ON

HORTICULTURE

UNIVERSITY OF WASHINGTON AUTUMN 2001

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The Center Burns

With enough gasoline you can burn down anything, even a horticulture center. At 3 a.m. on Monday May 21 the Earth Liberation Front ended life as we knew it when it set fire to the office of geneticist Toby Bradshaw and burned down the Center for Urban Horticulture's original and largest

building, Merrill Hall. Today only the foundation remains of this building that housed CUH offices, research labs, library, and herbarium as well as the WSU King County Master Gardener and Urban Food Gardener offices.

Though Dr. Bradshaw was the target (see article on page 3), more than 40 people were directly affected, losing years of research, personal and professional papers, books, precious mementos, and a sense of security. Faculty, staff, students, and volunteers are only now determining the true extent of the losses. Long hours were spent throughout June and July trying to clean soot and smoke from items salvaged from the building. Even after cleaning, the smell of smoke lingers.

Damage to library books and files will take months to determine. Many of the books are coming back from freeze-drying and cleaning looking more like accordions than manuscripts. Thousands of people who depend upon the Center's library and programs for their gardening information have been left bereft by the firebombing and destruction of Merrill Hall. Those of us who worked in Merrill Hall and have built the Center into what it was on May 21 are still suffering from shock, and have been set back years in our work.

Support comes from the Legislature, UW, and Friends

The State Legislature promised \$4.1 million to begin rebuilding Merrill Hall. (continued on page 2)



NTER for URBAN HORTICULTURE

SHECIALLEWENTS

DATES & TIMES: Friday September 14, 2:30 to 6 p.m.; Friday Evening Reception & Lecture, 6:45 p.m.;

Saturday September 15, 9 a.m. to 4 p.m.

LOCATION: NHS Hall, CUH

FEE: The Friday evening event will cost \$15 for NHS numbers, \$20 for non-members

Timed to take advantage of the fall planting season, this plant extravaganza features Washington state's premier specialty growers who offer a huge variety of popular, unusual, and hard-to-find plants. These growers are available for advice, consultation, and encouragement! Friday evening's reception features a rare plant auction, wine, and cheese reception. Richard Hartlage will speak on "Bold Visions for the Garden".

DATES & TIMES: Two-Part Workshop: Wednesday November 28, 7 to 9 p.m. and Saturday December 1,

9 a.m. to noon

LOCATION: Designer David Sessions

Douglas Classroom, CUH

FEE: \$70; pre-registration required, class size limited

We are delighted to present a very special two-part class taught by David Sessions. David is a floral, interior, and garden designer who twice yearly creates the floral displays at New York's Rockefeller Center when he's not traveling to clients around the country. Unearth your hidden treasures from the tool shed, attic, garage, or garden. Transform them into centerpieces, wreathes, door swags and wall hangings that truly reflect the gardener in you. Spend an evening and morning with one of the country's most creative designers and come away with a new appreciation of all the treasures you already own and didn't know it. Wednesday evening is a lecture. Come back with your garden tools on Saturday morning for a hands-on workshop. Learn how to transform your winter-dormant tools into holiday decorations.

Continued from page 1

The University Provost's office and College of Forest Resources gave generous support as the devastated CUH faculty, students, and staff fought hard to finish spring term classes, programs, and projects while cleaning up the mess surrounding them.

Hundreds of volunteers pitched in to clean irreplaceable library books, slide collections, lab glass, computers, and thousands of precious items salvaged from destroyed offices. Many businesses and individuals donated lunches, time and services to simply help get people through the long days. All the community support has given us an invaluable morale boost that has helped us through these difficult months, and for that we are very grateful. Thank you.

Looking to the Future

Librarian Val Easton and her staff are working hard to reopen an interim, scaled down Miller Library in CUH's Isaacson Hall. It is anticipated that the doors will open in late fall. Please check the library's web site at www.millerlibrary.org for updates. The Plant Answer Line will reopen to answer gardening questions, and the Master Gardener clinics will eventually reopen at CUH as well. Until October 1, Master Gardener clinics are held Mondays from 4 until 8 p.m. in the University Village Shopping Center at Ravenna Gardens.

Herbarium specimens will be housed temporarily in the basement of Isaacson Hall. Staff, faculty, and students are housed on the east side of Douglas Conservatory in trailers moved in shortly after the



fire. Others have relocated to the College of Forest Resources on upper campus.

Work has already begun to rebuild Merrill Hall. The search for an architectural firm to lead the design process started in July and the Miller/Hull Partnership was selected in August. Hopes are to create a building that embodies the finest in "green architecture" design principles. This is a fitting goal for a Center devoted to sustaining natural ecosystems and human-altered landscapes. Please join with us as we rebuild.

Bradshaw Speaks Out

THE EARTH LIBERATION FRONT TARGETED RESEARCHER TOBY BRADSHAW FOR HIS WORK ON HYBRID POPLARS. WE ASKED DR. BRADSHAW TO REPLY TO THEIR ACCUSATION THAT HE "RELEASES MUTANT GENES INTO THE ENVIRONMENT."

The late Carl Sagan had a gift for helping the public to understand and appreciate science. He is sorely missed. Sagan had this to say in his book *The Demon-Haunted World*:

We've arranged a global civilization in which the most crucial elements — transportation, communications, and all other industries; agriculture, medicine, education, entertainment, protecting the environment; and even the key democratic institution of voting — profoundly depend on science and technology. We have also arranged things so that almost no one understands science and technology. This is a prescription for disaster. We might get away with it for a while, but sooner or later this combustible mixture of ignorance and power is going to blow up in our faces.

Sagan's prophecy came true in a sickeningly literal way for us when the Earth Liberation Front firebombed Merrill Hall. I was targeted by the ELF firebomb because they allege that I am "the driving force in G.E. [genetically engineered] tree research," and that as part of my research I "unleash mutant genes into the environment that is [sic] certain to cause irreversible harm to forest ecosystems."

But members of the ELF are as ignorant as they are malevolent. I have never genetically engineered a tree, much less released one into the environment. My work in plant genetics, including trees, has relied upon traditional cross-pollination coupled with studies of DNA. My only goal is to better understand how the natural world works. Like all my scientific colleagues, I hope this leads to practical applications that benefit humanity and our environment. But it is simple curiosity that motivates me, and scientific discovery that gives me the greatest thrill.

Let me be clear about plant genetic engineering. I strongly endorse the genetic engineering of plants for research. For the past twenty years, genetic engineering has been a standard method used by thousands of plant biologists who investigate the function of genes. Without genetic engineering we would not know the details of how plants respond to light, produce flowers, or tolerate cold and drought.

