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A second conceptual plan provides for a visitor node, parking, and improved paths in the Asian Collections. The addition of an orientation kiosk, new restrooms, and a new path system featuring some accessible paths will be a welcome addition to this important collection. The next step will be to develop a more detailed plan in preparation for actual construction at a future date.

The third area represents a new feature for the arboretum—a 12-acre classical [Chinese garden](#). This ambitious project is a joint project between the U.S. Government and the People's Republic of China. The effort is being led by the U.S. Department of Agriculture and the Chinese Academy of Forestry.

The Master Plan guides short-term and long-term development on the arboretum's 446-acre campus and complements the institution's Strategic Plan 2, which guides program development. (The [Strategic Plan 2](#) was adopted in October 2003.) The revised Master Plan and Strategic Plan 2 are crucial to the arboretum's long-range plans and direction. The new plan will be on display in the lobby of the Administration Building beginning in June 2007.

## Research Unit Scientist Wins Grant From U.S. Golf Association

Arboretum Research Plant Pathologist Dilip K. Lakshman recently received a grant of \$30,000 from the United States Golf Association to work on a specific disease problem of turfgrass. *Rhizoctonia solani* causes damping off diseases of turfgrasses, variously known as brown patch and yellow patch diseases of cool season grasses, large patch disease of warm season grasses, and leaf and sheath spot disease. There are both turfgrass-pathogenic as well as non-pathogenic *Rhizoctonia* isolates in the soil. Non-pathogenic isolates are effective suppressors of disease in turfgrasses, but can not be readily identified in the field. Pathogenic isolates of *Rhizoctonia* species are known to vary in their host and climate specialization as well as susceptibility to pesticides. Pathologists mainly depend on time consuming, cumbersome and sometimes unreliable methods to diagnose the pathogen. The current proposal seeks to solve this problem by developing a reliable and speedy molecular detection method. Precise identification of *Rhizoctonia* isolates should lead to reduced application of toxic soil pesticides and in eco-friendly management of *Rhizoctonia* diseases.

## Arboretum is Official Participant in Annual National Cherry Blossom Festival

The National Arboretum offered three unique perspectives and insights on cherry blossoms during its participation in the 2007 Annual National Cherry Blossom Festival. The first of its event trio was *Beyond the Tidal Basin: Introducing Other Great Flowering Cherry Trees*, an exhibition and self-guided tour of a variety of flowering cherry trees in the National Arboretum's collection. The tour featured flowering cherries introduced by the National Arboretum, including two flowering cherry cultivars developed by the Arboretum's research unit – *Prunus* 'First Lady' and 'Dream Catcher'.

The arboretum collaborated with the Japan Information & Culture Center, Embassy of Japan, to present the first North American exhibit of *The Botanical Art of Yoshitsugu Koyanagi*. The exhibit, which opened to coincide with the festival, continues through

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Ornamental cherry selection featuring delicate pink-tinged flowers.

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Cherry blossoms in peak bloom in the arboretum's research fields.

May 31, and features flowering cherries among other horticultural and native plant selections. Mr. Koyanagi is a botanical artist from Japan. He received an appointment as a research artist from the Japan Agency of Cultural Affairs and is the author of five textbooks.

The arboretum's finale for the festival featured the National Bonsai & Penjing Museum through displays of bonsai and viewing stones at the Sakura Matsuri, the official Japanese Street Festival on Saturday, April 14. The festival is produced by the Japan-America Society and takes place following the annual Cherry Blossom Festival Parade. Arboretum staff and volunteers offered on-going demonstrations of bonsai techniques and commentaries on viewing stones, which often accompany bonsai and are naturally formed stones that resemble landscape features or other objects.

This year's National Cherry Blossom Festival marked the 95th anniversary of the gift of the original 3,000 cherry trees given by

the Mayor of Tokyo to the United States.

