNA sequence information and rapid DNA isolation techniques have been adapted to allow thousands of seedlings to be screened for the desired hybrids quickly and inexpensively. The process involves capturing DNA on filter paper saturated with chemicals that preserve the DNA. A hole punch is then taken from the filter paper and used in a process that makes many copies of a DNA piece that is specific to either creeping bentgrass or colonial bentgrass. The bentgrass seedlings that have both DNA pieces are hybrids,

and more than 500 have been identified so far. The hybrids are being screened in the field to learn more about their drought tolerance, fertility, and resistance to dollar spot. The long-range goal of this work is to create bentgrasses that can be more sustainably managed. 🌱



SCOTT WARNKE is a Research Geneticist with the USDA-Agricultural Research Service and works for the U.S. National Arboretum's Floral and Nursery Plants Research Unit in Beltsville, MD.

Above: Bentgrass DNA imprinted on filter paper. If kept dry, the DNA is stable on the card for years.

Take Your FONA Card When You Travel!

Did you know that a current membership card from FONA entitles you to special admission privileges and discounts at 320 gardens throughout North America? Take advantage of this special membership benefit to visit participating gardens when you travel. This applies to all FONA memberships at any level.

WHAT IS THE RECIPROCAL ADMISSIONS PROGRAM?

The American Horticultural Society's (AHS's) Reciprocal Admissions Program (RAP) is a network of more than 320 horticultural institutions in 48 states and the District of Columbia, plus Canada and the Caribbean. A current membership card from the AHS or a participating institution (like FONA) entitles individuals to special admission privileges and discounts at other participating institutions. Reciprocal benefits may include free or discounted admission, parking, educational programs, guided tours, and/or discounts at the gift shop.

WHICH GARDENS PARTICIPATE?

A complete listing of participating

institutions can be found on the AHS Web site: www.ahsgardening.org/rap. Or you can ask us at info@fona.org to mail you a copy of the Reciprocal Admissions Program Guide.

HOW DO I USE THE RAP BENEFIT?

Present your current membership card at the admissions counter or gift shop of any participating garden to receive the RAP benefits listed for that garden. Each card will admit only the individual whose name is listed on the card. In the case of a family, couple, or household membership card that does not list individual names, the garden extends the benefit(s) to at least two of the members. In this case, it is at the garden's discretion to extend benefits to more than two individuals.

Some gardens may require a photo ID.

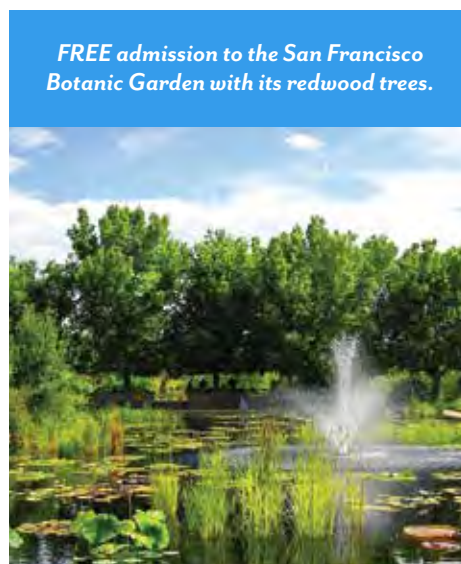
If you are planning to use this benefit, we recommend that you call the gardens you plan to visit, because some gardens have exclusions for special events or exhibits, for visitors who live less than 90 miles away, or other reasons. If you have questions about the RAP or its exclusions, please contact FONA or the garden you plan to visit to inquire about these guidelines. Have you taken advantage of this membership benefit? 🌳

WHERE HAVE YOU USED YOUR CARD?

We love hearing from you about where you've gone and how you've been able to use this membership benefit. Show us on social media by tagging @FONArboretum or send an email to info@fona.org.



FREE admission to the Denver Botanic Gardens with its waterlilies and fountains.



FREE admission to the San Francisco Botanic Garden with its redwood trees.



FREE admission to the Desert Botanic Garden (Phoenix, AZ) with cacti of all shapes and sizes.

Photo credit: Donald Pommer



COMMEMORATIVE BENCHES AT THE U.S. NATIONAL ARBORETUM

Lovely 6-foot teak benches are available for purchase as a way to commemorate family, friends, and loved ones or to honor an occasion such as a birth, wedding, or retirement.

