In large format botanical drawings, many depicting specimens from the Arnold Arboretum’s living collection, Esther Heins combined her talent for drawing with a passion for flowers. Heins developed her own technique of painting life-size watercolors by applying paint in thick layers, creating a three-dimensional effect. In the foreword to Judith Leet’s book, *Flowering Trees and Shrubs: Botanical Illustrations of Esther Heins*, Arboretum director emeritus Peter Ashton marvels at her ability to create works of both meticulous accuracy and great artistic beauty: “An insect-chewed leaf, or one discolored by a fungus blight, is painted just the way it looks . . . in her hands the spent fruit pods of *Paulownia* become as exquisite as the blossom of the saucer magnolia . . . through the eyes of Esther Heins, the intrinsic beauty of all plants becomes apparent.”

One of the great women botanical artists, Esther Heins lived in the Boston area almost all of her 99 years. With formal training in the arts, she worked freelance as a commercial artist for Boston department stores, and spent her free time painting landscapes and still lives. She created a series of illustrations of notable plants in the Arnold Arboretum collection, which resulted in the book. Her work has been featured in international and traveling exhibitions, and as cover and calendar art. Her paintings are in the permanent collections of the Museum of Fine Arts, Boston, the Hunt Institute for Botanical Art in Pittsburgh, the Arnold Arboretum, and many private collections.

The lecture hall is often used for meetings and classes. Please call 617.384.5209 for exhibition availability. See page 33 for Visitor Center hours.
From the Director

Under the leadership of Deputy Director Richard Schulhof, the Arboretum has initiated fundamental changes in our approach to the management of our landscape and collection of woody plants. Last year, Richard and his staff captured the scope of this initiative in the Landscape Management Plan; an excerpt of the document is available on our website. These changes include a new, zonal approach to the care of the landscape, the appointment of a curator of woody plants to provide deeper analysis and evaluation for the development of our collections, and a commitment to broader monitoring of the environment to inform decisions about the care of individual specimens.

Related to this commitment is the appointment of Julie Coop as manager of plant health, a position dedicated to tracking and treating the overall well-being of the 15,000 trees and shrubs under the care of the Arboretum. This issue of Silva includes an interview with the “plant doctor” that will give you a sense of the challenges and importance of this new role for the horticultural health of our living collection.

One very current threat to this health, mentioned by Julie, is the discovery of Anoplophora glabripennis less than fifty miles away in Worcester, Massachusetts, this past summer, the first sighting in New England. More popularly known as the Asian longhorned beetle, it will never be forgotten once you’ve seen it. The larvae of this invasive species has a very broad palate for the wood of a variety of trees including maples, birches, and willows, among others. Since last summer our staff has been developing an aggressive monitoring plan to regularly scan our vulnerable species for evidence (a dime-sized hole in the woody branch or trunk) of the pest’s presence. Once discovered, the U.S. Department of Agriculture mandates the declaration of a quarantine within a mile and a half radius, and all trees subsequently discovered with the beetle need to be destroyed. We hope we will escape this terrible fate.

I think Julie’s interview will spark in you a deeper interest in our overall horticultural program at the Arboretum, as well as a longing to visit and walk among our magnificent trees and shrubs, nearly 1,000 of which are at least a century old. We care deeply about our collections and we want you to care, too.

—Robert E. Cook, Director of the Arnold Arboretum
CONSULTING WITH THE PLANT DOCTOR

An Interview with Julie Coop, Manager of Plant Health

The Arboretum’s collections contain over 5,000 species and varieties, and nearly 1,000 plants that are at least 100 years old. What are the challenges in addressing health issues for a living collection of such age and diversity?

A. There are several challenges, and one of the greatest is people-pressure. Often the oldest trees are the most admired and visited by the public. Frequent foot traffic can compact the soil, create erosion issues, or both. To remedy this, we fracture the compacted soil and inject compressed air around the tree, then apply a layer of mulch that both absorbs the weight of foot traffic and reduces further compaction. We did a lot of this work on our centenarian trees along Meadow Road this past spring.

Given our diverse collection, impacts can vary among genera and species, and effective treatment depends on a taxon-specific approach. For instance, we experienced an explosion of fungal diseases last spring and early summer due to frequent rains following the previous summer’s drought. Infestations were particularly extensive within the genus *Pinus*, but not among all species. When applying pesticides—and in this case it was a fungicide—timing is always critical, and the applications have to be made at different stages of candle growth (the development of tender new branch shoots in conifers). Since the infected pines were of different species, each with differing candle growth, I needed to be out monitoring the collection continuously.

Trees and other woody plants are subject to pressures ranging from diseases to the feeding of insects. Temperature, drought, and soil conditions are among other factors commonly impacting plant health. In 1923, founding director Charles Sprague Sargent suggested in the *Journal of the Arnold Arboretum* that the addition of a diagnostic expert to the staff would benefit the long-term health of Arboretum trees. The idea was finally realized in 2006, when the Arboretum’s benchmarking study of American arboreta proposed the need for a manager to oversee and study the array of plant health issues confronting the living collection. The Arboretum named Julie Coop as its first manager of plant health in 2007, recognizing her exceptional skills and her two decades of horticultural leadership at the Arboretum. Since her arrival in 1988, Julie has also served as a horticulturist at the Case Estates, assistant superintendent of grounds, and, beginning in 1998, superintendent and later manager of horticulture.

Q. The Arboretum’s collections contain over 5,000 species and varieties, and nearly 1,000 plants that are at least 100 years old. What are the challenges in addressing health issues for a living collection of such age and diversity?

A. There are several challenges, and one of the greatest is people-pressure. Often the oldest trees are the most admired and visited by the public. Frequent foot traffic can compact the soil, create erosion issues, or both. To remedy this, we fracture the compacted soil and inject compressed air around the tree, then apply a layer of mulch that both absorbs the weight of foot traffic and reduces further compaction. We did a lot of this work on our centenarian trees along Meadow Road this past spring.

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Q. IPM (integrated pest management) offers basic tools as well as a philosophy of approach. What aspects of IPM have you found most helpful in your work at the Arboretum?

A. The most valuable attributes are record keeping and evaluation. It is one thing to properly identify the pest, but recording and evaluating the application can greatly improve future results. Part of an IPM program is establishing a pest tolerance level, also known as a threshold, which determines when action should be taken. The threshold might be quite different at the Arboretum than at a commercial nursery. While a nursery has to sell its plants, the Arboretum strives to limit its use of toxic control substances that can affect plant and environmental health. Therefore, as a steward of the landscape’s ecological health as well as the living collection, the Arboretum can maintain a threshold that is probably a lot higher than others; for example, we tolerate powdery mildew on our lilacs. I have come to learn that there is a certain amount of pest injury that is acceptable, so I am continually asking myself: “Will this pest kill or harm the tree, or will it just affect its aesthetics?”

Q. With the increasing introduction of exotic organisms from around the world, what do you see as some of the challenges we have yet to face?

A. Well, the discovery of the Asian longhorned beetle (ALB; Anoplophora glabripennis) in Worcester this past summer has occasioned our greatest and most immediate challenge yet. This introduced insect kills a wide variety of hardwoods including but not limited to maples, horse chestnuts, willows, birches, and elms, and has the potential to do extensive damage not only to the Arboretum’s collection but to New England’s forests and economy. Unfortunately, we don’t have pheromone traps for this pest available to us, so monitoring must be done in the field. It involves looking into the canopy of each tree for the typical signs of infestation. We haven’t found ALB at the Arboretum, but if it is in our collections, the sooner that this beetle is detected the better the chances are for eradication. We are trying to be very proactive.

The emerald ash borer (Agrilus planipennis) is another insect pest that has the potential to do much damage. As with other wood-boring pests, they are difficult to detect until it is almost too late to control them. Fortunately for us, science has created lure traps to help with monitoring and early detection.

Q. With over 15,000 accessioned plants across 265 acres, managing plant health has to be a collaborative enterprise. Which members of the horticulture team figure most prominently in assisting your efforts?

A. First and foremost I rely on the Arboretum’s staff of horticultural technologists. They are out in the collections every day, and are assigned to oversee site conditions and plant care in the 62 zones mapped out by the Landscape Management Plan. This has made my job much easier. Now the horticulturists are working with the same plants continuously, becoming very familiar with individual collections and specimens. They are typically the first to notice if there are issues with any of the plants, and they report those issues to me.

I also rely on the arborists. Though they aren’t assigned to zones, they do cycle through the collections on a regular basis. Since much of their work puts them in the canopy of a tree they are able to see things that others cannot from the ground, and that’s very helpful. I also rely on assistance from the curation staff. While they are out doing field checks or collecting GPS points for mapping, they too are looking at the condition of accessions and will notify me if necessary.

Q. For the amateur horticulturist, what information resources are available for enhancing plant health and applying IPM practices?

A. The University of Massachusetts Extension Service is a great resource. They offer many services, both to the home gardener and the horticultural or arboreal professional. Their website [www.umassgreeninfo.org/resources/gardener_info.html] includes fact sheets on pests and diseases, a weed herbarium with images, recommendations for plant culture and maintenance techniques, IPM tools, educational opportunities, and links to further resources. For a small fee they perform soil tests and make...
recommendations based on the results. The Arboretum’s Plant Information hotline (617.384.5235) is another good resource, particularly for questions regarding woody plants.

Q. As someone who has treated so many “patients,” what is the most basic advice you can offer to the home gardener for growing healthy plants?

A. To start with, I would advise gardeners to use the right plant in the right place, and to make sure to plant a tree or shrub at the right soil depth. Gardeners need to fully understand the moisture, soil, and exposure conditions of the site and carefully consider options to choose the best-adapted plant. Any newly transplanted tree has likely suffered from root loss in the transplanting process and will need to grow additional roots, but it will have a hard time doing so if planted too deeply or in compacted, low-oxygen soil.

Next, I would recommend using mulch in the garden to reduce water usage and to suppress weed growth. With both mulch and water, gardeners need to take care not to use too much or too little. As for weeds, you should at least prevent them from flowering and producing seed to curb invasion. Finally, before adding any soil amendments to your lawn or garden, do a soil test through your local extension service. Depending on pH, texture, and other soil conditions, you may find that amendments are unnecessary or that the wrong ones have been applied.

During the winter of 1934-35, Hugh Raup, a staff scientist at the Arboretum, conducted a study to document variations in temperature across the Arboretum landscape. Each morning, he walked to eight locations on the grounds, gauging temperatures with a minimum/maximum thermometer and recording the results. His study confirmed the existence of several microclimates at the Arboretum, including the area now called the Explorers Garden on the southern slope of Bussey Hill which has long been used to test plants of questionable hardiness.

An expanded and technologically enhanced version of Raup’s study commenced last winter as part of an effort to improve environmental monitoring of the collections. Data logging units, set to take measurements at 15-minute intervals, were installed in trees in eighteen locations to measure temperature and relative humidity. Some of the "stations" identified for study are nearly the same as those that Raup visited in his investigations almost 75 years ago, while others were added to provide additional comparisons. The data collected will help staff create a hardness zone map of the grounds to inform planting decisions and help assess environmental pressures on collections.

Tracking Weather Conditions Across the Landscape

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PLANT RE-EXPLORATION
Tracking the Arboretum's Collections for Plant Conservation

Abby Hird, Putnam Fellow

Growing up on a Nebraska farm, I always felt drawn to the natural world. My horticulture degree from the University of Nebraska-Lincoln gave me opportunities to participate in several internships at botanical institutions in the U.S. and Russia, where major components of my work focused on plant conservation. These experiences underscored the purpose and value of public gardens and plant collections in preserving a natural heritage, and led me to focus my Master’s studies in public horticulture at the University of Delaware and Longwood Gardens. So it was exciting to be awarded a Putnam Fellowship last fall to come to Boston and assist in plant conservation efforts at the Arnold Arboretum.