## Arboretum Soil Goes to the Smithsonian

The National Arboretum celebrated Earth Day on Monday, April 23 by literally removing earth from the ground. Staff from the Natural Resources Conservation Service (NRCS) cut a slice of soil layers, or a soil monolith, from a location in the arboretum's Maple Collection field. NRCS, in partnership with the District of Columbia Soil and Water Conservation District, had determined that this spot would yield an undisturbed sample of typical District of Columbia soil, known by soil scientists as Sunnyside soil.

United States Department of Agriculture (USDA) Secretary Mike Johanns attended the morning event to officially present the arboretum soil sample to the Smithsonian Institution. The Soil Science Society of America (SSSA), the Smithsonian Institution, USDA, and others are planning a soil exhibit for the Smithsonian's National Museum of Natural History. When this special exhibit



Staff of the NRCS remove the official soil sample for the District of Columbia from the arboretum's Maple Collection field.



Secretary Johanns discusses the importance of soil during the Earth Day event at the arboretum.

opens in July 2008, the arboretum's soil will be featured along with other representative samples from all 50 states and the U.S. territories.

Sunnyside soil series consists of deep, well-drained, moderately permeable soils formed in unconsolidated deposits of very old, dominantly sandy sediments. It is one of the most productive soils for agriculture and forestry as well as being one of the soils best suited to construction and recreational development.

School children from two District of Columbia elementary schools attended the event, participating in soil-related educational activities sponsored by the NRCS. They also could don hard hats to descend via earth-cut steps into the 6-foot-deep pit from which the sample was cut to take a first-hand look at the soil layers.

Arlen Lancaster, USDA-NRCS Chief; Dr. Edward B. Knipping, USDA Agricultural Research Service Administrator; and Dr. Thomas Elias, National Arboretum Director, also attended the historic event.

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## Research Unit Stakeholder Liaison Committee Formed

Arboretum Director Dr. Thomas Elias announced the formation of a U.S National Arboretum Green Industry Liaison Committee during a [Floral and Nursery Plants Research Unit Stakeholder Reception](#) held in January. The committee is composed of growers from different parts of the country that represent both the floral and nursery industries. The Liaison Committee will take the lead in assisting the National Arboretum in its efforts to facilitate direct dialog between the research unit and nursery industry stakeholders. To accomplish this the committee will 1) serve as a sounding board for identifying research initiatives and priorities; 2) serve as an advocate for FNPRU research to other members of the nursery industry; to the American Nursery and Landscape Association and its research arm, Horticulture Research Institute; to the National Program Staff of the Agricultural Research Service; and to the United States Congress; and 3) help identify and establish within the nursery industry partnerships for Cooperative Research and Development Agreements, research trusts, and other formal or informal agreements to help promote and transfer research more effectively to the nursery industry.

The reception was held in a Baltimore, Maryland, hotel on the eve of the Mid-Atlantic Nursery Trade Show (MANTS).

Invitees were floral and nursery professionals who represented a cross section of the green industry. Elias served as host and emcee for the evening, which started with refreshments generously provided by the Friends of the National Arboretum and ended with an hour-long discussion of current issues facing both groups. A key topic of discussion was improved communication with the stakeholder community. Those who attended expressed interest in repeating the event next year, describing it as a valuable experience.

## Arboretum Showcases Research at Local Trade Show

Recent accomplishments of the Floral and Nursery Plants Research Unit (FNPRU) were on display for over 12,000 green industry participants at the Mid-Atlantic Nursery Trade Show (MANTS), held January 10-12, 2007, at the Baltimore Convention Center. The show featured 960 exhibiting companies in 1500 booths. The National Arboretum's booth drew attention with its display of FNPRU's recent introduction, the variegated beautyberry *Callicarpa* 'Duet', as well as other plant germplasm-related exhibits. The annual show is known throughout the country for providing the green industry with a marketplace for plants, nursery stock, landscape and garden items, equipment, tools, and other green goods, as well as providing a forum for customers to make contacts, fill orders, and see the latest developments and products in the industry.



Taxonomist Dr. Alan Whittimore (left) and horticulturist Kevin Conrad staff the arboretum's booth at the 2007 MANTS show.

