Undergraduate Research at the Garden

This Spring at the University of California Botanical Garden eight UC undergraduates will help launch a brand new research effort called FLASH. The program, whose acronym stands for Fire Landscape Safety for Homeowners, arose to meet several distinct needs. The first is to provide an effective arena for undergrads who want to do research within the time frame of a semester or so. The second is to contribute to the firescape literature by conducting rigorous tests of fire retardant properties using ornamental woody plants. We believe that the program is timely in both regards.

Most of the students in the program are juniors who come to us from the campus’ various biology or natural resource departments. Having emerged from the introductory biology series for majors (a requirement for this research project) and several upper division courses in biology, they are eager to put to use what they have learned in the classroom. They want very badly to get out in the field or laboratory to conduct some research on their own, with supervision. But, although UC Berkeley is one of the world’s greatest research institutions, with a distinguished scientific faculty, the sheer number of undergraduates, not to mention faculty commitments, allow relatively few opportunities for supervised individual research at the undergraduate level. Students in Biology 1 laboratory sections and in other campus classes that are held at the Garden often express a desire to do scientific research here.

Previous student research at the Garden

The Botanical Garden is a fine laboratory for the scientific study of plants (and even animals), especially at the levels of organismal, population and community biology. Over the years countless undergraduates have conducted class projects at the Garden for various courses in botany, entomology and zoology. While not semester-long research projects, many of these projects had merit, and defined areas in which longer term projects could be sustained. When I joined the Garden staff in 1991, I supervised an undergraduate, Linda Pollack, who had taken a leave of absence for a semester and could devote many hours a week to her project. She produced a fine research paper on the pollination of Coreopsis gigantea.

“FLASH” consultant Carol Rice and researchers David Kwan and Carmia Feldman locate a fire safe plant for the project. (photos by Richard Anderson)
in the Channel Islands section. Subsequently, several students have conducted work at the Garden over an entire semester: Frank Hsu took on another pollination project on Ceanothus, complete with an insect collection, and the following semester wrote a descriptive paper on hummingbird interactions in our Salvia collection. And David Kwan has been developing a fine project on coast live oak seedlings and optimal edaphic conditions.

But the problem we were beginning to confront was logistics; we found that it was taking the better part of the semester just to get the project up and running, and with five to ten new undergraduates knocking on my door each semester wanting to do research, we sorely needed a project that could absorb all this talent without designing a new project for each student.

Independently, I had been meeting with Carol Rice, of Wildland Resource Management, who has been a primary consultant for the University and other agencies on the subject of firescaping and land management for fire safety. Conversations with Carol and others led to the discovery that nationwide very little rigorous work has been done in testing woody ornamentals for relative fire retardance. Most of the work has focused on native chaparral and trees that are found in parkland, forests and woodlands. Even the lists distributed by various institutions are qualitative and subjective, and as a result, nurserymen and landscape designers have no truly objective criteria on which to base their recommendations of fire-retardant woody plants.

Undergrad researcher Frank Hsu stalks one of his bee species for the Ceanothus project.

FLASH bursts onto the scene

Here was our project! Our research would focus on flammability measurements of common horticultural plants in northern California, both low-tech (fuel-loading and fuel moisture), and high-tech (ignition properties and chemical composition) analysis. Once we established its logistics, students could cycle in and out of the research project every semester, each taking on a separate plant species along with his/her own distinct sub-project. The project has been enthusiastically received by workers at the U.S. Department of Agriculture, Forestry (Pacific Southwest Research Station), the California Department of Forestry, East Bay Municipal Utility District, nurserymen's associations, university people and state and local fire officers. All of these researchers recognize that with the recent infernos in Malibu, Ventura and Riverside, fire is very much on the minds of Californians.

We have subsequently received a large grant as well as a generous donation to develop this project, and have hired Carmia Feldman to help coordinate the research. Carmia first developed a detailed database that used exhaustive lists of fire-retardant and flammable plants from over 18 different agencies in California (e.g., EBMUD, Sunset Magazine, California Department of Forestry). When she cross-referenced these lists, she found over 20 taxa that were listed by one agency as fire-retardant, and listed by a different agency as highly flammable. These inconsistencies suggest a lack of experimental or reporting rigor, so our first efforts will deal with some of these controversial ornamental plants.