Plant conservation has always been a central priority for the Arnold Arboretum, as worldwide plant explorations have supplied several important collections of rare plants. The Arnold Arboretum has more than 15,000 accessioned plants, approximately a third of which are of documented wild origin, a valuable quality when aiming for genetically viable reintroduction efforts. Also, six percent of plants in the living collection are currently ranked as threatened in their natural habitats. Some of these species, like the dawn redwood (Metasequoia glyptostroboides), were first distributed in this country by the Arnold Arboretum. Others like the Franklin tree, Franklinia alatamaha, are now extinct in the wild and exist only in botanical collections. Additionally, the Arboretum supports national conservation initiatives such as the North American Plant Collections Consortium (NAPCC) through the American Public Gardens Association (APGA), and maintains conservation collections for the Center for Plant Conservation. Each of these programs sponsors selected genera or species to ensure proper curation, documentation, acquisition, and distribution of germplasm.

In light of these efforts, my aim is to re-explore Arboretum plant collections and formally identify, document, and analyze threatened species. The bulk of my project involves adding threatened species information to the Arboretum’s plant records database and identifying the plants that require curatorial and horticultural attention. This overall analysis through a conservation-based “lens” will help us determine priorities for documentation of our living specimens, assess which plants should be repropagated or rejuvenated, and create acquisition targets for adding new germplasm to the collection. For example, if a plant species listed on the U.S. Endangered Species List is accessioned at the Arboretum, the data I am incorporating will help staff identify those plants, determine when they were last field-checked, and highlight curatorial priorities and paths for future research.

Gathering this information is significant to Arboretum staff, but it is also valuable for other public garden professionals, scientists, and the general public. To spread continued
the word, we’ve added conservation information to our website [www.arboretum.harvard.edu/plants/conservation.html]. Additionally, published articles and presentations at the 2009 American Public Gardens Association annual conference will communicate the priorities for threatened plants at the Arnold Arboretum, identify other research programs that could use Arboretum germplasm, and offer guidance to other gardens in adopting similar approaches.

continued from previous page

Arboretum Inaugurates New Fall Foliage Festival

A beautiful autumn day and a landscape ablaze with color bedazzled the hundreds of visitors who turned out on October 26, 2008, for the Arboretum’s very first Fall Foliage Festival. In addition to showcasing the Arboretum’s autumnal colors, the event featured activities and crafts for families, music, hayrides through the Arboretum, and demonstrations of environmentally friendly fall gardening techniques and resources. Slow Food Boston sold cider and a variety of heirloom apples, giving visitors the opportunity to sample a few of the more than one hundred varieties exhibited at the festival by pomologist John Bunker. Above, visitors learn how arborists at the Arboretum safely climb trees from arborist Bob Ervin.

Join Abby for a tour exploring threatened plants in the living collection. Find out how these plants got to the Arboretum and how they are being used to advance conservation efforts today.

Plant Re-exploration THU, APR 22; SEE PAGE 16

Plant Collecting Close To Home

While the Arboretum has a long history of seeking exotic plants in remote locations overseas, the value of obtaining wild-collected specimens for the living collection also extends to our own native species. In October 2008, the Arboretum and Mount Auburn Cemetery participated in a joint collecting expedition to the Adirondack Mountain region of upstate New York. During the week-long trip, staff from the institutions made 66 collections of germplasm (including seeds, cuttings, and plants) and voucher specimens for the herbarium. Among the collected material, highlights are accessions of Viburnum lantanoides (hobblebush), Cornus alternifolia (alternate-leaf dogwood), and Taxus canadensis (Canadian yew). Below, curator Michael Dosmann and manager of horticulture Steve Schneider examine seedlings of Carya ovata (shagbark hickory) from Tongue Mountain above Lake George.
NEW PLANTS TO CLASSROOMS

Science Education at Agassiz Elementary

Nancy Sableski, Manager of Children’s Education
Richard Schulhof, Deputy Director

Great moments of learning can arise by chance but occur far more frequently with the proper ingredients provided. During 20 years of field studies at the Arnold Arboretum, we have developed a not-so-surprising recipe for experiences of discovery: dedicated teachers, hands-on access to living plants, and, most importantly, children who are given time and encouragement to carefully observe, record, and think. Bringing all these factors together has brought great gains in science learning for students visiting the Arboretum landscape. Now, we are delighted to be working closely with the neighborhood Agassiz Elementary School in applying this same approach to enhance science education in Boston classrooms.

Collaboration with Agassiz, located on South Street in Jamaica Plain, began in 2004 when we first developed the Hemlock Hill field study program for Boston fifth grade classrooms. Eager to enhance science education, Agassiz quickly became a frequent participant and important partner in further developing the program. With the encouragement of teachers, Arboretum educators began visiting classrooms before and after field trips. The more we worked with the classrooms through the Hemlock Hill program, the more we saw that bringing plants and Arboretum expertise into schools could be a tremendous help to students and teachers alike. The educational value of these pre- and post-sessions was striking, and clearly pointed toward increased classroom participation as a critical next step for any new Arboretum school program.

Science instruction in Boston public elementary schools relies on the use of kits, which provide carefully designed and tested curriculum and materials for hands-on investigation. Agassiz faculty and Arboretum staff are now teaching the second grade kit New Plants, developed by the University of California. New Plants relates strongly to the Arboretum’s mission with an emphasis on plant reproduction and life cycles that enables students to handle and cultivate plants (seeds, soil, bulbs, cuttings), as well as observe and record growth and change over time. The kit also offers a strong opportunity to incorporate the language arts. In Boston schools, where many children are learning English as a second language, science activities can provide an exceptional opportunity to acquire English vocabulary, particularly if focused on areas of study that are naturally appealing and engaging to students. In this regard, plants are an ideal focus.

Preparation to teach with the kits began in August 2008, when the Arboretum invited the Agassiz second grade teachers to a New Plants workshop. In January 2009, Arboretum educators entered the classes and, with Agassiz teachers, began team-teaching about plant life cycles. With seeds sown over the winter in second grade classrooms, the Arboretum and Agassiz look forward to deeper cultivation of this new relationship in the seasons to come.

As part of the New Plants program at Agassiz Elementary School this winter, students monitored the growth of field mustard seedlings (Brassica rapa) cultivated in the classroom. Above, Nancy Sableski shows pupils one of the seedlings in flower.
In 1922, the Arboretum’s first director, Charles Sprague Sargent, arranged Harvard’s purchase of land to the north of Peters Hill from Ralph B. Williams, whose family had owned the property since 1863. Referred to variously over the years as Puddingstone Hill, Prouty’s Hill, the Weld-Walter tract, and more recently Weld Hill, the site will soon be home to the Arboretum’s new research and administration building. In keeping with Frederick Law Olmsted’s vision for the Arboretum, the landscaping around this new facility and throughout the parcel will be designed to preserve the site’s wooded character, minimize visual impact of the facility itself, and improve access for Arboretum staff and members of the community.

When completed this fall, the footprint of the building, road, and parking infrastructure will occupy less than a quarter of the fourteen-acre site. In planning construction of the building and access routes, careful consideration has been given to the preservation of significant trees. These include massed groupings of Carolina hemlock (Tsuga caroliniana) and Japanese larch (Larix kaemferi), and a large stand of naturally established oaks.

The historic Arboretum landscape has many aspects that are treasured by the public, including open hilltops, grassy meadows, perimeter stone walls, prominent entries, mature specimen trees, and curvilinear paths and roads that mimic the rolling topography. Many of these elements already exist in the Weld Hill landscape, and design plans capitalize on these features. Special care will be taken in maintaining the parcel’s pathways, walls, and entries in a manner that is appropriate to the surrounding historical context.

The Arboretum will create landscape improvements on Weld Hill consistent with the high standards of care and maintenance currently exhibited in the Arboretum’s historic landscape. New maintenance zones will be created within the parcel to monitor plants and soil as part of the Arboretum’s Landscape Management Plan. Existing pedestrian pathways will be maintained and new paths will be created to provide additional opportunities for the surrounding community, while crossing the landscape, to enjoy strolling beneath the mature oaks and maples clustered on the site’s north-facing slope.

The overriding goal is to render Weld Hill consistent with the rest of the Arboretum, and as such, further the research mission of the institution while enhancing the landscape and collections enjoyed by the public. A small overlook near the top of the hill will provide an attractive prospect across the parcel and the surrounding neighborhood. New entrances will increase access to the site, and character-defining features introduced over time will help shape this landscape as a worthy complement to the legacy of Sargent and Olmsted.
Adult education at the Arnold Arboretum is a community resource for the study of horticulture, botany, and garden arts.
**Horticulture**

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Focused Studies

**Adult Education** at the Arnold Arboretum is centered on our collections of temperate woody plants. We offer core classes in plant identification, horticultural methods, and propagation. We recommend that all students complete an introductory botany class as a preliminary step. The **Landscape Institute** of the Arnold Arboretum provides professional education in landscape design, history, and preservation. A practical, interdisciplinary approach allows people interested in the landscape to increase their knowledge and build their skills to achieve their personal and business goals. See pages 12 and 13 for a selection of spring and summer semester courses, or visit the Institute’s website at www.landscape.arboretum.harvard.edu to view a full list of courses, workshops, and events. Note that not all classes are offered every semester, or even every year. However, we are always developing new ones.

**Temperate Woody Plant Identification (Spring/Summer 2009)**
The ability to identify a wide variety of hardy woody plants is essential for understanding the floral and horticultural environment of New England. The classes below provide a foundation for this skill.

- **HOR 121** Greening with Native Trees and Shrubs
- **HOR 138** Aunt Rhodie’s Relatives: Ericaceous Plants for the Home Garden
- **HOR 407** Lilac Comprehensive
- **HOR 107** Native Woody Plant Materials
- **LI 655A** Plant Identification in New England (Landscape Institute)
- **HOR 103** Identifying the 25 Most Common Trees in Boston
- **HOR 125** Vines for the Garden
- **HOR 152** Species Roses: Care and Culture
- **LI 634A/636A** Field Botany of New England (Landscape Institute)
- **HOR 144** What Is That Shrub? Why Should I Care?

**Horticultural Methods for Woody Plants**
Proper care of woody plants is important to their overall health. These classes teach techniques for woody plant care.

- **HOR 195** Planting and Transplanting: Demonstrated Techniques for Trees and Shrubs
- **BOT 235** Understanding and Growing Ericaceous Plants
- **HOR 416** Your Garden as Habitat
- **HOR 155** Home Orchard Basics
- **HOR 311** Organic Apple Insights
- **HOR 328** Woody Plant Health Care: Identifying Insect Pests, Plant Diseases, and Stresses
- **WAL 108** Oh Nuts! A Tour of the Arboretum’s Nut Collection

**Woody Plant Propagation (Year-long Cycle)**
The elements of propagation—from taking cuttings and germinating seeds to hardening off, potting, and planting out—are covered in the classes listed below.