## Fern Valley Improvements

The arboretum took an important step in implementing its Master Plan with the completion of and approval for major physical improvements to Fern Valley. The National Capital Planning Commission and the U. S. Commission on Fine Arts are the planning bodies that review and approve projects like this at the arboretum. [Fern Valley](#) provides a rustic woodland and open field habitat for native plants of the eastern United States and their cultivated forms. The plans include an extension of the Flowering Tree Walk that leads to a new accessible entrance to Fern Valley located down the road from the Capitol Columns. A portion of the Fern Valley trail system will be made accessible for the first time, allowing more visitors to reach the interior of this beautiful site. A raised wooden walkway will cross a seasonally flooded area and new bridges and benches will enhance the visitor experience.

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Efforts are underway to contract for the first phase of construction for these improvements later this year. When completed, the Fern Valley project will serve to further the arboretum's goal of connecting its display gardens and collections through new pedestrian pathways, as well as making these areas more accessible to all.

## Improvements Made to Ellipse Event Site

Stakeholders holding plant sales near the arboretum's administration building will no longer have to roll their supply carts over deep swales and pot holes, nor will they need to rent generators or run phone lines from adjacent buildings. Staff worked with outside contractors to make the roughly 80 x 100 foot area across the road from the bonsai museum exit a more functional event space. The once uneven turf area now consists of evenly laid compacted fill that sits slightly higher than the surrounding grade. A mixture of gravel and compost spread over the fill supports new turf. The design assures more rapid drainage of the area, which better ensures the site's recovery from repeated use as a tented space. It also reduces the

possibility of pooling water from inclement weather, which has been a problem in the past.

To facilitate sales, contractors ran telephone and electric lines to the site. Phone lines allow credit card sales and electricity eliminates noisy and expensive generators. Sales associated with the annual Potomac Bonsai Association Spring Bonsai Festival and the National Capital Orchid Society fall show, as well as other events, will be held at this site.

## Colonial Theme Garden Renovations Underway

As a part of the regular development and maintenance of the National Herb Garden, most of the ten Theme Gardens in the collection have been renovated in recent years. One of the last to be tackled is the Colonial Garden, which has proven difficult because it contains mugwort. Mugwort, *Artemisia vulgaris*, has deep rhizomes by which it can quickly spread. It is very difficult to eradicate, particularly if coddled in good garden soil for many years. The Colonial Garden has hosted a robust colony of it for almost 25 years. While its weedy reputation was well known to staff, it was planted in the garden because of its significance as an herb frequently used in colonial times, when it was used primarily as a medicinal herb for a variety of ailments.

It became increasingly difficult to keep the mugwort in bounds in the garden, and it grew to cover about

one-third of the Colonial Garden. Staff cut it back last summer and treated it with herbicide. The plant is not entirely dead and will likely have to be treated again this summer to ensure that all pieces of it are eradicated from the soil. When all traces of the mugwort are gone, replanting will begin.

## European Plant Collection Trip Contributes Plants for Breeding Programs

Research scientist Dr. Richard T. Olsen led a 10-day germplasm acquisition trip to Germany, Belgium, and the Netherlands in late January and early February 2007. (Germplasm is any form of hereditary material, from seeds to actual plants.) The purpose of the trip was to establish contact with nurseries, botanical gardens, and arboreta for the exchange of woody ornamentals, particularly genera of important urban tree species that are grown in Europe, but are not available in the United States.

Highlights of the trip included a visit to Germany's IPM Essen Trade Show, the world's largest such horticultural event, where some of the biggest and most proactive European nurseries display their nursery stock. A stopover at Kalmthout Arboretum, Kalmthout, Belgium introduced the group to this historical collection and its internationally renowned *Hamamelis* collection.

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The new event site on the north side of the central ellipse offers convenience and a view of the Capitol Columns.

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In the Netherlands, the group visited several important Dutch nurseries, including Bomer's Nursery in Zundert (specializing in *Fagus*, *Ginkgo*, *Quercus*, and other grafted plants); Piet Zwijnenburg, Jr. Nursery (rare and unusual plants, specializing in *Hydrangea*); Mark and Rein Bulk Nursery (an extraordinary collection of rare plants, including *Carpinus fangiana*); and F.C. Esveld, with over 10,500 plants listed in its catalog.