You can participate

Many of us choose to live close to wildland areas, which exposes us to the threat of wildfire. By properly choosing and maintaining our landscape plants, we may be able to reduce this threat. The FLASH project will be studying local landscape plants as they are maintained in home gardens, and so we will be relying on help from our neighbors. There are two ways you can participate in this significant study: (1) by donating an entire plant from your garden (our biomass and chemical research); (2) by donating leaf and twig samples from a plant in your yard over the course of one fire season (our fuel and ignition studies). If you live in the Berkeley or Oakland area,
FROM THE DIRECTOR

It’s A Changing World

During a historical presentation by Dr. Lincoln Constance and Garden Manager Daniel Campbell, I was reminded of something important. When the UC Botanical Garden was founded over a century ago, the reasons for setting up a botanical garden were different from those of a decade ago, and different from the reasons of a decade down the road. Seems to me that the best reasons are still before us. In a world of rising population, limited resources, and accelerating environmental degradation, beautiful floral havens should rise in value. And increased value is good, because we are going to have to rely on the communities we serve to help support us. WE must earn our keep. The traditional sources of funding for botanical gardens are slipping. Garden budgets allocated by universities, cities and counties are dwindling. Seeking large federal grants is not as productive as it used to be. Old endowments have been eroded by inflation. Most gardens cannot sit back and conduct business as usual.

Private support for botanical gardens is a time-honored tradition. But the nature of the support is changing, and we need it more than ever. The UCBG is solidly supported by “standard” funding through Cal, which covers all salaries and most other expenses. And private support is what gives us our zip, allows us to pursue ambitions and to strive for excellence. Money is not the whole story—I’m referring to all kinds of help: docents who lead tours, folks who provide us with contacts and open doors, and volunteers who perform umpteen diverse and demanding tasks.

A couple of examples are irresistible. Most of our private support comes through the Friends of the UCBG, who help raise funds, oversee volunteer programs, and lend a hand in too many ways to enumerate. Under their auspices, the gift shop generates revenue and good will at the same time. The volunteer propagators (we calculated in a recent conversation) generated roughly 1/3 of our non-salary operating budget. That’s one-third, generated at virtually no monetary expenditure. The Friends have raised and managed funds for a series of projects and improvements, well exemplified by the renovation of the Meeting Room. The elevation of our accomplishments attributable to the Friends is more than substantial.

And there are additional forms of private support. For instance, the San Francisco Foundation and the Sidney Fund, among other granting agencies, have made possible our lively educational programs for school children and the undergraduate research program. Maybe there was a time when public gardens could offer their benefits to the community on a take-it-or-leave-it basis. Those days are over. Now a public garden and those it serves have to work together, and that’s a terrific opportunity for both sides.

—George Rogers
End of season bulb sales look appealing. Daffodils, jonquils, freesias and Dutch iris are all right if planted this late. However, tulips and hyacinths may flower this year but probably will not do very well next year. They need an early start so they are subjected to more cold during their growing season.

Winter cleanup jobs should be underway. Rose pruning, though not the most pleasant of gardening chores, needs to be done. In addition to controlling the size of the plant and shaping it, pruning is important in that it removes leaves that may be infected with black spot or rust. The fungi that are the causal agents of these diseases will develop resting stages in these leaves and will carry the fungus through the winter and start a new cycle next spring. It also is important to rake and remove all the old rose leaves near the plants because the fungi can overwinter in them. These materials can be composted if the rapid method is used, but should not be put in a standard slow pile. If putting them in the garbage gives the feeling of not conserving, bury them in the soil where it will not be disturbed for a year or more. The resting stage of the powdery mildew fungus rarely is produced here but pruning will remove the infected portions and break the disease cycle.

What about other disease problems?

The iris leaf spot fungus has an overwintering stage. If bearded irises were separated in the summer or fall, and most of the leaves cut back, there probably is no problem. However, if there are tan or brown, somewhat elliptical spots on the leaves associated with some tip dying, such leaves should be removed and treated as mentioned for the rose leaves above. Snap dragons will grow all year in this area. If rust is a problem, remove and get rid of all snap dragon plants. It’s a good idea to have a snap dragon free period for several months each year in order to break the rust cycle. If neighbors also grow snaps, then it may not do any good unless all cooperate and have a “dragon” free period at the same time. Also, check new plants from the nursery to make sure they are free of rust. Growing them from seed may be another approach.

Concern about other leaves

Questions often are asked about fallen leaves of sycamore, Modesto ash and evergreen elms if they are infected with anthracnose fungi. These fungi are different on the trees mentioned but have similar cycles. The spores must be water splashed in order to move, so there is little danger of them getting back into the trees when leaves are present to infect. The leaves can be composted using any method without danger of causing new infections.