- **HOR 336** Growing Plants from Seeds (Spring)
- **HOR 303** Propagation 1: Hardwood Cuttings and Seeds (Fall)
- **HOR 305** Propagation 2: Grafting of Ornamental Trees (Winter)
- **HOR 307** Propagation 3: Layering and Softwood Cuttings (Summer—offered occasionally)
- **HOR 320** Advanced Propagation: Choice & Challenging Plants (Summer—offered occasionally)
- **HOR 316** Budding Workshop (Summer—offered occasionally)
Field Botany of New England
Richard Churchill
This course will use the out-of-doors as a classroom, giving the student an opportunity to participate in a field botany experience. Class activities emphasize skills of value to the landscape designer. The common plants of the region, the growth and development of plants, the distribution of plant communities, and the role that plants have played in the traditions, economy, and landscape of New England form the basis for the course.
288A Thu April 2–May 14, 1:30–3:30pm
2 Credits; Tuition: $495 (Audit Price: $325)

Designing Your Portfolio
Will Trimble
This workshop is designed to support students in the preparation of their portfolios for archiving and interviews. It will cover general topics in design communication including model photography, drawing, reproduction, and digital image adjustment. Portfolio layout and graphics will also be discussed.
824A Thu April 2–April 30, 6:30–8:30pm
Non-credit Course; Tuition: $235

Modern Landscape Design in New England
Eleanor M. McPeck
Architectural principles, as defined in The International Style Since 1922 (1933), had significant relevance for landscape architecture at a pivotal moment in time. Essential points emphasized function, absence of ornament, and a flexible approach to space. Most importantly, house and garden were to be designed as an integrated whole. This module will examine these principles through the work of Walter Gropius, Marcel Breuer, Dan Kiley, and other designers.
278A Wed April 1–May 13, 1:30–3:30pm
2 Credits; Tuition: $495 (Audit Price: $325)

Psychology of Landscape Design: Exploring Human Emotions in the Landscape
Susan Pashman
Recent research into perceptual psychology indicates that our responses to landscape have been determined by the way our species evolved over time. Examine how landscape speaks to our eyes and brains, and to our entire nervous systems in ways that are shared by all members of the human race.
711A Tue March 31–May 12, 2:00–4:00pm
2 Credits; Tuition: $495 (Audit Price: $325)

Techniques for Drawing
Clare Walker Leslie
Classes focus on methods for using pencil, pen and ink, colored pencil, and watercolor pencil. Techniques for drawing plant specimens and groupings in a landscape, composition, perspective, walls, paths, water, buildings, and people in a garden setting will be practiced.
526A, Mon March 30–May 11, 1:30–4:30pm
2 Credits; Tuition: $495 (Audit Price: $325)

Beginning AutoCAD for Landscape Designers
Paul Van Broekhoven
This course is for students interested in advancing their existing drafting skills through the use of computer-aided drafting (CAD), a design industry standard for producing construction documents.
523A Tue July 14–August 25, 1:30–4:30pm
2 Credits; Tuition: $695

Botanic Gardens and Arboreta
Walter Punch
This module will examine the history and contributions of botanic gardens and arboretums around the world in the modern era, beginning with the Italian Renaissance and proceeding to present-day initiatives. We will look at the scientific, cultural, aesthetic, and ecological purposes of these institutions.
286A Tue June 2–July 14, 5:30–7:30pm
2 Credits; Tuition: $495

The Culture and Art of Chinese Gardens: Imperial and Public Gardens
Yo Yi Chen
This module explores historical imperial landscapes and their conversion into modern public parks and public spaces. By reviewing Chinese geography and history and analyzing specific cases, students learn the concepts and philosophies that have guided Chinese landscape practice for thousands of years.
287A Wed July 15–August 26, 5:30–7:30pm
2 Credits; Tuition: $495
Estate Management Practicum: The Evolution of an Historic Estate Garden to a Modern Day Nonprofit Institution

Richard Schulhof, Erica Max, Alice Ingerson, Jack Alexander, Paul Rogers, Marty Mitchner, Carly Rocklen

This week-long intensive workshop offers students the opportunity to address the many challenges presented by a client with a large historic estate. The Mary (Polly) M. B. Wakefield estate, possessing an abundance of valuable plant material in need of substantial stabilization and rehabilitation, will serve as the case study. The curriculum will bring together the expertise of top faculty from the Landscape Institute, staff of the Arnold Arboretum, and local experts.

822A Mon-Fri June 8–June 12, 9:30am–3:45pm
Non-credit Course; Tuition: $485

Landscape Construction for Walks, Walls, and Steps

Michael Veracka

Study construction materials and methods for walks, walls, steps, and patios in residential landscapes. Students will learn about landscape materials and their relationship to the construction process and building techniques.

423A Thu June 4–July 16, 5:30–8:30pm
2 Credits; Tuition: $495

Measured Perspective Drawing and Sketching

Patricia Bales Van Buskirk

A perspective drawing describes a three-dimensional view in two dimensions by using lines that converge as they recede from the viewer. It can depict the way a garden or landscape design might actually appear to the spectator. This studio focuses on drawing perspectives and, once this is mastered, learning to sketch them—both as a design tool and as a way to communicate landscape designs.

522A Summer, Tue & Thu
July 21–August 11, 1:00–4:00pm
2 Credits; Tuition: $495

Plant Identification in New England

Marty Mitchener

This course will cover native, introduced, and cultivated plant species common to the Northeast, many of which are suitable for garden use. Through an emphasis on family characteristics, students will explore issues of sustainable landscaping and maintenance. Weeds and invasive plants, ecological communities, wildlife attractiveness, and adaptive plant reproductive strategies will also be discussed.

655A, Wed June 3–August 26, 9:30am–12:30pm
4 Credits; Tuition: $980

Proper Pruning Practices in the Planted Landscape

Charles Sherzi, Jr.

Pruning is one of the most misunderstood and poorly executed of cultural practices in the landscape today. More of our beautiful woody ornamentals are destroyed each year by poor pruning practices than by insects and diseases combined. This workshop will address the how, what, when, where, and why of pruning in the planted landscape.

825A Sat July 11–July 18, 9:00am–3:30pm
Non-credit Course; Tuition: $220

Sustainable Home and Landscape: A Field Study Exploring Art, Technology, and the Environment

Marie Stella

Come to Ashfield, Massachusetts, for a three-day intensive module exploring Beaver Lodge, a residence designed by Marie Stella to be LEED certified. This hands-on laboratory setting will offer coursework in the promotion of sustainability, innovative use of native plant materials, construction of rain gardens, green roofs and vegetated walls, rainwater harvesting, use of local materials, and organic vegetable gardening.

716A Thu-Sun July 13–August 13; see website for class schedule
2 Credits; Tuition: $495

Therapeutic Landscapes

Robert C. Hoover

This workshop will examine the history and design of therapeutic landscapes, the practice of landscape architecture and its role in our lives, and the role of therapeutic gardens for the treatment of illness. The workshop includes:

821-1A Jun 11 Why therapeutic landscapes?
821-2A Jun 25 What is a therapeutic garden for Alzheimer’s disease?
821-3A Jul 9 Therapeutic Landscape Case Studies
821A Thu June 11–July 9, 5:30–7:30pm
Non-credit Course; Tuition: $100 or $40 per session

Visit www.landscape.arboretum.harvard.edu to view full course offerings and details. The Landscape Institute is located at 30 Chauncy Street, Cambridge, MA.
April

Planting and Transplanting: Demonstrated Techniques for Trees and Shrubs

John DelRosso, Head Arborist, Arnold Arboretum
1 Session
Sat Apr 4 9:00am–1:00pm [DG]

Setting out young trees and shrubs is a major spring gardening task. Learn planting and transplanting techniques that will give a new tree or shrub the best chance of survival. John DelRosso will cover planting-hole preparation, settling the plant in, finishing touches, and maintenance. After the lecture, he will demonstrate these techniques in the Arboretum’s nursery. Dress for the outdoors.

Fee $20 member, $25 nonmember

Introduction to Botanical Drawing and Painting: Woody Plants

Ruth Ann Wetherby-Frattasio, Botanical Artist and Art Instructor
4 Sessions
Mon Apr 6, 13, 20, 27 1:00–4:00pm [HB]

Artist Ruth Ann Wetherby-Frattasio will teach techniques for depicting the finer details of trees and shrubs—budding boughs, newly unfurled leaves, and blossoming twigs. Participants will learn to see like an artist and will practice drawing in an encouraging atmosphere. A simple drawing method will be demonstrated followed by instruction in painting techniques, including color mixing. Beginners will start with a technique for placing an image on paper. Continuing students will develop their skills further. During this class, botanical works by artist Esther Heins will be on display in the lecture hall, providing inspiration. Email adulted@arnarb.harvard.edu to request a list of supplies you will need for this class.

Fee $130 member, $155 nonmember

Offered in collaboration with Wellesley College Friends of Horticulture

Do Manutenção de Jardins em Português (Landscape Maintenance in Portuguese)

Luiz Ibanhez, Supervisor de Manutenção, NatureWorks Landscape Services, Inc.
1 Session
Terça-feira, 7 abril, 9:00h da manhã às 3:00h da tarde [HB]

Melhore sua compreensão de horticultura e aumente suas habilidades de trabalho. Esta aula de um dia introduzirá os fundamentos da manutenção de jardins. Luiz Ibanhez, orador em Português nativo que trabalha na área há 8 anos, discutirá o seguinte:

- Prática de Manutenção
- Fertilidade do Solo
- Crescimento e Saúde das Plantas
- Técnicas de Poda e Plantio
- Avaliação de Planta
- Equipamento de Segurança

A aula será dada em Português e acontecerá em lugar fechado e aberto, ambos nas dependências do Arnold Arboretum. Serão dados Certificados de Participação aos participantes presentes. A taxa inclui café da manhã e materiais do programa. Os estudantes deverão trazer almoço.

Pegue a Linha Laranja para Forest Hills siga as placas para o Arboretum.

Taxa $60

50 Favorite Plants with Tracy Disabato-Aust

Tracy Disabato-Aust
1 Session
Thu April 2 7:00–8:30pm (Newton South High School)

Tracy Disabato-Aust has taught thousands of readers how to design and maintain their gardens. Her first book, *The Well-Tended Perennial Garden*, is widely considered the “bible” for perennial maintenance. Now with *50 Favorite Plants for High-Impact Gardens*, Tracy presents 50 show-stopping plants that are easy to grow. Each has passed Tracy’s test for toughness, beauty, and durability, chosen after years of studying how to make beautiful outdoor spaces with a minimum of maintenance. Don’t miss hearing Tracy’s gardening advice, delivered with high energy and humor.

Tracy is an accomplished gardener and presenter. With keen perception she captures in her writing not only the physical characteristics of plants, but also the emotions evoked by plants—through scent, color, and associations. Tracy’s books will be available for purchase and signing.

Fee $20 member, $25 nonmember
Bill Cullina showcases all of the eastern species from *Arctostaphylos* to *Zenobia*, detailing their ecology, form, cultivation, and landscape uses. The day concludes with a tour of Garden in the Woods' outstanding collection. Includes morning coffee, snacks, and lunch.

Fee: $85 member, $105 nonmember
Offered in collaboration with the New England Wild Flower Society

### Greening with Native Trees and Shrubs

**Nancy Rose, Editor, Arnoldia, Arnold Arboretum**

1 Session

Thu Apr 16 6:30–8:30pm [HB]

Native vs. non-native is a hot topic in horticultural circles. There are plenty of good reasons to choose native plants: they’re essential to the lifecycle of native birds, insects, and other animals; they’re adapted to the regional climate; and many are also highly ornamental. But the issue isn’t really as simple as that. For starters, how do we even define “native”? And are native plants really the best choice in landscapes that have been so completely human-altered that there’s nothing “native” about them? Though horticulturist Nancy Rose can’t resolve all the questions, she will identify some of the arguments and reasons for “going native” and then suggest appropriate trees and shrubs. She will speak about plant characteristics, cultural requirements, and site conditions that should be considered in the selection—including examples of situations where a native plant isn’t necessarily the best choice.