The trip resulted in important new contacts and relationships that will open doors to botanical exchanges with the European nursery industry. Kevin Conrad of the arboretum's [Woody Landscape Plant Germplasm Repository](#) is helping to import over 100 new accessions



*Acer rubrum* 'Brandywine', one of former arboretum scientist Dr. Denny Townsend's introductions (1994), is considered the best red maple in the Netherlands. The entire bed in this Dutch nursery is 'Brandywine'—over a thousand cuttings. Evident is the traditional Dutch method of marking plants in propagation beds with large, white, easy-to-read labels.

(including *Acer*, *Catalpa*, *Cercis*, *Liquidambar*, *Nyssa*, *Platanus*, and *Styrax*), which will be incorporated into breeding programs and collections of the USNA. The Gardens Unit provided funds for purchasing maples (*Acer* spp.) to augment the USNA maple collection. Additional funding came through a grant to Dr. Olsen from the Maryland Department of Natural Resources and Western Maryland Resource Conservation and Development Council for breeding utility line-adapted urban tree cultivars.

## Pines Removed to Implement New Flowering Tree Walk Planting Plan

In March, arborists removed 15 white pines near the Administration Building to make way for new trees that will be planted along the Flowering Tree Walk in April. The arboretum's Flowering Tree Walk Committee worked with arboretum staff and Reed Hilderbrand Associates, Inc., a Boston landscape architecture firm hired by the Friends of the National Arboretum (FONA), to design a bold, new concept for the planting along the Flowering Tree Walk. The plan takes its cues from surrounding features—mature beech woods near the National Capitol Columns, prairie and meadow areas of the Native Plant Collection, and black gums growing in the woodland that flanks Mount Hamilton. Two USNA elm introductions, 'New Harmony' and 'Jefferson', will



View of the Flowering Tree Walk where 15 white pines were removed.

provide the unifying element in the plan, which also specifies new mowed grass pathways in the Ellipse Meadow.

In the course of the design work, it became clear that the white pines along Meadow Road conflicted with the newly identified objectives. The trees were carefully evaluated by USNA arborists before the decision was made to remove them. The pines had experienced significant storm damage over the past 15 years, and because they were blocking the prevailing winds, were contributing to disease problems and heat build up in the National Herb Garden. All of the pines were from a single nursery source, but other pines from this same source continue to thrive in several places on the grounds.

The new trees taking the place of the pines are young, and it will take several years for them to shade the Flowering Tree Walk and decades more to grow to maturity; however, they already serve to diversify the arboretum's holdings of small flowering trees. The Flowering Tree Walk will be maintained this summer by the Flowering Tree Intern, a position funded by the Friends of the National Arboretum.

## Staff Participate in U.S.-Russia Environmental Agreement Working Group Meetings

Arboretum staff members Kevin Conrad and Kevin Tunison participated in U.S.-Russia environmental agreement working group meetings held at the U.S. Fish and Wildlife Service headquarters in Arlington, Virginia, in February. The Russian delegation was led by Anatoliy S. Totskiy, Deputy Director of the Department of International Cooperation in the Ministry of Natural Resources of the Russian Federation. The U.S. delegation was headed by Kenneth Stansell, Acting Deputy Director, and I. Teiko Saito, Acting Assistant Director for International Affairs, both from the U.S. Fish and Wildlife Service in Washington, D.C.

The meeting took place under the framework of the bilateral environmental agreement between the two nations concluded in June 1994 and focused on Area V of the agreement—Protection of Nature and the Organization of Reserves. The areas discussed were wide-ranging and included concerns with polar bears, walruses, birds, and marine life as well as plants. Conrad, Curator of the Woody Landscape Plant Germplasm Repository, and Tunison, Plant Records Botanist, promoted cooperation among botanical institutions

in addressing plant germplasm preservation, including seed exchange and distribution of plants endemic to each country. They also spoke of the need to organize and carry out joint botanical research and collecting expeditions with Russian partners.