Pruning fruit trees

Fruit trees need to be pruned each year to shape them correctly, to get best fruit production, to prevent too much fruit production, to allow good light distribution, to remove broken branches and sometimes to control diseases. Different kinds of trees need to be pruned differently. Peaches and nectarines bear fruit on one-year old wood and need severe pruning. Almonds, prunes, plums, apricots and cherries bear most of their fruits on spur wood. Apples and pears also bear on spur wood but at the terminal ends of the spurs. Cherries require very little pruning. Trees that produce fruit on spurs do so for about five years. Therefore, one-fifth of the branches with spur wood should be removed each year and a new branch should be allowed to replace that removed. Persimmons, most figs, quince and pomegranate bear on present season’s growth, so should be pruned accordingly. In pears, it is necessary to remove all dead branches to get rid of fireblight. Dead branches in apricots and almonds should be removed to get rid of brown rot. Also remove all dried fruit hanging in any trees that bear stone fruits.

—Bob Raabe

Would you like information about diseased plants, garden insect or weed problems? The Plant Clinic is held at the Botanical Garden the first Saturday of every month from 9A.M. to noon. Bring your plant problems there and someone will help.
BOOK REVIEWS

A New California Book Rush

Interest in California plants and landscapes has been widespread since early plant explorers sent collections of California poppies, Douglas fir and Giant Sequoias home to Europe. As time passed and travel became easier, botanists and early surveyors sent west by the U.S. government came to study and describe the uniqueness of our western plants and landscapes. These early explorers were followed by ranchers and schoolmarms, no less observant of this new environment than the people who had been there before them. As life in the West became more settled, colleges and universities were founded and a rush was begun to write about the new scientific discoveries made in California. Three generations ago (1923) Willis Linn Jepson’s *A Manual of the Flowering Plants of California* was published and it became the standard reference on California plants for more than a generation of botanists and students. In 1959 it was replaced by the up-to-date information in *A California Flora* by Munz and Keck, which has itself been replaced by the new (1993) *The Jepson Manual: Higher Plants of California*, Jim Hickman, editor.

Now, simultaneously with the publication of this new *Jepson Manual* and 70 years after the first *Jepson Manual* came out, there has been an “information explosion” of important new books about California and its plants and landscapes. This explosion will give all of us a lot to read, study and think about for another generation.

- **CNPS Inventory of rare and endangered vascular plants of California 5th ed.**
  
  Mark W. Skinner and Bruce M. Pavlik; Calif. Native Plant Soc., Sacramento, Ca., 1993; 264 pp.; photos, line drawings, indexes by county, family, CNPS priority list. Softcover, $22.95.

- **California’s changing landscapes, diversity and conservation of California vegetation**
  

- **The great Central Valley, California’s heartland**
  

- **The natural history of Big Sur**
  
  Paul Henson and Donald Usner, illustrated by Valerie A. Kalls; Univ. of Calif. Press, Berkeley, Ca., 1993. 416 pp., maps, drawings, photos. Hardcover, $30.00.

- **A natural history of California**
  

- **Oaks of California**
  
  Bruce Pavlik, Pamela Muick, Sharon Johnson and Marjorie Popper, illus. by Allison Atwill; Cachuma Press, Santa Barbara, Ca., 1991; 184 pp., photos, maps, watercolor illus., travel guide, glossary, index. Hardcover, $29.95; softcover, $21.95.

- **The Jepson manual: higher plants of California**
  
  ed. by James Hickman; Univ. of Calif. Press, Berkeley, Ca., 1993; 1,400 pp., 2,200 illus., glossary, index. Hardcover, $65.00. (see review, Spring 1993 NEWSLETTER).

- **CNPS Electronic Inventory**
  

  A computer application which provides instant, simplified access to the detailed information in CNPS’s Inventory of rare and endangered vascular plants of California. This self-installing program requires no additional hardware, and requires 8 megabytes of hard disk space. Available for MS DOS compatible systems only.

- **Terrestrial vegetation of California**
  
  ed. by Michael Barbour and Jack Major; Calif. Native Plant Soc., Sacramento, Ca., 1988; 1,036 pp., tables, graphs, figures, literature citations, new supplement, references, index. Hardcover, $55.00.
Another Dazzling Spring

Excellence is the one feature common to all of the diverse programming at the Botanical Garden. Many other organizations may offer competitive programs, but discerning Friends and the public too have come to expect more from a UC Garden program. With this in mind, the folks at the Program Committee and Education department have developed programs for the first half of 1994. We believe that this year’s slate of programs meet these high standards, and we hope you agree! Featured below are some highlights.