Fee $20 member, $25 nonmember

### Understanding and Growing Ericaceous Plants

**Bill Cullina, Author, Plant and Garden Curator, Coastal Maine Botanical Gardens**

1 Session

Fri Apr 17 10:00am–4:00pm [NEWFS]

Almost every landscape in southern New England contains at least a few rhododendrons, laurels, or azaleas. With acidic, forested soils and a moderate, moist climate, our region is well suited for many members of the heath family (Ericaceae), and we have one of the most diverse assemblages of species anywhere in North America. In this in-depth seminar, Marc Devokaitis will talk about her gardening adaptations in the city environment. She will guide you through site evaluation, plant selection, and common problems and possible solutions in raising home-grown food. She’ll also talk about community resources, ideas for maximizing yield from a small plot, as well as ways to grow food more sustainably.

Fee $60 member, $72 nonmember
Plant Re-exploration  

Abby Hird, Putnam Fellow, Arnold Arboretum  
1 Session  
Wed Apr 22 10:30 am–noon [HB]  
The Arboretum grows nearly 3,500 plants collected from wild places worldwide. Today, many plants in once wild places are extinct, endangered, or severely threatened by habitat change, human impact, and over-harvesting. The wild-origin plants at the Arboretum, some collected on plant expeditions, are now extremely important for conservation and restoration efforts. Take a walk to re-explore threatened plants inside our garden walls, and find out how these plants got to the Arboretum and how they are being used to further conservation efforts now. Free. Advance registration requested.

Trees Inspire  

Robbie Apfel and Bart Kelso, Arboretum Docents  
1 Session (select one)  
Sun Apr 26 3:00pm [HB]  
Sun Jun 21 3:00pm [HB]  
Trees have always inspired human beings, and people, in turn, have attributed special meaning and significance to trees. See some of these trees (or their close relatives) during this special walk. You will visit trees mentioned in the Bible, Native American tradition, and southeast Asian sacred practices. You will also visit specimen trees that have been especially inspirational to Arboretum visitors because of their remarkable size or shape, majestic beauty, or the way they awaken in us a sense of reverence and awe. Free. Advance registration requested.

Garden Tools: Care and Sharpening  

Kit Ganshaw, Horticultural Technologist and Sue Pfeiffer, Curatorial Fellow  
1 Session  
Thu Apr 30 6:00–8:00pm [HB]  
Selecting the right hand tools for garden use can mean the difference between pleasure and drudgery, even injury. When should you use secateurs rather than loppers or shears? Which kind of hand-saw is best for your purposes? How do you keep tools clean and sharp? In this demonstration and discussion, Kit and Sue will share their opinions of their favorite tools and help match the tool to the task and the person. This is a chance to get answers to your specific tool questions. The session will include a sharpening workshop. Bring your hand pruners and other tools. Registrants must sign an Assumption of Risk and Release to participate in this class. Fee: $20 member, $25 nonmember.

Gardens and Spirituality  

Julie Moir Messervy  
1 Session  
Sat Apr 18 2:00–3:30pm [TC]  
Julie Moir Messervy’s vision for composing gardens of beauty and meaning is changing the way people think about and experience their outdoor surroundings. She has emerged as a leader of a movement in which landscape design is as much about a personal journey as it is about leaving an imprint upon the earth. She has inspired a new generation of landscape designers, homeowners, and others to create gardens that reflect an inward vision deeply rooted in outdoor archetypes, childhood imagination, and aesthetic impulses. In this lecture at Boston’s Trinity Church, Julie will show gardens that engender spirituality and reveal how spirituality can inform garden design. Her forthcoming book, Home Outside: Creating the Landscapes You Love, will be available for purchase and signing. Fee $20 member, $25 nonmember.

Co-sponsored by the Arnold Arboretum of Harvard University and Trinity Church.
May

Pollination Ecology Workshop

Judith Sumner, Botanist and Author
1 Session
Sun May 3 10:00am–4:00pm [NEWFS]
Floral forms relate to their function in pollen transfer. In this workshop with botanist Judith Sumner, you will learn about the “syndromes” of insect, animal, water, and wind pollinated flowers as you observe trends in floral evolution, advertisements, and bribes associated with pollination ecology. Garden in the Woods will serve as a living laboratory and the class will conclude with a viewing of the remarkable movie, *The Birds and the Bees*, by Sir David Attenborough.
Fee $66 member, $78 nonmember
Offered in collaboration with the New England Wild Flower Society

Aunt Rhodie’s Relatives: Ericaceous Plants for the Home Garden

Jen Kettell, Horticultural Technologist, Arnold Arboretum
1 Session
Thu May 7 6:30–8:30pm [HB]
Rhododendrons and azaleas seem to get all the attention, but there are many other plants in the Ericaceae that merit consideration for your landscape. In fact, the acidic soils of New England are naturally suited to plants in the heath family. In this class, horticulturist Jen Kettell will introduce some of these including heath, heather, leucothoe, and mountain laurel. Some are delicate and difficult to grow, yet most are tough survivors. Jen will discuss soil preferences and the care of ericaceous plants in general. She will not, however, cover in depth the ever-expanding list of rhododendron and azalea varieties available on the market today.
Fee $20 member, $25 nonmember
Offered in collaboration with Wellesley College Friends of Horticulture

Lilac Comprehensive with Jack Alexander

Jack Alexander, Propagator and Lilac Specialist, Arnold Arboretum
1 Session
Mon May 11 5:00–7:00pm [DG]
Combining botany, lore, and personal opinions, lilac specialist Jack Alexander will present a sweeping overview of lilac care, culture, and history. You’ll learn when to prune your lilacs, how to rejuvenate them, and what their optimal growing conditions are. Jack will show examples of various growth and flower forms and point out examples of the best lilacs for fragrance, disease resistance, color, and length of flowering season as you walk in the Arboretum’s extensive lilac collection. Come with questions and a clipboard and paper for note-taking. Be prepared for rigorous walking since the Arboretum’s lilac collection is located on steep terrain. Meet at the Dana Greenhouses to walk to the lilacs with the instructor. Rain date: Wed May 13.
Fee $25 member, $30 nonmember

Native Woody Plant Materials

Bill Cullina, Plant and Garden Curator, Coastal Maine Botanical Gardens
2 Sessions
Wed May 13 10:00am–3:00pm [NEWFS] and Sun May 31 10:00am–3:00pm [HB]
A large variety of native trees, shrubs, and woody vines are now available in the trade, and many are superior choices for planting in the New England landscape. This course surveys the horticultural features

Creative Botany: Focus on Trees

Rebecca Arnoldi, Fine Artist and Environmental Educator
3 Sessions (register for 1 or all 3)
Sun May 3, 17, 24 1:30–4:00pm [HB]
Take a look at the botany and art of trees while practicing both. This class will tap your latent creative talents and your capacity for deep observation. During each session you will visit different trees in the Arnold Arboretum and use a variety of methods to integrate art-making with botanical study.
In sessions 1 and 2, you will use pencil and charcoal. In session 3 you will focus on the color of trees with watercolor as your medium. Experiment with pigment, water, tone, and light as you examine a tree’s texture, shape, and structure. All levels—and especially beginners—are welcome. No art experience or botanical knowledge is needed. List of materials will be provided upon registration. Rain date: Sun May 31.
Fee $20 member, $25 nonmember (per session); $55 member, $65 nonmember (series)
classes

Your Garden As Habitat

Kim Smith, Garden Author and Designer
4 Sessions
Tue May 5, 12, 19, 26 6:30–8:30pm [HB]

In his book, Bringing Nature Home, Doug Tallamy urges everyone to turn yards into habitats. This is exactly what Gloucester designer Kim Smith has been doing (and writing about) for years. Kim will present the necessary elements for making your garden welcoming to birds, bees, butterflies, and other wildlife. She will help you assess your existing garden to create a more life-sustaining ecosystem by providing suggestions for developing the framework, as well as offering ideas for smaller adjustments. Plants and examples of other features will be discussed based on their value to particular vertebrates and invertebrates. Bring photos and sketches of your outdoor space to class for comment and discussion. Students are invited to research a specific habitat that is of interest and make a presentation to the class. Through lectures, discussions, and supplemental reading you will gain a deeper understanding of the interconnected world that we human beings share with plants and wildlife and how to translate that information to your own garden. Kim will have copies of her book, Oh Garden of Fresh Possibilities! (David R. Godine Publisher, 2009) available for sale.

Fee $85 member, $100 nonmember
Offered in collaboration with Newton Community Education and the New England Wild Flower Society

Birding for Beginners

Bob Mayer, Arnold Arboretum Volunteer
3 Sessions
Thu May 14 7:00–8:30pm [HB]; Sun May 17 [HB] and May 31 [WSG] 7:30–9:30am

Boston is for the birds! And so is Bob Mayer. In this class for the novice, Bob will discuss choosing the right optics, field guides, and other aids and references for the beginning birder; introduce the key elements in finding and identifying birds; and review birding etiquette and behavior in the field. After becoming familiar with the fundamentals, you’ll venture into the best birding habitats in the Arboretum to practice using your equipment and search for some of the many wonderful birds that can be seen throughout the grounds.

Fee $50 member, $60 nonmember

Women of the Arboretum

Jane Phipps, Arboretum Docent
1 Session
Sat May 16 1:30pm [HB]

You may know about the great men of the Arboretum—Sargent, Olmsted, Wilson, and countless others—but have you considered the many important contributions made by women? This tour will introduce scientific work and the Arboretum spaces that have been shaped by the hands of women.

Free. Advance registration requested

More than Lilacs: A Family Hike

Nancy Sableski, Manager of Children’s Education, Arnold Arboretum
Sat May 9 10:15–11:45am [HB]

There are many plants in addition to lilacs that flower in May at the Arboretum. Discover the intricacies of dogwood, horse chestnut, and azalea blooms with Nancy Sableski. Bring water and a snack (and binoculars, if you have them); wear sneakers or hiking boots and a hat for this free guided nature walk. Appropriate for children from ages 6 to 12 with an accompanying adult.

Free. No registration required
The Carpenter Poets: Reflections on Wood and Trees

The Carpenter Poets of Jamaica Plain
1 Session
Sat May 23  6:30–8:00pm [HB]
The Carpenter Poets of Jamaica Plain meet regularly to share original poems with themes based on their trade. For this evening, the poets will read their poems about the lumber they work with and the trees from which it comes. Trees like the American chestnut, long gone from our landscapes, reveal their durability when chestnut planks are exposed during a home renovation. A carpenter selects boards at the lumber yard—feeling the grain, eyeing each plank for its quality—making a visceral and utilitarian judgment. Carpentry, requiring both physical and mental acuity, attracts creative people. Enjoy an evening of creative verse from those who have dared to put their thoughts on paper.
Free. Advance registration requested

Growing a Legacy: A Collector’s Vision

Michael Dosmann, Curator of Living Collections, Arnold Arboretum, and Erica Max, Landscape Supervisor and Educational Coordinator, Mary M.B. Wakefield Charitable Trust
1 Session
Sat May 30  10:00am–noon [HB]
When an Arboretum staff person visits an estate in the Boston area, he or she can almost instantly tell if its owners were or may still be connected to the Arboretum. The relationship is often immediately con-

An Apple-A-Day: Orchard Intensive with Michael Phillips

Organic orchardist Michael Phillips will teach about everything under the sun as concerns the apple tree. Learn about pruning, pest dynamics, soil health, varieties, and apple pleasures. The day will be divided into two parts: essential orchard basics in the morning followed by in-depth organic practices in the afternoon. Michael will end the day with a rambunctious wassail around one of the grand trees of the Arnold Arboretum.