I plan to use genetic engineering for my own research, and have recently obtained some genetically engineered (GE) aspen hybrids from Steve Strauss and Rick Meilan, colleagues of mine at Oregon State University.

These GE trees were produced by isolating a gene that we hope will affect the number of branches, and make the crown more efficient at capturing sunlight. The "branching" gene was isolated from a hybrid aspen, then modified in my laboratory by flipping it around so that it would be read in the wrong direction when engineered into a tree. This "backwards" gene was designed to reduce or eliminate expression of the tree's own branching gene, providing clear evidence whether the gene does, or does not, affect branching. We are just beginning to study these 80 GE aspens.

Basic research aside, there are legitimate scientific and public concerns about the planting of GE ("transgenic") crops and trees in our fields and forests. These concerns need to be (continued on page 4)

We Need Your Help

The Center for Urban Horticulture needs your support as we rebuild. Please send donations to the Urban Hort Recovery Fund, c/o The CFR Development Office, Box 352100, Seattle, WA 98195.

addressed and the ultimate decisions about their commercial use made using transparent political and regulatory processes that draw upon science.

I feel so strongly about the value of informed public debate that, more than a year ago, Steve Strauss and I organized a symposium on GE trees that was held in July at Skamania Lodge. We invited

Poplars are deciduous trees with heart-shaped leaves. Poplars have tiny seeds attached to fine, cottony fibers, which can be carried great distances on air currents-hence, the name "cottonwoods". Look for cottonwoods along virtually any riverbank in Washington and Oregon, and along 1-5 and 1-405 because the opportunistic tree grows quickly in disturbed sites.

Their ability to grow in disturbed areas is one reason poplars are grown like a crop by a number of pulp and paper makers. They also are easy to grow and easy to breed for characteristics that make high quality paper. Poplars can be readily propagated — sometimes referred to as "cloning" — using cuttings. Cuttings a foot long and one-half inch wide from a poplar tree with the desired characteristics can be planted and will take root and sprout new shoots.

speakers with the widest possible range of viewpoints, including environmental groups with strong positions against GE trees, ecologists, economists, ethicists, corporate scientists, government regulators, and geneticists. The goal was to find common ground among the disparate viewpoints, and identify a research agenda for the future to which all can agree.

It is ironic, but not surprising, that the ELF and similar groups violently opposed to genetic engineering targeted our symposium for "direct action." Apparently the ELF is equally vehemently opposed to the freedom of scientific inquiry and exchange of ideas among well-intentioned parties on all sides of

the debate. Instead of engaging in rational dialogue, the ELF sets firebombs to promote its vacuous slogan: "You cannot control what is wild." Their notion that genetic engineering represents some sort of unprecedented assault on the environment by humans is absurd.

Humans, like all other life forms on earth, actively manipulate their environment to promote their own survival, often at the expense of other organisms. The simple acts of weeding a flower bed, hybridizing two rhododendrons, planting a non-native perennial in an urban landscape, or building a house are everyday examples of humans controlling what is wild. But we are as much a part of nature as leaf-cutting ants that cultivate fungi in underground gardens, hummingbirds that move pollen between different plant species, fruit bats that disperse seeds far from their point of origin, or termites that build elaborate air-conditioned mounds in which to live. Indeed, genetic engineering of plants was "invented" by bacteria millions of years ago, and many wild plants carry genes inserted into their chromosomes by the same *Agrobacterium* now used by plant geneticists to shuttle transgenes into GE crops and trees.

Perhaps ELF members and their sympathizers should expend the effort it takes to understand the complex intricacies of biology, rather than trying to enforce their narrow, fundamentalist worldview by setting firebombs.

As Sagan points out, "Both science and democracy encourage unconventional opinions and vigorous debate. Both demand adequate reason, coherent argument, rigorous standards of evidence and honesty." I believe we should have the freedom to pursue knowledge and participate in open debate without the fear of an anti-science jihad.

For more information on Dr. Bradshaw's research, click on http://faculty.washington.edu/toby/.

During May, the Sustainable Community Landscapes consortium hosted a panel discussion to talk about preparing and managing landscapes during drought periods. Panelists included Peter Dervin of the Washington Association of Landscape Professionals (WALP), Nota Lucas and David McDonald of Seattle Public Utilities, and Tom Hinckley, UW Plant Physiologist and the Director of the Center for Urban Horticulture.

The panelists discussed a variety of scientific, legal, and social issues. Questions asked of the panelists included: (1) What should people know about watering priorities for this year? (2) What are the biggest impediments to water conservation and how can this be addressed? (3) What kind of soil preparation and/or management will reduce landscape water needs?

The panelists agreed that although Seattle won't likely have mandatory water restrictions this year, other regional utilities are experiencing problems. Reducing consumption now will help to prevent future problems. Since cost and education are driving forces in the landscape industry we must find a way to balance these factors. Teaching people about integrated pest management, natural lawn care, and how to understand and emulate natural systems is a key to creating healthy landscapes. The panelists came up with the following list of tips to reduce water use and improve landscape health:



- Cluster plants according to their water needs.
- Mulch with a thick layer of wood chips or compost. As a general rule, use woody mulches for woody plants and non-woody mulches for herbaceous plants.
- Use a mulching mower with sharp blades and adjust the mowing height for turf type.
- Use soaker hoses or drip systems rather than overhead sprinklers.
- Water early in the morning or late in the evening to reduce evaporation.
- Watering infrequently but deeply is generally better than frequent, shallow irrigation.
- Use rain sensors or water budgets to maximize the effectiveness of irrigation systems.
- Enhance a plant's natural water conserving ability by gradually reducing irrigation prior to a drought. Reduced growth or early senescence may occur, though the plant should survive.

Crane Fly, Don't Bother Me!

SHARON J. COLLMAN, PESTICIDES/IPM OUTREACH COORDINATOR FOR EPA REGION 10

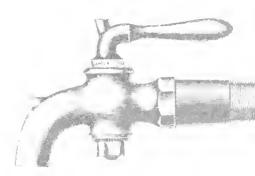


To water quality folks, crane fly larvae are indicators of good stream health. However, a homeowner with a lawn problem will quickly blame crane flies and, often without thinking, apply pesticides to bring about control.

The European crane fly was introduced into the U.S. in 1969 and quickly gained public notice when the larvae stripped many lawns bare. It is common for newly arrived pests to be very damaging in the early years

because they arrive without their co-evolved predators and parasites. Being newcomers, crane flies received lots of media attention. Thirty years later, the natural enemies such as soil microorganisms, and birds have found crane flies and now we only have normal ups and downs in crane fly numbers.