For the nature enthusiast

Dr. Glenn Keator, a highly respected and well-loved botanist, will launch the year’s classes with a course on ferns and fungi, called Cryptogamic Botany. This course is the first that the Garden has sponsored on ferns, and Glenn’s hands-on workshop will be complemented by visits to our glass houses. Later in the Spring, Glenn will also offer his course on Wildflower Identification, so if you have ever wanted to learn the native flora—from family to species, with stories and woody lore—and where they can be found, you will want to join Glenn’s course. He kicks it off with a brief introduction to the *Jepson Manual*.

Our very popular Bird Breakfast will take place in late Spring, replete with a wonderful breakfast prepared and served by some of our fine volunteer chefs, and served following a stimulating morning in the Garden searching out its avifauna.

For the geography and history buff

Join Dr. George Rogers, Garden Director, for the fascinating story of George Rumphius, seventeenth century plant explorer, botanist and collector par excellence, who discovered the East Indies for botany, and did most of his work having been blinded in an accident. Later in the month, Glenn Keator will take his students on an exploration of biogeography, from the fuchsias of the Americas to the origin of pineapples in Central America, and oranges in China.

If you are fleet, you might be able to take in Daniel Campbell’s armchair version of the Friends tour of Northern France, which he is offering on January 22. Daniel is an unabashed admirer of French gardens, horticulture and cuisine, and will leave your mouth watering for a Gallic adventure, botanical and otherwise.

For the artist and illustrator

A special treat this Spring, Linda Vorobik, who was a principal illustrator for the *Jepson Manual*, offers a weekend of instruction in Botanical Illustration from the basics of illustration to drawing to use of media. Linda has a significant portfolio, and was associated with both the Jepson and the University Herbaria for many years. She also has a Ph.D. in botany, and knows her way around the plants she illustrates.

Judith Corning will present her very popular *Art in the Garden* series too, starting in April, on Wednesday mornings. She encourages all levels to join her program, including beginners.

For all who love to eat and drink

The Garden is offering a triptych on stimulants this Spring: chocolate, tea and coffee. On Valentine’s weekend, for chocoholics and their co-dependents we offer Chocolate
Garden Manager Daniel Campbell oversees the completion of the new educational pond, near the Mather Grove.

Lovers with a full tasting of darks, whites and milks, with Dr. John West, UC’s renowned expert on the cacao plant, and Russell Bianchi, a witty and articulate spokesman from the chocolate industry. This extremely popular event, which has been offered annually for three years, may not be given next year, as Dr. West is leaving for Australia.

If Camellia sinensis is more your cup of tea, what better on Valentine’s Day weekend than Tea for Two, with Helene Gustafson, tea enthusiast and buyer, who has bought for Peet’s, and has traveled the world in search of fine teas.

And, at last, a Garden program on Berkeley’s favorite brew, COFFEE! with the General Manager of Peet’s Coffee Incorporated, Jim Reynolds, who will take you through the history and socioeconomics of the coffee plant, and then conduct a tasting. For all these food and drink events, enrollment is severely limited, and early reservations are strongly recommended.

For the Gardener

Martin Grantham, our very fine instructor in propagation, is conducting his intensive seed and seed treatment workshop again this March. Martin has taught advanced propagation classes at Merritt College’s horticultural program for over three years, and at the Garden for over four years; he is quite adept at his craft; the bonus is the fact that he is also one of our most articulate instructors.

Wouldn’t you like to know how to better exploit the geranium family for your own garden? Robin Parer, whose Geraniaceae Nursery in Kentfield concentrates on the family, will give a slide talk on this wonderful group of plants in April. Garden design will be a central focus of her discussion.

Mark your calendars! Christopher Lloyd, the foremost garden designer practicing today in England, will be in Berkeley on June 11 to give a short symposium on design. He is not making as many visits to the States as he once did, so early reservations are strongly recommended for those who want to hear him.

Have a glorious Spring!

—Carol Baird

GARDEN NOTES

This winter season found the staff involved in a myriad of activities. Director George Rogers gave a talk to the Friends of the Davis Arboretum on November 10th. Dr. Rogers will also instruct the Plant Taxonomy course this Spring, at the Garden. Education Director Carol Baird presented lectures to Conservation and Resources Studies courses on both biodiversity and conservation education, and led a workshop on biodiversity at Mills College on November 6th. Dr. Baird will teach a campus seminar on California biodiversity the Spring ‘94 semester, and will supervise eight undergraduate researchers in the Spring too.