Home Orchard Basics
1 Session
Sat May 9  9:00am–Noon [HB]
Successfully growing fruit for your family and neighborhood depends on several essential orcharding skills. What starts off sounding so “awfully complicated” can be straightforward when you narrow your scope to understanding the basics. For example, harvesting sunlight through smart pruning renews fruit buds. Fungal diseases become manageable with wise variety selections and enhanced soil biology. Even major insect challenges can be resolved safely when you consider who, what, and when. This workshop is filled with practical information for growing apples and other tree fruits.
Fee $30 member, $35 nonmember

Organic Apple Insights
1 Session
Sat May 9  1:00–4:00pm [HB]
Michael Phillips will expand on the morning’s themes in this session dedicated to organic orchard techniques. You’ll learn about building system health by embracing “tree ecology” and consider orchard compost, herbal teas, and mycorrhizal inoculum. The nutrient density—and flavor—of the apples you harvest for your family is of utmost importance. Dealing with specific pest and disease situations from a holistic perspective requires in-depth understanding of cause-and-effect. The misuse of fungicides and soluble fertilizers often adds to the susceptibility of varieties assumed to be prone to fungal infection. Just as apt, ignoring diversity and biological cycles makes insect dynamics all the more problematic without a chemical arsenal. A core paradigm of organic orcharding states that one sprays not so much to “kill” as to create health so that the system can begin to take care of itself. Growing healthy fruit requires an appreciation of subtleties that make our time on this precious planet all the more fascinating. Note: you must attend the morning session in order to participate in the afternoon session.
Fee $60 member, $70 nonmember for the day (HOR155 & HOR311)
Fee $30 member, $35 nonmember for the morning only (HOR155)
Offered in collaboration with Earthworks
firmed by the plants growing on the property. This is true for the Wakefield Estate in Milton, where Mary (Polly) Wakefield pursued her fascination with tree propagation and hybridization. On this walk, Michael Dosmann will tell the horticultural history of particular specimens growing at the Estate and Erica Max will add perspective gleaned from Polly’s notebooks as well as future plans for the property.

Fee: $20

June

Introduction to Floral Structures

Kanchi Gandhi, Botanist, Harvard University Herbaria

2 Sections of 5 sessions

Section A Tue June 2, 9, 16, 23, 30 6:30–8:30pm [HUH]
Section B Tue July 14, 21, 28, 4, 11 6:30–8:30pm [HUH]

Charles Darwin called the origin of flowering plants an "abominable mystery." The diversity found in floral structure makes it easy to understand his frustration. In this basic overview, Kanchi Gandhi will teach you to look at flowers as the complex structures that they are with slides, handouts, and dried and fresh specimens. You will learn floral characters of some of the major plant groups (families). Participants will also learn to use keys to identify plant families. Bring a hand lens if you have one. Examples of groups for the relevant sections are listed below.

A: Amaranths, Begonias, Buttercups, Carnations, Elms, Evening Primroses, Geraniums, Hollies, Legumes, Magnolias, Mallows, Maples, Mustards, Oranges, Oxalids, Poinsettias, Parsleys, Pokeweeds, Purslane, Roses, Violets, and Walnuts

B: Asters, Buddleias, Honeysuckle, Iris, Lilies, Milkweeds, Mints, Morningglories, Olives, Phlox, Potato, Snapdragons, Squashes, Orchids, and Tulips

Fee $115 member, $140 nonmember
Offered in collaboration with the New England Wild Flower Society

Woody Plant Health Care: Identifying Insect Pests, Plant Diseases, and Stresses

John DelRosso, Head Arborist, and Julie Coop, Manager of Plant Health, Arnold Arboretum

2 Sessions

Tue Jun 9 6:00–9:00pm and Sat Jun 13 9:00am–noon [HB]

During an evening lecture and a daytime walk, John DelRosso and Julie Coop will present current methods of identifying, monitoring, and managing various types of insect pests, plant diseases, and stresses that affect woody plants. The tour will highlight over twenty different examples of the common problems associated with landscape plant material.

Fee $84 member, $100 nonmember
Credit MCLP: 1ceu, MCA: 1ceu

Field Sketching

Carol Govan, Naturalist and Artist

3 Sessions

Tue Jun 9, 16, 23 9:30am–noon [WCBG]

Learn the rewarding skill of field sketching in the Wellesley College Botanic Gardens. By making sketches you will increase your understanding of trees and learn to focus on features useful in identifying plants. Your quick sketches will help you look closer and remember what you have seen.

No previous experience necessary. Bring sketchbook/notebook, #2 pencil, and hand lens.

Fee $60 member, $75 nonmember
Offered in collaboration with Wellesley College Friends of Horticulture

Hardscape Options: Materials, Function, Provenance

Gavin Johnston, New England Native Stone

1 Session

Thu Jun 11 6:30–8:30pm [HB]

Most gardeners now know they can select “green” fertilizers and use native plants for a landscape that is more sensitive to the environment. When planning a patio, path, wall, or other hardscape project there are similar options. Whether using stones that are native to New England—reclaimed and recycled—or new products designed to ameliorate storm water run-off, gardeners have many product choices. Gavin Johnston will clarify these options and share a variety of samples and hardscape project examples. Using some of the basic vocabulary needed to “talk stone,” he’ll narrow the myriad possibilities available today to products, both natural and fabricated, that blend harmoniously with a New England landscape.

Fee $18 member, $22 nonmember
Propagation 3: Techniques for Layering and Softwood Cuttings

HOR 307

Jack Alexander, Plant Propagator, Arnold Arboretum

2 Sessions

Wed Jun 10, 17  5:30–8:30pm [DG]

Learn the spring-summer techniques of woody plant propagation. This hands-on workshop will include instruction on layering and the more advanced technique of softwood cuttings. Prerequisite: Propagation 1: Hardwood Cuttings and Seeds or equivalent experience. Registrants must sign an Assumption of Risk and Release in order to practice the techniques taught in class.

Fee $70 member, $85 nonmember

The 25 Most Common Trees in Boston

HOR 103

Kyle Port, Manager of Plant Records, Arnold Arboretum

1 Session

Sun Jun 14  9:00am–1:00pm [HB]

In just a few hours you can learn to identify 90 percent of the trees growing in Boston, both native and nonnative. Beginning in the classroom, the group will briefly review the characteristics of the 25 most common trees and learn the botanical terminology necessary to describe them. Participants will then walk the grounds of the Arboretum to look at mature specimens of these trees.

Fee $45 member, $55 nonmember

Credit MCLP: 1ceu, MCA: .5ceu

Vines for the Garden

HOR 125

Jen Kettell, Horticultural Technologist, Arnold Arboretum

1 Session

Thu Jun 18  6:00–8:00pm [DG]

Effective landscape design includes creative development of vertical space, and vines should be considered from the outset. While touring the Leventritt Garden of Shrubs and Vines, horticulturist Jen Kettell will introduce you to an array of vines. She will explain their various growth habits and attachment mechanisms which determine how they are best used in the garden. Focusing on floral, foliar, and fruiting characteristics, she’ll recommend vines for a variety of situations.

Fee $20 member, $24 nonmember

In the Groves: A Summer Solstice Journey

WAL 224

Diane Edgecomb, Storyteller, and Margot Chamberlain, Celtic Harpist

1 Session (select one)

WAL 224A Fri Jun 19  6:30–8:30pm [HB]

WAL 224B Sat Jun 20  6:30–8:30pm [HB]

Transport yourself to a different time and place with this enchanting evening of tree lore and summer-solstice legends. Diane and Margot spin tales of the human connection with trees and the deep meaning assigned to them through the ages. This unique performance, designed for the Arboretum, starts at the Hunnewell Building and continues along tree-lined paths with story and music. The evening culminates with the haunting Czech legend The Wild Woman of the Birch Grove told amid the birches of Bussey Hill at sunset. Appropriate for adults and for children ten years and older. Bring a cushion to sit on if you wish. You will walk approximately two miles on and off trails. The performance takes place rain or shine. In the event of rain, it will be held in the Hunnewell Building lecture hall.

Fee $20 per person. Space is limited

Species Roses: Care and Culture

HOR 152

Kit Ganshaw, Horticultural Technologist, Arnold Arboretum

1 Session

Mon Jun 22  4:00–6:00pm [HB]

Kit Ganshaw provides daily care to the Arboretum’s seven-acre Bradley Rosaceous Collection where her most intensive work involves the species roses. During the growing season on Tuesday evenings, she also directs volunteers in the care of The Kelleher Rose Garden in the Back Bay Fens. Join Kit among the Arboretum’s species

Trees Inspire

WAL 121B

Robbie Apfel and Bart Kelso, Arboretum Docents

1 Session

Sun Jun 21  3:00pm [HB]

Significant trees and symbols of them figure prominently in virtually all the world’s religious traditions, as well as in folklore and in people’s own experience of the sacred. See some of these trees (or their close relatives) during this special walk.

Free. Advance registration requested
roses to learn pruning techniques, procedures for preventive health care, and the varying requirements of species and hybrid roses. You will also look at other rosaceous shrubs found in the garden, such as spirea, flowering quince, and cotoneaster. Meet at the Hunnewell Building to walk to the rose garden with Kit.

Fee $20 member, $25 nonmember

**Can You Dig It?**

*Chuck Sherzi, Jr., Arboretum Docent*

1 Session
Sat Jun 27  1:30 pm [HB]

Take a tour of the underground Arboretum to see and learn about tree roots, physical and chemical properties of soil, and the soil ecosystem—from mycorrhizal fungi to earthworms and other decomposers.

Free. Advance registration requested

**Design Workshop for Home Gardeners**

*Christie Dustman, Designer, APLD*

5 Sessions
Tue Jul 7, 14, 21, 28, Aug 4
6:30–8:30pm [HB]

Explore principles of garden design and develop a plan for a specific area of your yard. In this beginner-level design class, you will explore the importance of line, scale, circulation, unity, and repetition as the organizational components of a coherent garden. You’ll also consider finer details such as color, focal point, depth, layering, and connecting indoors to outdoors. Christie Dustman will use before and after examples of projects she has completed to illustrate the design process. You will be required to draw a base plan for your site and identify your wish list of features. In analyzing your own and your classmates’ base plans and needs, you will practice the process of design and then begin to apply principles to your site plan. Christie will then lead in-class reviews, soliciting solutions from students and suggesting her own. You will leave class with a plan in progress from which to continue your design exploration. This class is primarily about garden space, and, as such, will not include garden design, though some key plant elements may be discussed.

Email adulted@arnarb.harvard.edu for a list of materials and instructions on creating your base plan for the first class.

Fee $100 member, $120 nonmember

**July**

**What Is That Shrub? Why Should I Care?**

*Michael Dosmann, Curator of Living Collections, Arnold Arboretum*

1 Session
Wed Jul 15  6:00pm–8:00pm [HB]

Most people don’t pay attention to many of the plants they pass by daily; many of these commonly used plants tend not to merit a second glance. Yet Michael Dosmann thinks there’s value in getting to know these common shrubs as well as a few alternatives to the mundane. You will begin in the classroom for some identification basics and then walk to the Arboretum’s Leventritt Garden and other parts of the landscape to compare shrubs typically planted in suburban and city sites with alternatives.

Fee $20 member, $25 nonmember

**August**

**Insect Science and the Fun of Collecting and Preserving**

*Sue Pfeiffer, Curatorial Fellow, Arnold Arboretum*

1 Session
Thu Aug 6  5:30–7:30pm [HB]

Insects are all around us—knowing the difference between beneficial insects and harmful pests can tell us a lot about the health of our plants as well as the ecological balance of the environment in which they are found. Sue, who has helped collect insects to assist integrated pest management efforts as well as visiting entomologists at the Arnold Arboretum, will give a brief overview of insect anatomy, their life cycles, and describe the major insect families and their identifying characteristics. She will demonstrate various methods of attracting, capturing, and collecting insects. She’ll also show how to preserve and display some of these complex and delicate beauties. In the process you will gain an appreciation for these creatures, whether beneficial, damaging, or simply irritating. Note: this is not a class on integrated pest management.