We also know more about the pest crane flies. These are not to be confused with the many crane fly species that are beneficial in streams, or work as decomposers of organic matter on land. Research experience has shown that healthy turf on good soil can withstand high populations of crane fly larvae. At the Washington State University and Oregon State University Research and Extension Centers, turf scientists Gwen Stahnke and Tom Cook have found populations as high as 60 to 80 larvae per square foot in their plots with no significant damage (and turf researchers are very serious about their turf). They recommend that, in most cases, homeowners should spend their efforts on improving lawn health. In most cases, proper fertilization will help the lawn outgrow any damage. If homeowners check their lawns during late winter and early spring, they will have plenty of time to intervene if the crane fly starts to get out of hand. These researchers have also found that the eggs and (continued on page 6)



For more information about the Sustainable Community Landscapes group and upcoming meetings, visit their web page at http://depts.washington.edu/mulch/

young larvae are very susceptible to dry soil conditions in the fall. One recommendation is to withhold water to lawns during mid August to mid September.

A far more serious problem has developed. With pest crane fly's high media profile, the public has come to know, and to blame, crane fly for ANY lawn problem. Consequently, excessive and unnecessary pesticides are being applied and they are showing up in urban streams. The common pesticides used on crane flies have been diazinon (which has caused several bird kills) and dursban.

To improve communication about crane flies, researchers, educators, and regulators in the Pacific Northwest (Environmental Protection Agency, Washington State University and Oregon State University researchers and Cooperative Extension agents, Washington and Oregon Departments of Agriculture, and other area specialists) are collaborating to share information via a new website. The website covers basic information on crane fly identification and management, current research reports, technical references, photos and information on how to join a discussion list on pest crane flies. This information is available at http://whatcom.wsu.edu/cranefly.

Where lawn damage is observed, check carefully. It is possible the lawn is suffering from lack of water, drought or heat intolerant grasses or from lawn diseases — many of which also can be controlled by good lawn care.

"Target the pest, and protect the rest".



Current Madrone Research

Pacific Madrone and Slope Stability BY AL WAGAR

Seattle's many unstable hillsides tend to slide when soils become saturated, making anything that reduces soil moisture "to the good." A small study using trees in 6-gallon pots found madrones to transpire more water (per unit of leaf surface area) than Douglas-fir, western red-cedar, or western hemlock. Further, during the winter

the madrones transpired at approximately 10 percent of their summertime rates, while conifer transpiration was much less. The high transpiration rate of madrones is not trivial and could reduce the likelihood of landslides. The results are consistent with madrones being not only adapted to dry sites but helping to keep sites dry by heavy transpiration, perhaps as a competitive strategy that makes sites less suitable for other species.

Soil Nitrogen and Disease Severity in Pacific Madrone in Several Urban Habitats BY MARIANNE ELLIOTT AND ROBERT L. EDMONDS

We examined madrone health and soil conditions in particular forms of soil nitrogen (N), on five sites in the Puget Sound area. We were interested in learning how the soil environment influences host susceptibility to the fungal pathogen *Nattrassia mangifera*. The fungus causes cankers that can be debilitating to the tree. Preliminary analysis seems to indicate an association between higher rates of organic matter breakdown in the soil and number of cankers.

Sites with high levels of organic matter had bigger trees, the soil was more acid, and there was a higher %N in the soil and more cankers. The increased severity of disease may be from the higher %N providing the canker fungus with a food source. This would reduce root colonization by beneficial mycorrhizal fungi. In sites with trees of comparable size and age, the healthiest sites had soils where insoluble nitrate concentrations were higher than soluble ammonium. It appears that adding organic matter such as rich compost may lead to increased damage by *N. mangiferae*.

Soil Factors and Health of the Pacific Madrone

BY DAVID BERGENDORF AND LINDA CHALKER-SCOTT

A survey was conducted to determine if a relationship could be found between soil factors and health of the Pacific madrone (*Arbutus menziesii* Pursh). Twenty random soil samples were obtained from the root zones of 30 trees (root zone is defined as a circle with twice the diameter of the drip line). Soil samples were tested for bulk density, texture and gravel content. The trees were divided into different health classes, and trees in different health classes were statistically analyzed for soil bulk density, percent clay content (texture), and percent gravel content.

For trees in intermediate to poor health classes, there was a statistically significant correlation between percent gravel in the soil and tree health. Soils that have better drainage may act as a buffer against the spread of *Phytopthora cactorum*, a fungus causing root rot. They may also allow excess nitrogen to drain off before being absorbed by roots. Management suggestions were to use coarse mulch over tree root zones, keep people from walking in root zones, or using path material that will not restrict drainage.

Rare Plant Care and Conservation

PROGRAM UPDATE

The Rare Care Program continues to expand and enjoy success even considering the devastating loss of some of its plants in the Center's fire in May.

Ex situ Conservation of Hackelia venusta

In April, Rare Care Program Coordinator Laura Zybas and volunteer Greg Peterson collected wild tissue of *Hackelia venusta* with permission and assistance from the US Forest Service. *Hackelia venusta* is a state-endangered species that has difficulty setting seed and only 500 plants are found in one location in the world. Rare Care has been working on tissue culture techniques for this plant to aid in its recovery. Under Dr. Peterson's guidance, the cultured *Hackelia* is forming roots! The next step is to grow the plants in standard soil media and acclimate them for reintroduction. A tragic note to this is that while we collected tissue from 30 wild individuals, we lost all but seven in the fire. We may lose even more due to post fire contamination.

Conservation of Castilleja levisecta

In March we hired Crysta Gantz to assist in the research by graduate student Wendy Wayne. Wendy is researching the best way to reintroduce the federally threatened golden paintbrush, *Castilleja levisecta*. Plants are being grown in the nursery from wild collected seed and given three different treatments to measure survival rates following planting into their native habitat. This experiment is similar to our work with the same plant on the Rocky Prairie Preserve, but on a larger scale.

New Rare Plant Monitoring Program

This spring Rare Care kicked-off the Rare Plant Monitoring Program. We are working in cooperation with the Washington Natural Heritage Program to collect information on rare plant populations that have not been visited, monitored, or located in the last few years. Over the course of time these populations can decline, be destroyed, or hopefully increase in size. We trained 27 volunteers to monitor rare plant populations across the state of Washington. Many of our volunteers are locating the populations, recording data on population size and habitat conditions, and noting (continued on page 16)

For further information on the events listed, call the NHS office at 206-527-1794.

Building the Award-Winning 2000 Chelsea Flower Show Exhibit

Rosie Atkins
October 10, 7:30 p.m.