When you purchase a bench, your support provides important funding to further the mission of FONA and the Arboretum in addition to being a commemoration. Each bench will have a plaque mounted on it, engraved with your message or dedication. Your donation of a commemorative bench is tax deductible.

Please contact us for a brochure and more information at info@fona.org or 202.544.8733.

Call for Used Book Donations

IS YOUR BOOKSHELF FULL OF GARDENING BOOKS? Are they ready for a new home? Consider donating your used books to FONABOOKS. Our volunteers prepare donated books to be sold in the lobby of the Arboretum's Administration and Visitor Center building and at special events like the Lahr Symposium and the Garden Fair. Your donation is tax deductible, and all proceeds from the book sales go toward supporting the Arboretum. Please reach out to us about book donations at info@fona.org.



Special Book for Sale

We are fortunate to have a very special offer for you. Please call the office if you are interested in this special donation: Flowering Plants of Great Britain in 6 volumes by Anne Pratt.

This work covers more than

1,500 species with 300 very beautiful colored illustrations. It took more than a decade—from 1855 to 1873—to publish the full set of books (\$550). If you are interested in owning this treasure, please get in touch at info@fona.org.

MARY GENE MYER runs the FONABOOKS program. She is a former FONA board member and lifetime book lover.

WASHINGTON YOUTH GARDEN

WYG and its Green Ambassadors

Jake Dacks

UNDETERRED BY THE RECORD SUMMER HEAT, high school summer interns in the Green Ambassador Program returned to the garden in June for another year of tending to the soil, building new garden infrastructure, and honing their culinary skills. Under the leadership of Aliyah, Genea, and Damion (three returning Green Ambassadors), the new crop from nine different schools all became fast friends in the unfamiliar terrain of the Arboretum. While getting used to the heat and bugs can be a challenge for anyone, this work can be uniquely difficult for youth taking as many as three busses each day across the city to their first job, doing something they've never even spent much time considering. We're grateful that they rose to the challenge and have some new skills and experiences to show for it.

This year, in addition to the food-focused cohort of first-time Green Ambassadors (a.k.a. the "Farm Crew"), we welcomed back a group of seasoned veteran interns to pilot an expansion of the program. Dubbed the "Steward Crew," it was largely made up of young people who had already spent one or two summers working at the Washington Youth Garden and were ready for additional responsibility. Their jobs were focused on projects in other parts of the Arboretum, as well as in our school gardens. The theme for the Steward Crew was watershed health, and the program was funded by a grant from the DC Department of Energy and Environment. While the group spent the bulk of their time weeding the recently restored Springhouse Run and mulching around trees and garden beds, they also had some educational opportunities, like touring DC Water's Blue Plains Advanced Wastewater Treatment Plant and learning tree care practices from Casey Trees.

It's such a privilege to work with the Green Ambassadors and to see them grow, both as individuals and as a community, over the course of the summer. We hope that their continuing interest in returning year after year is a testament to the welcoming culture at WYG. As Damion, a three-year Green Ambassador who grew up in the Arboretum neighborhood spelled out in a poem he wrote for us, "The garden, for me, is a safe space. I protect it and it protects me. The garden always has open arms. It will always embrace you." 🌱

JAKE DACKS (aka "Farmer Jake") is the WYG Garden Manager. He mostly plays in the dirt all day.

Top: The Farm Crew (first-time interns) proudly stand by the arbor they built for a school garden; **Bottom:** Interns add a fabric weed barrier around the raised beds at a school garden.