## Rare Book Room Established

The USNA librarian, Robin Everly, prepared an office space next to the main library in the Administration Building to serve as a rare book room. A contractor installed mobile shelving, and Everly covered the window wall with a special UV filtering film. She plans to add a dehumidifier and will monitor both moisture and temperature in the room to assure the best possible conditions for the institution's collection of pre-1900 books. There are approximately 1,000 books in the library that were published prior to 1900. For botanical books and art, 1730 to 1840 is considered a period of intense productivity and interest.

The impetus for creating this special room was Dr. Frederick G. Meyer's donation to the arboretum of his personal library of almost 1000 volumes. Meyer, director of the USNA herbarium for 28 years, was not only a renaissance botanist, but also a collector of rare botanical books. His collection included many books written by and on famous plant explorers and exploration, early herbals, and botanical illustration.



*Brucea antidysenterica* from the 1790 *Travels to discover the source of the Nile* by James Bruce. This plant was named after the author of the book, who suffered from fatal dysentery and was treated with a medicine made from this plant. Its bark is now used in traditional medicine to treat cancer.

Eighty-six of the books in his donation were published before 1840, with the earliest being a pocket-sized Leonard Fuch herbal from 1545. A collaborative project between the arboretum and the National Agricultural Library's (NAL) Cataloging and Special Collection Branches recently accomplished the cataloguing of Meyer's gift. Kathleen Dougherty, a retired NAL cataloger and library volunteer, helped prepare the books for NAL to catalog. Access to the collection is by appointment only through the librarian.

## USNA in the News

The arboretum has been included in a variety of print features and on-air segments over the last several months.

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Richard Olson was interviewed on *Fox News* on the impact of January's warm temperatures on flowering trees and plants. Chrissy Moore and Jim Hughes were interviewed by Jeffrey Mielcarz of *The Weather Channel's Road Crew* for segments showcasing the National Herb Garden and The National Bonsai & Penjing Museum.

These segments will air in late April and early May. Alan Whittemore collaborated with *The Washington Post* on its annual guide to the National Cherry Blossom Festival and provided images of a variety of flowering cherries that appeared in the Post's guide to the festival. Susan Burgess appeared in a series of WJLA-TV's *Good Morning Washington* promotional segments inviting viewers to visit the Arboretum.

The arboretum was featured on live segments on WUSA-TV and Fox 5 Morning News covering the Earth Day at the USNA event on April 23, which celebrated the designation of the official soil of the District of Columbia (see lead article in this edition).

## China Garden Update

On February 21, 2007, Secretary of Agriculture Mike Johanns sent letters to Congress requesting permission to build a classical

Chinese garden at the National Arboretum utilizing funds from various sources, including private donations. The construction of new federal buildings in Washington, D.C., requires Congressional approval, thus further steps towards completion of this project will await a decision from Congress.

The proposed garden is the result of a Memorandum of Agreement signed by representatives from the U. S. Department of Agriculture and the Academy of Forestry of the People's Republic of China to plan and construct a 12-acre classical Chinese Garden on the grounds of the arboretum. The [China Garden](#), as it has been named, will consist of 22 structures, a lake and several small ponds, and several gardens. It is based upon the Yangzhou-style classical gardens in the Jiangsu Province of China. The Chinese government will supply the structures, furniture, art work, rocks and rockeries, and even send specialists to Washington, D.C., to construct the buildings. The U.S. will supply the land, all of the site work and utilities, and maintain the garden once it is completed.

A conceptual plan has been prepared and a three-dimensional model—on display in the lobby of the arboretum's administration building—has been constructed to help people visualize this proposed new garden.

## Arboretum Features Chinese Gardens during Environmental Film Festival

The arboretum once again participated as one of many different venues for the week-long annual Environmental Film Festival, which celebrated its 15th anniversary this year. In March, over 80 people attended the evening screening of two of the six chapters of the film "Suzhou Gardens." Arboretum Director Dr. Thomas Elias introduced the film by reviewing the principles and philosophy of classical Chinese garden design. He showed examples of stonework, buildings, and plantings in China that served as inspiration for the Chinese classical garden planned for the National Arboretum.