Winning top honors at the Chelsea Flower Show is no small feat. Rosie Atkins is editor-in-chief of Gardens Illustrated. She will describe the three years of planning and building that went into their 'Evolution' garden that created a sensation with its unusual design.



The Latest Perennial Planting Trends from Germany

Anja Maubach November 14, 7:30 p.m.

Want to be on the cutting edge of perennial garden design? Come hear Anja Maubach, an internationally noted German garden designer, and fourth generation nursery owner. She will speak on the latest and greatest perennial planting styles for the new millennium.

Arboretum Foundation

For more information on Arboretum Foundation events, please call the events hotline at 206-726-1954 or visit the Foundation website at: www.orgsites.com/wa/arboretumfoundation/

Interested in Volunteering?

Help is needed for special events, the Foundation office, education programs, and special projects around the Arboretum. Call Elaine Anderson at 206-325-4510.

Greenhouse Plant Sales

Sales at the Arboretum Foundation's Pat Calvert Greenhouse continue year-round. Some plants are propagated from the Arboretum collection. Every Tuesday, 10 a.m. to noon, behind the Graham Visitors Center.

Fall Bulb & Plant Sale

A fantastic selection of favorite and unusual bulbs, plus plants from leading area vendors and nurseries. Sunday, October 7, 10 a.m. to 4 p.m., Graham Visitors Center. Free parking, no admission charge.

Fall Winning Gardens Tour

See seven outstanding private gardens in the Snohomish and Monroe areas. These gardens are open to guests one day only. Saturday, October 13, 10 a.m. to 4 p.m. Call 206-726-1954 for ticket information.

Celebrate the Reds

Celebrate fall color, fine wines and gardening at Wells Medina Nursery on Saturday, October 13, noon to 4 p.m. Call 206-726-1954 for more information.

Greens Galore

Freshly cut greens, cones, garlands, wreaths and more for holiday decorating. Hand-made craft and gift items also. Saturday December 1, 10 a.m. to 4 p.m., Graham Visitors Center.

News from CUH and WPA



Rentals and the Fire

The recent fire at the Center did not damage the rental facilities. We have been able to operate on a normal schedule since the first week after the arson. After serving as a temporary holding facility to clean and organize the Miller Library's collections hours after the fire, NHS Hall has returned to its normal function as a site for horticultural events, university meetings, and social events.

The technical upgrade of the Douglas classroom is complete. There is now a range of additional functions for use by the Center's academic and outreach programs and the horticultural groups that meet in the space.

This fall Isaacson Hall will become the temporary home for the library and offices during the rebuilding of Merrill Hall. This will result in the loss of Isaacson classroom as a meeting and event space. The Northwest Horticultural Society, Seattle Garden Club, and the Puget Sound Mycological Society have graciously offered the use of their offices as temporary facilities for staff displaced from Merrill Hall. We greatly appreciate their generosity and help during this difficult time.

Finally, Richard Hartlage of the Elisabeth C. Miller Botanical Garden and Theresa Malmanger of Ravenna Gardens have donated plants for use in several containers that have been placed in the McVay Courtyard and the Soest Garden. The containers were the result of a generous donation by Steve Burgess, professor at the UW and neighbor of the Center. Richie Steffen and Greg Graves of the Miller Garden used their creative talents to arrange and install the plants in the containers, and these have helped soften the fire's visual effect on the McVay courtyard and bring even more color to the ever-blooming Soest Garden.

Visitors continually remark on how good the plants in the courtyard look following the fire, and

this is a tribute to both the generous donations of plants and containers, and the work of Center staff member Ray Larson and others.

Urban Horticulture Students Set Back but Lend a Hand

The work of many students was set back by the May 21 fire. In addition to the destruction of all lab and library facilities, the research and coursework of many was severely damaged. The end of the quarter was a difficult time for everyone, but they all pulled through.

The students were remarkable as they helped fire recovery efforts, staying until all hours to save as much as possible. Several students were at the Center nearly every waking hour they weren't in class during the first weeks. Everyone has pulled together, and their selflessness has been extraordinary. Our students are a credit to the Center and have helped to keep up spirits among the staff and faculty during the fire's aftermath.

Graduate student Kelly Dlouhy (MS, with Kern Ewing) was awarded a Masters degree at the end of spring quarter. Kelly studied site preparation effects on the success of plant species in wetland mitigation sites.

Taryn Bauerle (MS, with Linda Chalker-Scott) was delayed slightly by the fire, and will be completing her graduate work this fall. Taryn is studying comparative mechanisms to control English ivy (Hedera helix) in Seattle city parks.

The Center will welcome 14 new graduate students this fall, bringing the total number of graduate students to nearly 40. The undergraduate program continues to be one of the fastest growing and most popular in the College of Forest Resources.

Miller Library Staff News

The books, periodicals and other materials from the Miller Library were treated during the summer for water and smoke damage. In September the staff will be able to begin the process of sorting and assessing the total damage to the collections. The staff has been overseeing the conservation work and continuing many of the normal functions of the library including fundraising and collection development. However, with the collection unavailable to provide reference services, the staff has given some of their time to help other libraries on the UW campus.

Brian Thompson has been working on the reference desk at the Natural Sciences Library, and creating a Horticulture section in the UW Libraries information gateway. Martha Ferguson and Tracy Mehlin have both been working (continued on page 10)



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at the general information desk for the Allen/ Suzzallo Libraries. Martha has also been doing allsubject cataloging and Tracy has been working with the slide collection at the School of Art, giving her a solid foundation for a future reorganization of the CUH slide collection. Valerie Easton continues to oversee development for the library as well as work with other staff to begin to rebuild the library and its services. Staff are maintaining contact with library volunteers, loyal patrons and the many friends who continue to offer support during this challenging period.

Native Plant Enhancement and Restoration at Washington Park Arboretum

One of the most distinctive features of the Arboretum is the arrangement of its plant collections amidst a matrix of Pacific Northwest native vegetation. The native trees and shrubs play an integral role in providing a backdrop to the collections as well as preserving the regional character of the garden. This arrangement creates some special vegetation management needs (detailed below) to retain the desirable companion plantings of natives while protecting the collections from undue competition.

Managing Invasive Plants Volunteers have provided assistance with removal of English ivy, herb Robert, and other threatening invasive plants. Staff are able to keep the ivy down in these cleared areas, but birds often seed in new stands.

Filling Understory Void With diminished understory species in the Arboretum, water run-off and unplanned trails are on the increase. This past year, organized efforts were put in place to plant new native groundcovers and understory plants such as sword fern, salal, and huckleberry, and to restore the soil by adding compost and woodchips.

LEFT: Librarian Val Easton assesses damage to Merrill Hall.