Fee $20 member, $25 nonmember

**Arboretum on Alert**

*Julie Coop, Manager of Plant Health, Arnold Arboretum*

1 Session
Thu Aug 13  1:30pm [HB]

The Asian longhorned beetle has not been found at the Arboretum Arboretum, but staff are monitoring at-risk species and planning for the possibility of an infestation. You can help, if you know what you are looking for. Take a tour to better understand this potentially devastat-
UMass Extension Weed Identification Workshop: Broadleaf Weeds Plus a Few Grassy Weeds

Correct weed identification is an important first step in the development of an effective weed management program. Using a classroom presentation, his potted weed herbarium, and including a weed walk, UMass Extension Specialist Randy Prostak will help participants enhance their identification skills. Workshop will be held rain or shine (lunch is not provided).

Cost $95 per person (pre-registration required, space is limited).

5 pesticide contact hours available; MCLP and MCH credits will be offered.

To Register: Contact UMass Extension at (413) 545-0895, eweeks@umext.umass.edu.

Wednesday July 29 at the Arnold Arboretum

September

Propagating Trees and Shrubs from Cuttings and Seeds

Jack Alexander, Plant Propagator, Arnold Arboretum

2 Sessions

Sat Sep 26 and Oct 24 9:00am–4:00pm [DG]

Need to nurture? Then join longtime Arboretum propagator Jack Alexander to learn basic information and techniques for propagating most woody plants.

Session One includes a lecture and workshop on seed propagation and construction of a propagation case. Session Two will be a lecture and workshop on hardwood cuttings. You will leave class with numerous cuttings and seeds to care for. To participate, you must sign an Assumption of Risk and Release in order to practice the techniques taught in class. Bring a lunch and beverage. If you own hand pruners, bring them to class. A sharp knife and an apron may also be helpful.

You will be collecting propagules from the Arboretum grounds on both afternoons regardless of weather, so dress accordingly and wear comfortable shoes.

Fee $180 member, $215 nonmember

Credit MCLP: 1ceu

Introduction to Botany

K. N. Gandhi, Botanist, Harvard University Herbaria

8 Sessions

Tue Sep 22, 29, Oct 6, 13 20, 28, Nov 3, 10 6:30–8:30pm [HUH]

Learn botany from dedicated instructor and plant nomenclature specialist Kanchi Gandhi. Among the topics to be explored: plant cells and tissues, anatomy and morphology, reproduction, nutrition, growth and development, plant diversity, evolution, classification, and nomenclature. This course, offering both lecture and laboratory activities, introduces botany to new students or serves as a refresher course.

Required text: Botany for Gardeners by Brian Capon. Contact the Arboretum’s bookstore (617.384.5209) for book availability.

Fee $180 member, $215 nonmember

Credit MCLP: 1ceu; MCA: 1ceu

Offered in collaboration with the New England Wild Flower Society

"My heartfelt appreciation for your dedication and enthusiasm in teaching Botany. You made the material both fascinating and fun. You are an exceptional teacher and I hope I will have the opportunity to take a class with you again one day. Many thanks!"

—Kim Goggin
Instructors

Jack Alexander is the plant propagator of the Arnold Arboretum, a position he has held since 1976. He is a graduate of the Harvard University Extension School and a third-generation nurseryman. Jack is an active member of the International Lilac Society. He was named a Fellow of the Eastern Region of the International Plant Propagators’ Society and in 2004 he was awarded their Award of Merit.

Rebecca Arnoldi is an artist and naturalist with more than 15 years of experience making nature-based art and educating people about nature. She has an MFA in painting and an MS in environmental education. To see her work, visit www.rebeccaarnoldi.com.

Margot Chamberlain has sung and played medieval bowed strings, recorders, and the medieval harp with the early music groups Quadrivium and Live Oak and has been a regular performer with the Spring and Winter Revels. For the past fifteen years she has devoted herself to the Celtic harp.

Julie Coop began her career at the Arnold Arboretum in 1988 working at the Case Estates in Weston. She has worked as the Arboretum’s assistant superintendent and superintendent of grounds and is currently manager of plant health. She is a certified arborist with the International Society of Arboriculture and the Massachusetts Arborists Association, and is a Massachusetts certified horticulturist.

Bill Cullina is plant and garden curator at Coastal Maine Botanical Gardens. He holds degrees in plant science and psychology and has been working in plant propagation and nursery production for more than 20 years. In 1995 he became nursery manager and propagator, and most recently was director of horticultural research, at the New England Wild Flower Society’s Garden in the Woods and Nasami Farm. His books include Native Trees, Shrubs, and Vines—A Guide to Using, Growing and Propagating North American Woody Plants (2002), and most recently, Understanding Perennials.

John DelRosso has an associate’s degree in forestry from Essex Agricultural and Technical Institute and is a graduate of the Consulting Academy of the American Society of Consulting Arborists. He is a certified arborist with the International Society of Arboriculture and the Massachusetts Arborists Association. John is the head arborist at the Arnold Arboretum.

Tracy Disabato-Aust has earned international acclaim as one of America’s most entertaining and knowledgeable garden writers and professional speakers. She has worked for over 30 years in the industry, including 20 years as a designer. Her first book, The Well-Tended Perennial Garden, has become the bestselling book in Timber Press’ publishing history. She has contributed articles or been featured in numerous national and international magazines, books, and newspapers.

Michael Dosmann is the curator of living collections at the Arnold Arboretum. He holds a doctorate from Cornell University as well as a BS and MS from Purdue and Iowa State Universities, respectively. His interests include the eco-physiology and taxonomy of woody plants as well as their use as ornamentals.

Christie Dustman, principal of her firm, Christie Dustman & Company Inc., is a certified landscape designer and has been designing in the Boston area for 11 years. Working closely with A Yard & A Half, a landscape construction company, she offers a design-build approach to landscape solutions. Examples of her work can be viewed at www.christiedustman.com.

Diane Edgecomb is an award-winning storyteller and experimental theater artist who lives in Boston, Massachusetts. In 2001, she initiated “The Kurdish Story Collection Project,” an international endeavor to document the stories and storytelling traditions of the Kurdish people. Beginning by recording Kurdish storytellers in the United States and then abroad, Edgecomb selected and compiled stories in her newly released book, A Fire in My Heart: Kurdish Tales.

Kanchi Gandhi earned his doctorate from Texas A&M University. He edits several botanical journals including the International Plant Name Index for the Harvard University Herbaria, Flora of North America, and Rhodora, the journal of the New England Botanical Club. He is a passionate and dedicated instructor of botany and plant biology for the Arnold Arboretum.

Kit Ganshaw has been featured in Horticulture magazine and toured the Bradley Rosaceous Collection at the Arnold Arboretum with Roger Swain on the “People Places & Plants” television show. Kit started her work at the Arnold Arboretum as an intern and in 1995 joined the staff as horticultural technologist, concentrating her work in the Bradley Rosaceous Collection.
Carol Govan helps others to explore the connection between art and science and to learn the observational skills needed for both. She is a professional artist and educator whose insight has engaged scores of students at museums and gardens in Massachusetts.

Abby Hird is a Putnam Fellow at the Arnold Arboretum, where she is heading up initiatives in plant conservation and sustainable work practices. Abby coordinated a graduate student community garden while completing the Longwood Graduate Program in Public Horticulture at the University of Delaware.

Luiz Ibanhez is supervisor of maintenance with NatureWorks Landscape Services, Inc. in Walpole, Massachusetts, where he is responsible for the horticultural training of employees. A native speaker of Portuguese, he has worked in the green industry for more than eight years.


Jen Kettell, horticultural technologist at the Arnold Arboretum, oversees The Leventritt Garden of Shrubs and Vines. She is a certified arborist and an accredited organic land care professional. She began work at the Arboretum as an intern in 2003.

Erica Max is landscape supervisor and educational coordinator with the Mary M.B. Wakefield Charitable Trust, located on a historic estate in Milton, MA. She is a graduate of the Landscape Institute.

Robert Mayer has been birding, photographing, and volunteering as a docent and field-study guide for more than five years at the Arnold Arboretum.

Peter Medaglia is the owner of Gold Meadow Farms, an organic farm and nursery from which he also operates Gold Medal Gardens, his award-winning home garden design and construction practice. All of his landscape and farming practices feature sustainable, organic, and ecological approaches to create beautiful designs in synergy with nature and the tastes of his owner clients.

Julie Moir Messervy has inspired a new generation of landscape designers and homeowners to create gardens and parks as soul-nurturing places. Her books include Contemplative Gardens and The Inward Garden. In 1999, Messervy completed the award-winning Toronto Music Garden, a collaborative project with renowned cellist Yo-Yo Ma and the City of Toronto.

Sue Pfeiffer is a curatorial fellow with the Arnold Arboretum and was a horticulture intern in the summer of 2007. She graduated from the Niagara Parks Commission School of Horticulture in 2008 and the University of Toronto in 2002 with degrees in environmental science and biology.


Kyle Port has a bachelor’s degree in environmental horticulture from Washington State University. As manager of plant records, Kyle supervises mapping and labeling efforts as well as the formal assessment program of accessioned plants in the permanent collections at the Arboretum.

Nancy Rose, a horticulturist, is editor of Arnoldia at the Arnold Arboretum. For the previous eighteen years, she worked in extension horticulture and woody plant research in Minnesota. Nancy is also a garden writer, photographer, and co-author of Growing Shrubs and Small Trees in Cold Climates.

Kim Smith is an interior and garden designer. Kim Smith Designs, her company established in 1985, works with clientele to create highly individualized, livable spaces. Kim’s love of textiles drew her to interior design, and passion for flowers to garden design. She is the author of the recently published book, Oh Garden of Fresh Possibilities!

Judith Sumner is a botanist with interests in flowering plant systematics and morphology, and medicinal plants. She is the author of American Household Botany and The Natural History of Medicinal Plants and numerous scientific publications. She is currently writing a college botany textbook for McGraw Hill on the symbiotic interrelationships between plants and other organisms.

Ruth Ann Wetherby-Frattasio, an award-winning botanical artist and instructor with a degree from the Massachusetts College of Art, exhibits nationally in juried botanical shows. She is a member of the American Society of Botanical Artists and the American Orchid Society.
Registration Information

The Arnold Arboretum’s adult education program offers many types of classes for adult learners. These are listed chronologically with dates and times noted with each class description. Letters in brackets designate meeting places. See the key to meeting places on page 11. See page 10 for an overview of classes by topic. If you have questions, contact Pamela Thompson, manager of adult education, at 617.384.5277.

Registration—Online

To register online, please visit: www.arboretum.harvard.edu/adult_ed

Once you have selected the classes you wish to register for, the online registration system will guide you through the process step by step. Payment is by credit card only (Visa, MasterCard, or American Express). If you are registering for more than one person, you must complete a separate registration for that person. You will receive an email confirming your class selection and payment. Consider your registration to be complete when you have received this email.

Registration—Mail or Telephone

To register by mail for adult education classes, please complete the form on page 27 and 28. You may register by phone with a credit card at 617.384.5251.

Registrations are processed upon receipt and confirmed in writing. You must complete the form on page 11. See page 10 for an overview of classes by topic. If you have questions, contact Pamela Thompson, manager of adult education, at 617.384.5277.

Mail registration form to:
Adult Education Registrar
Arnold Arboretum
125 Arborway
Boston, MA 02130

Fees and Membership

Fees for classes are listed with each class description. Members receive a discount of up to twenty percent for most classes. If you are a current member, or if you are enclosing a new or renewed membership with this registration, you are entitled to pay the member rate. If our records do not indicate that your membership is current, we must charge for classes at the nonmember rate. Please write separate checks for membership and class registration. For more information, contact Pamela Thompson, manager of adult education, at 617.384.5277.