The Chinese have documented gardens dating back to as much as 2,000 years ago. The concepts that shaped Chinese gardens were influenced by the natural environment, the forces of human culture, and the owner's social and political standing. The zenith of classical Chinese gardens occurred during the Ming and Qing dynasties, or 1368 to 1911. The two chapters of the series, originally created for Chinese television, focused on garden structures, stonework, and the plants of the gardens.

## Scientist Meets with Stakeholders at ANLA Management Clinic

Research Unit scientist Margaret Pooler attended the 2007 American Nursery and Landscape Association (ANLA) Management Clinic in Louisville, Kentucky, in January, and presented an invited talk about new plant introductions. She discussed how plants from the arboretum are evaluated, named, and released, and what role nursery stakeholders can play in the process. She also presented a description of new and future tree and shrub introductions from the USNA.

The ANLA Management Clinic has taken place yearly for the past 35 years to help members solve old problems and discover new opportunities. The theme for the 2007 meeting, "A World of Ideas," was appropriate for ANLA's diverse membership, including growers, distributors, landscapers, and retailers.

## New Volunteers Complete Gardener Training

Twenty-four new volunteers completed the arboretum's annual winter gardener training course held in March. The classes cover a wide range of topics, from plant identification to soils, pruning to Integrated Pest Management, with arboretum staff serving as instructors. The training includes

a tour of the grounds as well as visits to the composting area, research labs, library, plant records office, and herbarium. While the majority of the class elected to work in the gardens, a few will help in the library, plant records, and the herbarium.

Volunteers provide vital assistance to the arboretum. In fiscal year 2006, USNA volunteers donated 13,359 hours, or the equivalent of 6.4 full-time employees. According to a formula developed by Independent Sector, the total value of these hours would be \$240,996. Volunteers give generously, but they also have opportunities, as through the training course, to learn. Many report that they take away much more than they give, especially when they have the opportunity to work directly with the collections and arboretum scientists and horticulturists. The arboretum accepts applications from potential volunteers throughout the year.

## Incense Cedar Screen Planted at Brickyard

A screen planting of incense cedar, *Calocedrus decurrens*, was recently planted along the north side of the brickyard near the New York Avenue service road. One hundred seedlings were donated by the Friends of the National Arboretum following last year's cookout honoring the state of California. The planting



Mature specimens of incense cedar.

will help to screen the view of the kilns in the brickyard and the arboretum's green waste management operations from motorists traveling along New York Avenue.

The incense cedar is a columnar evergreen tree native to California and Oregon, but it is adaptable and can be grown throughout much of the United States.

## Lura Fills Asian Collections Slot

Stefan Lura was appointed to one of two gardener slots funded by the Friends of the National Arboretum in the Asian Collections. Lura served as Intern in the Asian Collections from May 2005 to May 2006. He has been serving in a temporary position providing support for the Plant Records Office since last year.

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In his new capacity he has already completed a redesign and replanting of the triangular bed located at the junction of Hickey Hill Road and the access road leading to the top of Hickey Hill in the Asian Collections. Lura holds a bachelor's degree in Environmental Science from the University of Minnesota.



Mullen's most recent work experiences prepared her to step into the position with an exceptional knowledge of the arboretum and its interns and volunteers. In 2002, she came to the arboretum as the year-long National Herb Garden intern. Even though her recently earned degree in political science wasn't a perfect match for the requirements of the internship, during college she had gained hands-on experience as a gardener on a variety of small organic farms in Massachusetts, Ohio, and Ireland. Following her internship at the arboretum, Mullen worked in private gardens until 2004 when she returned to the arboretum as a full-time gardener. During her jobs at the arboretum, she worked closely with volunteers, gaining first-hand knowledge of their value to the arboretum. Mullen will be developing new training opportunities for the volunteers and will work with staff to expand opportunities for internships.



## New Volunteer and Internship Coordinator Appointed

Hannah Mullen has joined the Education and Visitor Services Unit as the new Volunteer and Internship Coordinator. The position combines these two important programs under one coordinator for the first time.

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