The Arboretum Foundation Native Plant Study Group (NPSG) WPA has joined forces with NPSG to help restore the knoll just east of the Winter Garden. Volunteers collected, installed, and cared for native plants that were obtained from a King County salvage site. Additional volunteers from Temple Beth Am and McGilvra Elementary School helped with weeding, spreading compost and planting small ferns. At its completion, this project will serve as the prototype for further work in the Arboretum.

Arboretum Master Plan Passes

The Master Plan for the Washington Park Arboretum was unanimously passed by both the Seattle City Council and the University of Washington Board of Regents in May. After 6 years of intensive public debate and several versions, the newly-passed plan maintains its original emphasis on the plants, collections and park-like aspects of the Arboretum. The plan, envisioned to take 20 years to complete, calls for \$43 million in improvements. The collections will gradually be renovated to be more peoplefriendly, and improved trails will help visitors find destinations. The north end of Arboretum Drive will be re-routed closer to the Broadmoor fence, thus tying together the entire north end of the Arboretum. In the south end, several new ecogeographic gardens will be built. Eventually small education and curation buildings will be constructed in conjunction with the Graham Visitors Center. Currently priority items are being selected and the capital campaign will begin soon.

Summer Interns at WPA

UW student Liz Birkholz worked in the Education Department with Monica Ravin on projects for the autumn Saplings Program. Michigan State student Ryan Garrison worked with Randall Hitchin in the curation office. He conducted a field inventory of collection holdings in the northern part of the Arboretum.

Arboretum Staff Grateful for Support

The Miller Foundation granted the Arboretum \$30,000 to continue renovating the Pinetum.

The Rotary Club awarded the Arboretum Foundation a grant of \$1000 to support the Saplings Program, an environmental program for students in grades K-8. This spring over 2000 students participated in the program.

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CENTER FOR URBAN HORTICULTURE AUTUMN 200

VO UNEWS AND OPPORTUNITIES

Thank you. Thanks to the hundreds of people who called to offer help after the fire! The students, staff and faculty at the Center appreciate all the help we received during this difficult time. Even if we have been unable to take you up on your offer, it means a lot to us that you made it. We are grateful to everyone who has been so supportive during this time.

CUH Reception Desk Volunteers Urgently

Needed: Interact with visitors, faculty, staff, and students while helping out with phone calls and answering general questions. Your help will be greatly appreciated, particularly for shifts on either Monday or Friday, either a half or whole day. Call Ray Larson at 206-616-9113 for more information.

Herbarium Volunteers are needed to collect plant specimens from Arboretum plants. This takes only a few hours every week or two to search for plants in fruit or flower. Arboretum maps and plant lists will be provided. Contact Erikka Pearson at 206-685-2589 or e-mail her at epearson@u.washington.edu.

In Search of Urban Plant Hunters: The Otis Douglas Hyde Herbarium is interested in documenting occurrences of weeds in Washington. We are looking for a few good plant hunters to walk through city parks, neighborhoods, and industrial areas in search of weeds. Contact Erikka Pearson at 206-685-2589 or epearson@u.washington.edu.

Tuesdays in the Garden: Work with the Arboretum staff every Tuesday from 12:30 to 3:30 p.m. to help provide essential garden care. Tasks vary with the season. Enjoy and help tend to the wonderful plants in the Arboretum! Call Chris Pfeiffer at 206-328-4182 for information and to sign up.

Volunteer Groups needed at the

Arboretum: Community service groups are a vital source of support in caring for Arboretum plant collections and managing invasive weed problems. Many hands make light work. Arboretum staff lead



groups at a ratio of one staff person per 15 to 20 volunteers. Work parties can be scheduled throughout the year. Call Chris Pfeiffer at 206-328-4182 for more information or to sign up.

WPA Information Desk Volunteers

Needed: Greet visitors, share your enthusiasm, answer questions, and interact with staff and other volunteers in the stimulating environment at the Arboretum. Shift times are either half or whole days, once a week. Call the Building Manager at 206-543-8800.

Work with Youth in Garden Sites: Seattle Youth Garden Works is currently in need of caring adult volunteers to work with youth in their South Park and University District garden sites. Call the SYGW office at 206-525-1213, extension 3131.

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AND PROGRAMS

Landscape Design Basics

DATES & TIMES: Five-Part Course: October 2, 4, 9, 11

at 7 to 9 p.m., and October 6 at 9 a.m.

to noon

INSTRUCTOR: K

Keith Geller, Landscape Architect

LOCATION:

Douglas Classroom, CUH

FEE:

\$140; pre-registration required, class

size limited

Learn the principles and mechanics of design, site analysis, selecting plants, and more. This course is intended for students at all levels of expertise. It includes homework assignments in addition to the lectures and field trip.

Garden Tour to the Elisabeth C. Miller Botanical Garden

DATE & TIME: Wednesday October 3, 1 to 5 p.m.

GUIDE: Elisabeth C. Miller Garden staff

LOCATION: Meet at east parking lot, CUH

FEE:

\$27, pre-registration required. Includes

transportation

Join us as we visit one of Seattle's most stunning gardens for fall color. Betty Miller collected rare and unusual woody plants from around the world and crafted them into a garden that combines many unique specimens in a woodland setting.

A Street Tree Primer

DATE & TIME: Wednesday October 17, 7 to 9 p.m.

INSTRUCTOR: Nolan Rundquist, City of Seattle

Arborist

LOCATION: NHS Hall, CUH

FEE: \$25 general public, \$22 Arboretum

Foundation members; pre-registration

required

This is your chance to learn all about street trees and how to select, plant, and care for them. In this two-hour class, you will learn how to select the best trees for your site, the steps to take to get a permit from the City of Seattle, how to plant a tree, and how to ensure long-term health of trees once they're planted.

The Naming of Plants

DATES & TIMES: Two-part course: Thursdays October 18

and 25, 7 to 9 p.m.

INSTRUCTOR: Marty Wingate, Horticulturist and

Garden Writer

LOCATION: Douglas Classroom, CUH

FEE: \$30 general public, \$27 Arboretum

Foundation Members; pre-registration

required

This popular class is back again. Learn the origins of plant names, and clear up the mysteries of pronouncing those names in this class for beginners. You will receive a take-home list of references and definitions for future use. This program is useful for those who wish to participate in the Arboretum Plant Study Program, other plant identification classes, or if you just want to impress your friends with your plant knowledge.