Fall Garden Tips

- **Plant pansies** now and enjoy flowers throughout winter into spring. **Deadhead** pansies regularly to prevent seed formation and promote flower production. **Liquid feed** pansies with fish emulsion every two weeks.
- **Divide and transplant** spring flowering perennials like iris, daylilies, and peonies.
- Before Thanksgiving, **plant spring flowering bulbs** such as allium, crocus, daffodils, and tulips. Broadcast bulb tone directly over the surface where bulbs are planted to encourage root development.
- Fall is a great time to **plant deciduous trees and shrubs** while they are not burdened with the production of flowers, foliage, or fruit; with the earth still warm, plants can focus solely on root growth.
- **Transplant evergreens.** Transplant deciduous trees and shrubs after leaves have fallen. A few days before transplanting, thoroughly water plants to be transplanted, water again immediately after transplanting, and water regularly thereafter.
- **Deeply water** established and newly planted shrubs in preparation for winter. Fall drought is often overlooked. It is vitally important to supply plants going into winter dormancy with adequate water to improve winter hardiness.
- Stay informed about chilling nighttime temperatures and plan to **move tropical plants indoors** before they are damaged by frost.
- **Clean and prepare** birdfeeders for winter.
- **Install netting** around aucuba, azaleas, yews, and roses to protect from deer browse. As an alternative, deer repellents can be sprayed, but spray must be reapplied regularly and after rain or snow.
- **Remove spent summer annuals** and vegetable plants by cutting tops and leaving roots. Rotting roots create tunnels where water, air, and roots will easily navigate the soil next season.
- Unless they have attractive winter interest forms or seed heads, **cut down perennials.** Leave some perennials standing in less visible areas of your garden to provide overwintering opportunities for beneficial insects such as butterflies, praying mantis, and predatory beetles.
- In preparation for the onslaught of leaves and garden debris from fall and winter garden cleanup, **empty your compost bins.** Use compost to top-dress garden beds and plants.
- **Clear future garden areas,** add compost and manure, till, and leave rough to allow frost action to kill weed seeds and diseases.
- Add fallen leaves and disease-free garden debris to compost pile.
- **Turn off outdoor water taps and drain.** Drain hoses and store loosely coiled, without kinks, in a dry location.
- **Enjoy a cleaner and healthier garden** throughout the winter. Your annual 1/2-inch layer of compost and 2-inch layer of mulch can be applied now. 🌳

NANCY AND PIERRE MOITRIER operate *Designs for Greener Gardens*, a boutique gardening company that specializes in designing, creating, developing, and maintaining distinctive gardens of all styles. Pierre hails from France and brings the charm of the Old World to their garden creations. Nancy's 40 years of gardening experience combined with her design knowledge and innate artistic eye add a superior dimension to their garden projects. Follow *Designs for Greener Gardens* on Facebook.



FRIENDS OF THE NATIONAL ARBORETUM

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HAPPENINGS

For more information, visit usna.usda.gov/ or fona.org

FULL MOON EXPERIENCES: HIKES OR FOREST BATHING

November 11, 12, 13

7:00pm

December 11, 12, 13

7:00pm

Sign up and come to the Arboretum after hours for either a brisk 2-mile hike with a tour guide or a meditative Forest Bathing guide. Registration and fee online at FONA.org. FONA members, use your discount code. Sign up at fona.org

SPECIAL EXHIBIT: TWISTED GENIUS: THE ECCENTRIC BONSAI ARTISTRY OF NICK LENZ

Oct. 26 – Nov. 17, 2019

10:00am – 4:00pm

National Bonsai & Penjing Museum, Special Exhibits Wing

An exhibit of bonsai creations with whimsical creatures, playful pots, and spooky trees. Nick Lenz is a well-known, provocative, pioneering bonsai artist, styling trees he collected over a 40-year period from the northern forests and landscapes of the United States and Canada. Bringing together works from more than a dozen private collections and three botanical institutions, this exhibition of bonsai and ceramics highlights well-known themes in the Nick Lenz oeuvre, including whimsy, drama, and wilderness. Free.

WREATH-MAKING WORKSHOP: HERBAN LIFESTYLES PROGRAM SERIES

Saturday Nov. 9, 2019

10:00am – 12:00pm

Visitor Center classroom

Join Arrin Sutliff in exploring wreath making as an art form. Similar to creating floral arrangements, this workshop will help you bring together a variety of local textures, shapes, and colors that reflect the season. Each student will take home their unique piece and a worksheet with tips for future reference. All tools, materials, and botanicals will be provided. Registration required on the Arboretum's website; fee: \$110.



Are you a federal, civilian, postal, or military employee or retiree? You can help preserve the National Arboretum by designating FONA through your payroll deduction today! To do so, donate through the Combined Federal Campaign of the National Capital Area's website. Our CFC number is #81610.