Please note that check refunds can take up to 60 days to process. We recommend payment by credit card when possible.

Children at Classes

We regret that it is not possible to include babies, children, or pets in classes designed for adults.

Parking for Arboretum Classes

Hunnewell Building [HB]
Monday through Friday, for daytime and evening classes, students may drive through the main gates and park in front of the Hunnewell Building if space is available. Otherwise parking is along the Arborway. For all weekend classes and events, the main gates remain closed and parking is along the Arborway.

Dana Greenhouse [DG]
For weekday, evening, and weekend classes, students may park in designated spaces and along the greenhouse drive in front of the Bonsai House unless otherwise directed. Do not block any entrances to the shrub and vine garden or access drives surrounding the greenhouse facility. Please do not park on the grass.

Note: At both locations be aware of Arboretum visitors (especially children), employees, and Arboretum equipment and vehicles when parking at and leaving our facilities.

Cancellations and Refunds

You may cancel a class registration and receive a partial refund by calling the adult education department five business days prior to the first class. With such cancellations, a $5.00 per class cancellation fee will be deducted. We regret that no refunds or credits can be given for withdrawals from classes in progress or for classes you have not attended.

If registration numbers are insufficient, we reserve the right to cancel a class. In this case, a full refund will be issued.

Please note that check refunds can take up to 60 days to process. We recommend payment by credit card when possible.

Weather Cancellations

Class cancellations due to inclement weather are announced by recorded message at 617.384.5277. If you think that your class may have been canceled, please call the adult education department at this number.

Confirmation of Attendance

The adult education department does not maintain attendance records and cannot confirm your attendance at past class meetings. If you need proof of attendance at classes, you are responsible for obtaining your instructor’s signature at each class meeting. To request a list of all the Arboretum classes for which you have registered, please contact Pamela Thompson, manager of adult education, at 617.384.5277.

Professional Credits

Certified members of the Association of Professional Landscape Designers (APLD), Massachusetts Certified Arborists (MCA), and Massachusetts Certified Landscape Professionals (MCLP) may earn continuing education units for attending selected Arnold Arboretum classes. These classes and the number of credits offered are indicated by the following: (APLD: #ceu) (MCA: #ceu) (MCLP: #ceu). Other classes may also be accepted for accreditation. Contact the accrediting organization for approval.

Tax Deductions

Income tax deductions may be allowed for education expenses undertaken to maintain and improve professional skills. Please consult your tax advisor.
Registration

Classes fill quickly. Please register early (please print).

NAME

STREET

CITY STATE ZIP

HOME PHONE BUSINESS PHONE

EMAIL

Method of Payment (credit card preferred)

☐ VISA ☐ MasterCard ☐ American Express

AMOUNT (total from other side)

CARDHOLDER NAME

CREDIT CARD #

EXP. DATE SECURITY CODE

☐ Check or money order payable to the Arnold Arboretum

Are you a current member of the Arnold Arboretum?

☐ Yes ☐ No If yes, under what name is your membership listed?

Please suggest new course ideas or make comments below.

Join the Friends of the Arnold Arboretum

☐ Yes! I wish to join the Friends of the Arnold Arboretum at the indicated level of membership.

☐ Student/Teacher $20
☐ Individual $35
☐ Household $50
☐ Sustaining $100
☐ Organization $150
☐ Sponsor $200
☐ Patron $500
☐ Benefactor $1000

My Name and Address (please print)

MR., MS., MRS.

STREET

CITY STATE ZIP

Payment can be made with a check, money order, or credit card (Visa, MasterCard, American Express only). Please make checks payable to the Arnold Arboretum and send a separate check for payment of classes. Students and teachers, please send a copy of your I.D. with this form.

☐ My check is enclosed ☐ Please charge my credit card: ☐ Visa ☐ MasterCard ☐ American Express

CREDIT CARD # EXP. DATE

CARDHOLDER NAME PHONE

SIGNATURE

Registration

To register for Arnold Arboretum classes, please complete this form. If you are registering for more than one person, please attach a separate sheet with names, addresses, and telephone numbers. Credit card registration may be made online or by telephone 617.384.5251.

Registrations are processed upon receipt. You may pay by cash, check, or credit card (Visa, MasterCard, or American Express). All registrations will be confirmed in writing. Your registration is complete after you have received written confirmation.

Mail registration form to:
Adult Education Registrar
Arnold Arboretum
125 Arborway
Boston, MA 02130

If you are a current member, or if you are enclosing a new or renewed membership with this registration, you are entitled to pay the member’s discounted rate. If our records do not indicate that your membership is current, we must charge for classes at the nonmember rate.

Please write separate checks for membership and class registration.
### April

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<td>ART 130C Creative Botany: Focus on Trees</td>
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<td>30</td>
<td>WAL 169 Growing a Legacy: A Collector’s Vision</td>
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### June

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<tr>
<td>2</td>
<td>BOT 127A Introduction to Floral Structures</td>
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<td>9</td>
<td>HOR 328 Woody Plant Health Care</td>
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<td>ART 104 Field Sketching</td>
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<td>10</td>
<td>HOR 307 Propagation 3: Techniques for Layering and Softwood Cuttings</td>
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<td>11</td>
<td>HOR 227 Hardscape Options: Materials, Function, Provenance</td>
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<td>14</td>
<td>HOR 103 The 25 Most Common Trees in Boston</td>
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<td>HOR 125 Vines for the Garden</td>
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<td>WAL 224A In the Groves: A Summer Solstice Journey</td>
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<td>20</td>
<td>WAL 224B In the Groves: A Summer Solstice Journey</td>
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<td>WAL 121B Trees Inspire</td>
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<td>22</td>
<td>HOR 152 Species Roses: Care and Culture</td>
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<td>WAL 182 Can You Dig It?</td>
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<td>HOR 282 Design Workshop for Home Gardeners</td>
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<td>14</td>
<td>BOT 127B Introduction to Floral Structures</td>
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<td>15</td>
<td>HOR 144 What Is That Shrub? Why Should I Care?</td>
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### August

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<td>HOR 439 Insect Science and the Fun of Collecting and Preserving</td>
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<td>WAL 911 Arboretum on Alert</td>
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<td>29</td>
<td>WAL 108 Oh Nuts!</td>
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### September

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<td>BOT 100 Introduction to Botany</td>
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<td>26</td>
<td>HOR 303 Propagating Trees and Shrubs from Cuttings and Seeds</td>
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### TOTAL FEE: $_____

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**Thank You for Becoming a Friend of the Arnold Arboretum!**

New members will be sent an introductory packet containing maps and information, the current issues of *Arnoldia* and *Silva*, a membership card(s), and a window decal. Please allow two to three weeks for processing. Call the membership office with any questions at 617.384.5766. Please write your name as you would like it to appear on your member card(s):

**MEMBER CARD**

**2nd MEMBER CARD**

**(household level and above only)**

I would like to receive information about news/events via email.

**EMAIL ADDRESS**

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**Help Us Make New Friends!** Do you know someone who would like information on our classes, free tours, and member benefits? Please provide their names and addresses and we will put them on our mailing list.

**MR., MS., MRS.**

**STREET**

**CITY**

**STATE**

**ZIP**

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**If you are already a member, thank you!**

Please give this membership application to a friend.
Breaking buds and glorious blooms signal the splendor of springtime. Fresh green leaves and cool pockets of shade ease us into the relaxing days of summer. An ever-changing landscape awaits you.
Join lilac enthusiasts from throughout New England to celebrate this century-old tradition. Enjoy a dazzling array of over 180 kinds of lilacs with delightful fragrances and gorgeous colors—plus tours, dancing, art, music, children’s activities, and food (picnicking allowed on this day only). On Lilac Sunday, the Arboretum is open as usual from dawn to dusk, with special activities from 10:00am until 4:00pm. Free. Public transportation is strongly encouraged.
Where Art and Science Meet
A Celebration of the Life and Art of Esther Heins
April 4–May 31, 2009
Hunnewell Building Lecture Hall
See full details on the inside front cover.

Root Works
Works on Paper by Linda Murray
June 13–July 26, 2009
Hunnewell Building Lecture Hall
Reception with the artist
Saturday, June 13, 1:00–3:00pm
Drop-in family activity
Saturday, July 25, 11:00am–1:00pm

When a huge 100-year-old maple toppled, narrowly missing Linda Murray’s studio, it set in motion a two-year exploration of trees in Murray’s art. She believes that “old trees exude something that is intangible, a presence of strength and wisdom. These trees are saying, ‘I am a survivor. I was here before you were born and I will be here when you are gone.’ They transcend time.”

Ethereal images in watercolor, mixed media, and graphite capture the damp, hushed feeling of a deep forest. Delicate moss creeps at the base of giant trunks, and exposed roots reveal faces within.

Linda Murray lives in Bath, Maine, and holds a BS in Studio Art from the University of Maine at Augusta. Her artwork is included in many private collections and is part of the University of Maine’s permanent collection. Murray teaches art to adults and children in public and private venues.

A Forest in Mind
Mixed-media Paintings by Terry Boutelle
August 1–September 13, 2009
Hunnewell Building Lecture Hall
Reception with the artist:
Saturday, August 1, 1:00–3:00pm
Conversation with the artist:
Thursday, August 13, 6:30–8:00pm

Terry Boutelle’s vision of trees and forests is shaped by memory, meditation, and imagination. Initially inspired by birch trees in the Arboretum, Boutelle has moved beyond realism into psychological and emotional realms. Using mixed media such as acrylic, pastel, wax, and plaster, and often incorporating natural objects such as leaves, twigs, and seeds, she creates paintings that are at times richly textured and at other times, smooth and veiled. Her images evoke mystery and yearning for things we cannot quite grasp.

Largely self-taught, Boutelle has also studied at the Fine Arts Work Center, Massachusetts College of Art, and the School of the Museum of Fine Arts, Boston. She is the current president of the Jamaica Plain Artists Association and a painting instructor at the Eliot School of Fine and Applied Arts.

CALLING ALL ARTISTS
Jamaica Plain Open Studios
Artists in the Arboretum
Local artists are invited to submit work inspired by the plants, landscape, and collections of the Arnold Arboretum for the upcoming show organized in conjunction with Jamaica Plain Open Studios. The deadline for submissions is Tuesday, July 14. Exhibition details and submission forms are available on our website: www.arboretum.harvard.edu/jpos.

Note: The lecture hall is often used for meetings and classes. Please call 617.384.5209 for exhibition availability. See page 33 for Visitor Center hours.
Guided Walking Tours

Experience the Arboretum in a new way—take a guided tour and gain a richer understanding of this special place. Trained docents point out seasonal highlights and tell you stories the plants would tell—if they could talk! Every tour is different; you’ll hear about the science of trees, Arboretum history, future Arboretum plans, and points of interest.

Tours begin in front of the Hunnewell Building unless otherwise noted, last around 90 minutes, and are geared toward adults. There is no need to register. For more information or cancellation updates due to inclement weather, call 617.384.5209.

Free Tour Schedule

Saturdays at 10:30am
April 11, 25
May 2, 9, 16, 23, 30
June 6, 13, 20, 27
July 11, 25
August 8, 22
September 5, 12, 19, 26

Sundays at 1:00pm
April 19, 26
May 3, 17, 24, 31
June 7, 14, 21, 28
July 5, 19
August 2, 16, 30
September 13, 20, 27

Wednesdays at 12:15pm
April 22
May 6, 20
June 3, 17
July 1, 15, 29
August 12, 26
September 9, 23

Fridays at 6:00pm
May 8
June 5
July 10
August 7
September 4

Scheduled Group Tours

The Arboretum is a beautiful place to bring a group for a private tour. Visitor Education staff work with you to develop a tour that meets your group’s needs, providing a memorable experience for a wide range of audiences. Trained, knowledgeable guides adapt tours to fit your group’s interests, and our low docent-to-participant ratio translates into a rich, personal experience.