Native Seed Collection and Storage

DATE & TIME: Saturday October 20, 9 a.m. to noon
INSTRUCTOR: Barbara Selemon, CUH Plant Propagator

LOCATION: Douglas Classroom, CUH

FEE: \$30 general public, \$27 Arboretum
Foundation Members; pre-registration

required; class size limited

This is a hands-on class for beginners who want to learn how to collect, clean and store seeds of selected native species. The class will focus on herbaceous plants, but will include some woody plants as well. Come prepared to walk around the CUH grounds to collect seed, head back to the classroom for a demonstration of seed cleaning methods, and go home with new techniques for your own use.



Renovating the Overgrown Yard

DATE & TIME: Tuesday October 30, 7 to 9 p.m. INSTRUCTOR: Pat Roome, Landscape Designer LOCATION: Douglas Classroom, CUH

FEE: \$25 general public, \$22 A

\$25 general public, \$22 Arboretum Foundation Members; pre-registration

required

This practical workshop will offer several ways to increase the beauty and effectiveness of your established landscape while decreasing the maintenance it requires. Participants are invited to bring three slides of their property to share with the class for general discussion of design options.



Gardening in Four Layers

DATE & TIME: Wednesday November 7, 7 to 9 p.m.

INSTRUCTOR: Carrie Becker, Garden Designer,

Instructor, and Consultant

LOCATION: Douglas Classroom, CUH

FEE: \$25 general public; \$22 Arboretum

Foundation Members; pre-registration

required

This lecture/slide show will discuss how the complete garden is constructed in layers, from trees down to bulbs. Instructor Carrie Becker will also discuss the dimension of time as a factor in good garden design. You will learn how to maximize plant health, and come away with some recommended plants for each layer.

Wild Plants of Greater Seattle

DATE & TIME: Thursday November 15, 7 to 8:30 p.m. INSTRUCTOR: Arthur Lee Jacobson, Author and

Tree Expert

LOCATION: Douglas Classroom, CUH

FEE: \$25 general public; \$22 Arboretum

Foundation Members; pre-registration

required

The author of *Trees of Seattle* has written a new book, *Wild Plants of Greater Seattle*. In this lecture you will learn about both the native and naturalized flora of Seattle and nearby areas. More than 1200 species grew or grow wild here, a wonderful kaleidoscope ranging from rare native wildflowers to escaped garden ornamentals and terrible weeds. Don't miss this chance to ask your questions about the wild plants around us!

Arboretum Plant Study

Enjoy a walk through the Arboretum and learn about the plants that live there. Fifteen plants will be covered in each class, with discussion and handouts providing information on plant identification, selection, cultivation, and function in the landscape.

Autumn, Section A:

DATE & TIME: Saturday October 27, 9 a.m. to noon INSTRUCTOR: Laura Zybas, Rare Care Program

Coordinator

DEPART FROM: Graham Visitors Center, WPA

FEE: \$22 general public; \$20 Arboretum

Foundation Members; pre-registration

required, class size limited

Section A will cover rare and endangered plants being grown in the Arboretum.

Autumn, Section B:

DATE & TIME: Saturday November 17, 9 a.m. to noon INSTRUCTOR: Randall Hitchin, Arboretum Plant

Registrar

DEPART FROM: Graham Visitors Center, WPA

EE: \$22 general public; \$20 Arboretum

Foundation Members; pre-registration

required, class size limited



practical gardening lectures

These lectures and demonstrations for beginning gardeners are planned jointly with the WSU Cooperative Extension Community Horticulture Program. They are presented by Cooperative Extension staff and experienced WSU Master Gardeners.

Composting for Annual and Perennial Beds

DATE & TIME: Monday October 15, 7 to 8:30 p.m.
INSTRUCTOR: Sally Anne Sadler, Urban Food Gardeners

Program Coordinator

LOCATION: Douglas Classroom, CUH

\$10; pre-registration required

Fall is a great time to amend your soil in order to save water and grow healthier plants. You can do this with homegrown compost. Learn how to create compost in your backyard with a minimum of space, time, and effort.

Landscaping with Native Plants

DATE & TIME: Thursday November 8, 7 to 8:30 p.m.
INSTRUCTOR: Allen Davenport, Master Gardener
LOCATION: Douglas Classroom, CUH
FEE: \$10; pre-registration required

Join Master Gardener Allen Davenport as he explains how you can make your yard a haven for all species, not just the human kind. He will show slides of native plants as well as native plant gardens, and discuss what native plants are and why you should use them.

youth and family programs

For more information or to schedule any of the following programs, please contact the Arboretum Education Office, Monday through Friday, 9 a.m. to 5 p.m. at 206-543-8801.

Arboretum Family Packs

Looking for some autumn fun? Check out one of our Family Packs designed for groups of 5 or fewer. Investigate the wonders of the Arboretum using the self-guided pack program, which comes with easy-to-follow activities, maps, field guides, games and more. Family Packs are available year-round from 10 a.m. to 3 p.m. at the Graham Visitors Center Front Desk. The two-hour rental fee is \$5. FREE to Arboretum Foundation Members and Arboretum Guides.

FAMILY TREE PACK Investigate the wonders of an urban forest. This pack is full of suggested activities: use magnifiers and field guides to look at trees more closely, learn the parts and functions of a tree, investigate exotic leaves and cones or learn about pollination by doing it yourself!

WETLAND WONDERS Take a safari to Foster and Marsh Islands along the Waterfront Trail. Go on a wetland scavenger hunt, collect aquatic insects and play games that help to demonstrate why wetlands are important.

Arboretum Explorer Packs

Great for scouts, camps, daycare and other youth groups. Lead your own group on an exploration of this 230-acre living museum. Explorer Packs are filled with fun activities, games, maps and equipment for investigating. Explorer Packs are available year-round from 10 a.m. to 3 p.m. with a required two-week pre-registration. A two-hour rental fee is \$15. Explorer Packs are designed for 15 kids working individually or for 30 kids working in pairs.

TREE-TECTIVE Come sleuthing in the Arboretum and learn amazing facts about trees. This pack includes hand lenses, magnifiers, field guides, games and even "tree cookies!"

MARSH MADNESS Investigate the amazing critters and plants that make the wetland their home. This pack includes dip nets, aquaria, field guides, scavenger hunts and more.

!!NEW!! AUTUMN ADVENTURES This new Explorer Pack topic has a unique focus on changes occurring over short (seasonal) and long (millions of years) time periods. Search for living fossils at the arboretum. Learn how leaves change color with a chromatography experiment. Come check out this exciting new Explorer Pack!

Self-Guided Learning Opportunities

Use the Arboretum as your outdoor classroom. This 230 acre, centrally located urban forest offers a wealth of study materials and experimental opportunities. Education Department staff will assist you in planning your visit by offering information on specific subject areas and plant collections free of charge. We request that all self-guided tours first check in, either by calling 206-543-8800 or stopping by the Graham Visitors Center.



Saplings School Program Tours

Explore the Arboretum with trained guides! School tours are Monday through Friday, 10 to 11:30 am. The cost is \$2.50 per child (chaperones are free). Two adult chaperones per 15 children are required. Scholarships available. All of Sapling's curricula are aligned with the state's Essential Academic Learning Requirements. The fall is a busy time at the Arboretum so remember to book your reservations at least three weeks in advance.

Grades K-2: Discover Plants

Younger students gain exposure to the wonderful world of plants by using characteristics to categorize living things. Students will compare and contrast similarities between plants and people as they learn what each needs to grow and be healthy.

Grades 3-6:

Life Cycle of a Plant - Fantastic Fall

As seasons change, so do the plants around us. Learn how fallen leaves cycle the nutrients back to the trees. Explore seed production and dispersal, photosynthesis and the reason for leaves changing color. Discover the secrets of autumn as you learn about the life cycle of plants from flower to fruit.

Grades 3-8: Native Plants & People

What is a native plant? Students will learn to identify several northwest native plants. Discover the historical importance of native plants to the Coast Salish people. Students will learn how native plants were used in daily life through discussion, by using hands-on artifacts and role-playing activities.

Grades K-8: Wetland Ecology Walk

Explore the complex world of a wetland ecosystem. Learn firsthand about various habitats around the Arboretum. Foster Island provides a unique opportunity for students to study an urban wetland up close and discover the importance of these natural systems.

Grades 3-8: Landscape Design

A hands-on class that teaches the basics of designing your own garden. Uses plants that are appropriate for the season.





arboretum guided tours

Enjoy the seasonal splendor of the Arboretum with its fabulous fall foliage and subtle beauty of leaves, bark and berries. Clubs, senior centers and community groups are encouraged to sign up for these guided 60-90 minute walks. Topics include plants of seasonal interest, Foster Island ecology, native plants, and ethnobotany. Arboretum staff guide these tours between 10 a.m. and 3 p.m., 7 days a week, year-round. Fees are \$15 per group of 15 or fewer (minimum 10); \$10 for Arboretum Foundation members. Call 206-543-8800 to reserve a guide; three weeks advance reservation required.

Weekend Walks at One

These weekend walks highlight areas of the Arboretum and collections with seasonal interest. Walks depart from Graham Visitors Center every Saturday and Sunday at 1 p.m. Not available in December, on holidays, or on home football game days. Call ahead to ensure a weekend tour, 206-543-8801.

Continued from page 7

any immediate threats to the population. This information is recorded to aid in the plant's protection or recovery plan. Our volunteers are the "first line of defense" for Washington's rare plants. Next year we will greatly expand the number of sites and volunteers. Applications for volunteers can be found on our website at http://depts.washington.edu/rarecare.

Celebrating Wildflowers Event Canceled

Another set-back from the fire is that we had to cancel our Celebrating Wildflowers event that we had scheduled at the Woodland Park Zoo. However, graduate student Anya Levy-Smith is developing a curriculum and activities for all age groups so that next year's event will be bigger and better. Look for updates this winter.

Miller Foundation Funds Seed Vault

Two days before the fire we received fantastic news from the Miller Charitable Trust. They have agreed to fund a long-term seed storage facility in the Douglas Research Conservatory. This seed vault will be fire, flood, and earthquake proof to protect the seeds of rare plants and restoration plants throughout the Northwest. This facility will be the largest of its kind in the Pacific Northwest making us leaders in preserving plants and germplasm for the future. Construction will be underway soon and we hope to have the facility up and running by the first of the year.

FOR AUTUMN 2001

Ornithological Society, 7 p.m., CUH Iris Society, 7:30 p.m., CUH

Landscape Design Basics (part 1), 7 p.m., CUH

Garden Tour of Miller Botanical Garden, 1 p.m., meet at CUH

WA Butterfly Association, 7 p.m., CUH

Landscape Design Basics (part 2), 7 p.m., CUH

Landscape Design Basics (part 3), 9 a.m., CUH

Orchid Society, 7 p.m., CUH

Landscape Design Basics (part 4), 7 p.m., CUH Puget Sound Mycological Society, 7:30 p.m.,

Northwest Horticultural Society lecture, 7 p.m., CUH

Great Plant Picks, noon, CUH
Landscape Design Basics (part 5), 7 p.m., CUH
Rock Garden Society, 7:30 p.m., CUH

Composting for Annual and Perennial Beds, 7 p.m., CUH

Seattle Rose Society, 7:30 p.m., CUH

A Street Tree Primer, 7 p.m., CUH

The Naming of Plants, 7 p.m., CUH Audubon Society, 7 p.m., CUH

Native Seed Collection and Storage, 9 a.m., CUH

Northwest Perennial Alliance Lecture, 1 p.m., CUH

Puget Sound Bonsai Assoc., 7:30 p.m., CUH

Association for Women in Landscaping, 6:30 p.m., CUH

The Naming of Plants, 7 p.m., CUH

Arboretum Plant Study, Fall Section A, 9 a.m., WPA

Renovating the Overgrown Yard, 7 p.m., CUH

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Ornithological Society, 7 p.m., CUH **Iris Society,** 7:30 p.m., CUH

Gardening in Four Layers, 7 p.m., CUH **WA Butterfly Association,** 7 p.m., CUH

Habitat Gardening with Native Plants, $7~\mathrm{p.m.}$. CUH

Rock Garden Society, 7:30 p.m., CUH

Orchid Society, 7 p.m., CUH

Puget Sound Mycological Society Lecture, 7:30 p.m., CUH

Northwest Horticultural Society Lecture, 7 p.m., CUH

Wild Plants of Greater Seattle, 7~p.m., CUH Audubon Society, 7~p.m., CUH

Arboretum Plant Study, Fall Section B, 9 a.m., WPA

Northwest Perennial Alliance, 1 p.m., CUH
Cascade Cactus and Succulent Society, 2 p.m.,
CUH

Seattle Rose Society, 7:30 p.m., CUH

Puget Sound Bonsai Association, 7:30 p.m., CUH

Association for Women in Landscaping, 6:30 p.m., CUH

Holiday Decorating from the Garden and Garage, 7 p.m., CUH

Holiday Decorating from the Garden and Garage, 9 a.m., CUH

Ornithological Society, $7~\mathrm{p.m.},~\mathrm{CUH}$

WA Butterfly Association, 7 p.m., CUH **WA Native Plant Society,** 7 p.m., CUH

Orchid Society, 7 p.m., CUH

Puget Sound Mycological Society, 7:30~p.m., CUH

Rock Garden Society, 7:30 p.m., CUH

FOR CLASSES AND PROGRAMS

To Register: Please complete and return the Registration Form, along with your payment to the Center for Urban Horticulture.