Both bus and walking tours are available. For more information or to request a tour packet, contact Sheryl White at 617.384.5892 or at sheryl_white@harvard.edu.

Special Theme Tours

Free. Advance registration is requested; call 617.384.5251. See page 26 for registration information.

Plant Re-exploration
Abby Hird, Putnam Fellow
Wed April 22 10:30am–noon [HB]
See page 16 for details.

Trees Inspire
Robbie Apfel and Bart Kelso, Arboretum Docents
Sun April 26 3:00–4:30pm
Sun June 21 3:00–4:30pm
See page 16 and 21 for details.

Women of the Arboretum
Jane Phipps, Arboretum Docent
Sat May 16 1:30–3:00pm
See page 18 for details.

Can You Dig It—The Arboretum Underground
Chuck Sherzi, Arboretum Docent
Sat June 27 1:30–3:00pm [HB]
See page 22 for details.

Arboretum on Alert
Julie Coop, Manager of Plant Health
Thu Aug 13 10:30am–noon [HB]
See page 22 for details.

Oh Nuts!
Michael Dosmann, Curator of the Living Collections
Sat August 29 1:30–3:00pm [HB]
See page 23 for details.

Bird Walks

Led by Robert Mayer, Arboretum Docent
Free. No registration required

Sun May 3, 7:00–8:30am
Jointly sponsored by the National Park Service/Frederick Law Olmsted National Historic Site and the Brookline Bird Club. Meet at the main Arborway Gate.

Sat May 9, 7:00–8:30am
Explore the birds of Bussey Brook Meadow with the Arboretum Park Conservancy. Meet at South Street Gate.

Don’t miss Birds and Bards—see page 30 for details.
Family Fun

Explore the Arboretum and foster a sense of wonder for nature in your child. Here are three free ways to dig deeper this spring and summer:

- Drop by the Visitor Center for special family activities on April 25, June 27, July 25, and August 29, anytime between 11:00am and 1:00pm.
- Be on the lookout for new volunteer interpreters stationed outdoors, ready to give your visit a boost with hands-on fun and learning.
- Vacation week family adventures! Take a guided nature hike to search for signs of spring with Nancy Sableski, Manager of Children's Education. No registration required.
  - Sun Apr 19 1:00–2:30pm
  - Mon Apr 20 10:00–11:30am

Bring water and a snack (and binoculars, if you have them); wear sneakers or hiking books and a hat. These hikes are appropriate for children from age 6 to 12 with an accompanying adult. Meet at the Hunnewell Visitor Center. In case of inclement weather, call 617.384.5239.

Getting Here

Visitor Parking & Driving Permits
Visitor parking is available around the Arboretum’s perimeter. No parking is allowed inside the Arboretum gates. Individuals with special needs may request a driving permit at the Hunnewell Visitor Center, weekdays only, from 10:00am to 2:30pm. For more information please call 617.384.5209. For parking for classes, see page 26.

Visitor Services
The Visitor Center, located in the Hunnewell Building, is open at the following times:

- Monday to Friday 9:00am to 4:00pm
- Saturday 10:00am to 4:00pm
- Sunday Noon to 4:00pm
- Holidays Closed

See website for holiday closings.
Telephone: 617.384.5209

Services available in the Visitor Center include:

- Personal assistance to enrich your visit
- Maps and self-guided tour brochures
- Special exhibitions, including "Science in the Pleasure Ground" and seasonal art shows
- Bookshop, featuring a large selection of books and educational items for children and adults
- Restrooms
- Horticultural library, open Monday through Saturday 10:00am to 4:00pm. For more information, call 617.522.1086 or email hortlib@arnarb.harvard.edu.
trees are a big part of the Arboretum, but have you ever wondered which trees at the Arboretum are the BIGGEST? As you’ll see on this tour, you get different answers depending on how you ask the question. Is the BIGGEST tree the tallest tree? Is it the widest tree? How about the tree with the longest leaves, or the largest fruits? Come travel the landscape in search of all kinds of giants!

1. **Largest number of trees:** *Metasequoia glyptostroboides* (dawn redwood)
   Number of trees in the landscape: 101
   Start at the grove of dawn redwoods on Willow Path by the brook.

2. **Tallest tree:** *Acer saccharinum* (silver maple)
   Height: About 132 feet

3. **Biggest footprint:** *Aesculus parviflora* (bottlebrush buckeye)
   Even though it is only about eight feet tall, this single plant measures around 100 feet across.

4. **Largest simple leaf and largest flower:** *Magnolia macrophylla* (bigleaf magnolia)
   Leaf length: 12 to 20 inches; flower size: 14 inches across

5. **Biggest trunk diameter and widest crown spread:** *Fagus sylvatica* (European beech)
   DBH: 6.6 feet
   Crown spread: 144.5 feet

6. **Longest fruit:** *Catalpa bungei* (catalpa tree)
   Fruit length: 12 to 20 inches

7. **Largest compound leaf:** *Aralia elata* (Japanese angelica-tree)
   Leaf size: 3 to 5.5 feet in length, and slightly less in width

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**LEAF TYPES**

Look at these two leaves. What is the difference between the simple *Magnolia* leaf (top left) and the compound *Aralia* leaf?

**DID YOU KNOW?**

DBH stands for “Diameter at Breast Height.” The standard height to calculate DBH is 4.5 feet from the ground.
There are trees in the landscape which were growing here before the Arboretum was created. Can you spot a big white oak on Oak Path? We think it is well over 200 years old, while the Arboretum is only 137 years old.

The oldest tree in the Arboretum is also one of the smallest—a *Chamaecyparis obtusa* (Hanoki falsecypress) housed in the Larz Andersen Bonsai Collection. This plant was started in Japan in 1737, making it 272 years old!

Calculating the height of a very tall tree is more difficult. At the Arboretum we use a laser hypsometer to figure out tree height.

This instrument bounces an infrared beam of light off of the tree and measures the time it takes the beam to bounce back. Using this distance, the instrument calculates the exact height of the tree.

You don’t need any special equipment to make an estimate of the height of a tree. Try this experiment with the silver maple (2 on the tour). Is your result similar to the result we got using the laser hypsometer?

**Materials:**
2 People: Person **A** (Whose height is known)
Person **B** (Who has thumbs)

**Instructions:**
1. Person **A** stands next to the trunk of the tree.
2. Person **B** steps back from the tree with one arm outstretched, giving the “thumbs up” sign.
3. Person **B** looks through one eye and walks back until Person **A** is exactly as tall as Person **B**’s thumb.
4. Person **B** then counts how many “thumbs” tall the tree is. (Keeping your arm straight, use both hands to “climb” the tree, thumb over thumb.)
5. The height of the tree can be estimated by the following equation:

   \[
   \text{Height of Person } A \times \frac{\text{Number of “thumbs” counted by Person } B}{\text{Approximate height of tree (in feet)}}
   \]

After you get the height of the silver maple, try this experiment with the big dawn redwood at the edge of the meadow by the Visitor Center. Then stop into the Visitor Center to check your answer.
The Arnold Arboretum grows 4,500 kinds of hardy trees, shrubs, and vines. They are arranged in botanical sequence and labeled with name and country of origin. Frederick Law Olmsted designed the grounds, and the plantings were laid out by Charles Sprague Sargent. Special plant collections include the Larz Anderson Bonsai Collection, the Bradley Rosaceous Collection, and the Leventritt Garden of Shrubs and Vines.

The grounds are open daily without charge from sunrise to sunset. For Visitor Center hours and services see page 33.
Celebrate the Arrival of Spring!

Members’ Tour Day
Saturday, April 25, 2009

Each spring the Arboretum hosts a morning of staff-led walking tours for members of the Friends of the Arnold Arboretum. Join us for this in-depth exploration of the landscape and celebrate the beginning of the flowering season on Saturday, April 25, 2009, from 10:00am to noon. Members’ Tour Day is a wonderful opportunity to gain insight into the scope and care of the living collection, tap the expertise of Arboretum staff, and renew your spirit after a long winter.

The event begins at the Hunnewell Building with refreshments, followed by tours led by Arboretum living collections staff. Tours last approximately two hours and may cover considerable ground, so participants should dress for the weather and wear comfortable walking shoes.

A save-the-date reminder with additional details will be mailed to members in March. Sign up for our E-newsletter today on our website and receive an email reminder along with monthly updates on Arboretum news, events, and classes. We hope you will join us on Members’ Tour Day and celebrate the inspiring and much-anticipated awakening of the landscape!

Take A Tour, Plant A Tree

This year on Members’ Tour day, members at the Sustaining level and above will have a special opportunity to pick up their 2009 Spring Plant Dividend selection. The benefits of picking up your plant in person include protecting it from shipping damage, reducing mailing costs, and limiting the use of packaging materials. Eligible members should look for a Plant Dividend letter and reply card this spring with more details about this year’s plant selection.

Members Make a Difference

Help keep us growing! Your annual membership in the Friends of the Arnold Arboretum supports the care of our landscape and living collections, research initiatives, and education programs for adults, children, and professionals. Your membership gift provides the foundation for all of this important work as well as these benefits to you:

- Subscriptions to *Arnoldia*, our quarterly journal of horticulture and botany, and *Silva*, our semiannual news-magazine and course catalog
- Free admission and/or discounts at nearly 200 gardens and arboreta
- Special member rate for Arnold Arboretum sponsored courses and lectures
- Discounts at more than 35 participating nurseries
- A 10% discount on books and gifts at the Arboretum bookstore
- Admission to the annual Members’ Plant Giveaway & Sale, and free plants

Please join today at one of the following membership levels to begin receiving your benefits. Additional benefits are offered at the Sustaining level and above.

- Student/Teacher ..... $20
- Individual ............ $35
- Household ............. $50
- Sustaining .......... $100
- Organization ........ $150
- Sponsor .............. $200
- Patron ................ $500
- Benefactor .......... $1000

To join or learn more, please contact the membership office at 617.384.5766, or request information by email at membership@arnarb.harvard.edu. Thank you!
Rhododendron vaseyi
A Ruby All Year Around

Named by pioneering Harvard botanist Asa Gray in 1878 and first accessioned at the Arnold Arboretum two years later, the pinkshell azalea (Rhododendron vaseyi) has long been admired in the collection. If you walk along the Arboretum’s Meadow Road in May, you cannot miss the plant’s masses of delicate, pink blossoms with long, up-curved stamens. Although not fragrant, pinkshell azalea offers a remarkable floral display, as the leaves don’t appear until after flowering is finished. In autumn, the show continues as the leaves turn a pleasing red before defoliation. For gardeners, its best feature may be its remarkable adaptability and tolerance of challenging conditions in urban environments, including compacted soil, shade, flooding, and drought.

Threatened by habitat destruction in its native bogs and high elevation forests of North Carolina, pinkshell azalea has been included in the National Collection of Endangered Plants by the Center for Plant Conservation (CPC). Since 1984 when the CPC was founded at the Arnold Arboretum, the R. vaseyi collection has been developed and maintained as a CPC-sponsored collection. The Arboretum currently holds sixteen distinct genetic lineages in the collection, twelve of which were wild-collected in the 1980s. While these accessions are important for research and the preservation of this threatened plant’s genetic identity, they also contribute ample flair to the spring landscape in locations along Meadow Road, Bussey Hill, and in the Leventritt Garden of Shrubs and Vines.

Massed plantings of Rhododendron vaseyi, in full bloom on Meadow Road near the maple collection, create a spectacle in early-to-mid May. Top, a detail of the flowers highlights their up-curved stamens.