Refunds: Requests for refunds on events not attended must be made in advance in writing, by phone, fax, or in person. Requests received fewer than 7 days from the first class meeting have a 25% handling fee deducted. No refunds can be made after the first class meeting. If a program is cancelled for any reason, a full refund will be made to all enrollees. Refunds may take four weeks to process.

Returned Checks: An \$18 service fee will be charged for returned checks.

Special Needs: To request disability accommodation, please contact the Disability Services Office at least ten days in advance of an event: 206-543-6450 (voice); 206-543-6452 (TTY); or by e-mail at dso@u.washington.edu.

Class Locations and Parking: Program locations are listed with each program description. The Graham Visitors Center at Washington Park Arboretum is located at 2300 Arboretum Drive East. Douglas Classroom, NHS Hall and the other meeting facilities at Union Bay are located at 3501 N.E. 41st Street. Prepaid parking is located adjacent to the buildings.

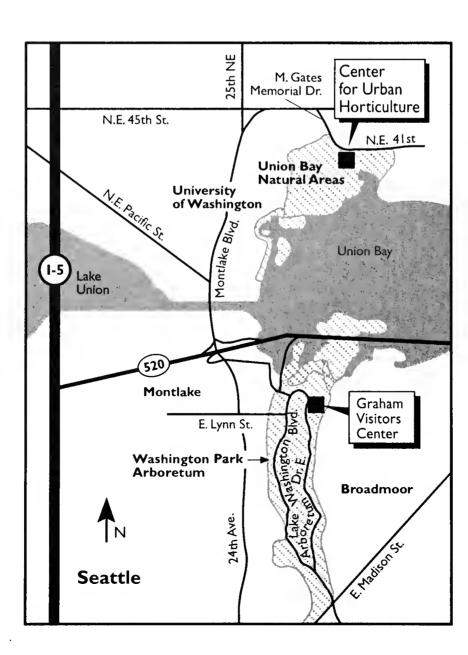
Center for Urban Horticulture

3501 NE 41st Street Box 354115 Seattle, WA 98195-4115 206-685-8033 (phone) 206-685-2692 (fax) www.urbanhort.org

Washington Park Arboretum

Box 358010 Seattle, WA 98195-8010 206-543-8800 (phone) 206-543-8893 (fax) http://depts.washington.edu/wpa/

2300 Arboretum Drive East



PROGRAM	FEE	AF MEMBERS	# SPACES	TOTAL FEE
HORTICULTURE PROGRAMS AT CUH	-			
Landscape Design Basics	\$140			
Miller Garden Tour	\$27			
A Street Tree Primer	\$25	\$22		
The Naming of Plants	\$30	\$27		
Native Seed Collection & Storage	\$30	\$27		
Renovating the Overgrown Yard	\$25	\$22		
Gardening in Four Layers	\$25	\$22		
Wild Plants of Greater Seattle	\$25	\$22		
PRACTICAL GARDENING LECTURES	-			,
Composting for Annual/Perennial Beds	\$10			
Habitat Gardening with Native Plants	\$10			
ARBORETUM PLANT STUDY				
Section A: October 15	\$22	\$20		
Section B: November 17	\$22	\$20		
SPECIAL EVENT				
Holiday Decorating from the Garden and Garage	\$70			

PAYMENT			
Check (payable to University of Washington)	○ Visa	MasterCard	American Express
CREDIT CARD NUMBER			EXPIRATION DATE
NAME ON CARD			
GENERAL INFORMATION			
NAME			
ADDRESS		CITY	STATE ZIP
DAY PHONE	,	EVENING PHONE	
FAX		EMAIL	

TOTAL FEE

Mail payment and registration to: Urban Horticulture Courses

University of Washington Box 354115 Seattle, WA 98195-4115

You may also register in person at: Union Bay campus 3501 NE 41st Street Mon.-Fri., 8:00 a.m. to 5:00 p.m.

Registrations are filled in the order received. Enrollment is limited. Classes fill rapidly, so register early.



FAX

director's notes

May was a month of incredible contrasts.

The Seattle City Council and UW Board of Regents both voted unanimously to approve the Arboretum Master Plan. The Center hosted the College's annual scholarship meeting, surrounded by beautiful gardens and perfect weather.

My life changed forever on May 21 at 6 a.m. when my wife woke me up saying "Tom, CUH is burning!" She had left out the rest, which was "It is all gone." As I drove to the Center I tried to convince myself that it was minor. I wondered if I had left something on that caused the fire. Nearing the Center what emerged through the trees were the telescoping antenna of five tv trucks, 33 fire trucks and a mountain of spaghetti-like fire hoses. The faces of staff said it all: This was very bad! And it was. Merrill Hall was damaged beyond repair.

Merrill Hall is the main building for CUH. It housed the Miller Library, research labs, faculty, staff, student and cooperative extension offices. In my office, computers and backup files, notes, books, 1000 slides, hundreds of records, theses and dissertations, 30+ years of work, were gone.

But we move forward. The Center is composed of remarkable people. Our supporting community came together to react, to reclaim and to renew. Volunteers from within and outside the University have enabled us to recover and have provided precious support of untold magnitude. Their work, their faces and their altruism will be remembered as we rebuild.

TOM HINCKLEY, DIRECTOR, CENTER FOR URBAN HORTICULTURE

UNIVERSITY OF WASHINGTON CENTER FOR URBAN HORTICULTURE

The CUH mission is "to apply horticulture to natural and human-altered landscapes to sustain natural resources and the human spirit."

- Continuing and Public Education
- Douglas Research Conservatory
- · Elisabeth C. Miller Library
- · Otis Douglas Hyde Herbarium
- Undergraduate and Graduate Education
- · Union Bay Gardens and Natural Area
- · Rare Plant Care and Conservation
- · Washington Park Arboretum
- · Sustainable Community Landscapes

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URBAN HORTICULTURE NEWSLETTER, VOL. 18, NO. 4

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Jean Robins, Pragram Caardinatar
Sandra Kirchner, Outreach Assistant

Monica Ravin, Educatian Caardinatar Assistant (Yauth & Cammunity Outreach)

Shawna Hartung, Arbaretum Education Assistant

CUH/WPA Building & Rentals Management Staff:

Becky Johnson, CUH Facilities Manager Ray Larson, CUH Assistant Facilities Manager



CENTER for URBAN HORTICULTURE

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