Insects and weeds were on the minds of Assistant Manager Judith Finn and Horticulturist Jerry Parsons when they attended the “First Annual U.C. Davis Pest Management Conference” on December 16-17, where they learned about the latest research in pest and weed science.

The desert beckoned to Horticulturist Kurt Zadnik in early December when he and Dr. Allen Zimmerman of the Drylands Institute (Tucson, AZ) tracked down and photographed a cryptic and poorly documented cactus, Mammillaria viridiflora.

Assistant Curator Holly Forbes attended several computer courses, including one on hard disk management from San Francisco University Extended Education.

Horticulturist Peter Klement gave his wonderful annual rose pruning workshop at the Garden on January 8th, and also to residents of the Baywood Court Retirement Home in Castro Valley on January 15th.

Horticulturist Martin Grantham began his class entitled “Advanced Plant Propagation” at Merritt Community College this month (Wednesdays from 1-4 pm). Martin will also speak on plant propagation to the El Cerrito Garden Club this month.

—Holly Forbes

Both Fall and Holiday Plant Sales were well-attended; here a buyer selects an epiphyte for his collection.
Meet the Board

Three New Members Named to Friends Board

The Board of Directors of the Friends of the Botanical Garden is pleased to welcome three new members, all of whom, in very individual ways, are true, long-time friends of the Garden: Mai Arbegast, Bill Sparling, and Krishen Laetsch. All are “Old Blues,” having received either a Bachelor’s or a Master’s Degree from the University.

Honorary Trustee

Representing the Honorary Trustees, Mai Arbegast has been a practicing Landscape Architect since 1953, and taught in the Department of Landscape Architecture here at Cal from 1953 to 1967. Her professional experience includes many residential gardens, commercial projects, schools, wineries, parks, housing projects, and the preparation of management and maintenance guidelines for future botanic gardens, arboreta, zoos and cemeteries in the Bay Area, the Midwest and the Northeastern United States. Mai’s presence on the Board will be especially useful as the Garden works through its new long range plan.

Public Relations Professional

Bill Sparling, a third generation Bay Arean, has been a friend of the Garden since he was a student at Cal. He works in the public health field for the County of Alameda, but early jobs as a firefighter with the U.S. Forest Service and a packer in the High Sierra certainly indicate his interest in and knowledge of nature. In his spare time, he is learning to garden with native plants in the Oakland hills, and developing a strong preference for deer resistant plants. He is very enthusiastic about his upcoming service to the Board, during which he hopes to help the Friends “show the way” for private and public organizations that work together, and to help us broaden our appeal in the Bay Area community.

Garden Experience

Krishen Laetsch has been involved with the Garden in some capacity or other since 1969, when he was a "guinea pig" in a new educational program here. He has been a member of both the Program Committee and the Travel Committee for several years, and invented “BUG DAYS” for the Education program. He is currently Project Director for the Leadership Institute for Teaching Elementary Science (LITES), which is funded by a $2.3 million National Science Foundation grant, and in which the Garden participates. He also runs his own international sales business, and spends at least one day a week at the family farm in the Feather River area. Krishen says he grew up with informal science centers, and learned to enjoy museums of all kinds at an early age. His experience makes him an invaluable resource for us.

Everyone on the Board is excited about the infusion of fresh energy and the diversity of expertise that these three new members bring. We welcome their enthusiasm and new ideas.

—Nancy Swearengen
Friends Annual Meeting

The Annual Meeting of the Friends of the UC Botanical Garden took place on Sunday, October 10, 1993. The Honoree for this year was Elizabeth Hammond. Before the business portion of the meeting got underway, former Director and now Curator, Professor Robert Ornduff, introduced the permanent full time Director, Dr. George Rogers to the Friends. Dr. Rogers became instantly popular when he shared his desire to work with the Friends to improve the entrance to the Garden, and called it his number one project.

The business portion of the meeting included the Treasurer’s Annual Report (which will be featured in the Spring issue of the NEWSLETTER), and reports from the various Friends working committees:

- **Membership Committee:** Membership was up by 4% over last year, especially remarkable in these recessionary times. There was close to an 80% renewal rate. A New Members Breakfast, with a program headed by Peter Klement and Martin Grantham, and a behind the scenes tour, was well attended. The Friends also have decided to join the nationwide reciprocal benefit program of many gardens, to allow visitor center discounts reciprocally.

- **Major Gifts Committee:** The Meeting Room renovation project is almost completely funded, and work will start on June 1, 1994. There is now a waiting list for memorial or honorary benches in the Garden.

- **Project Development Committee:** All plans for the renovation of the Garden Meeting Room have been approved by campus, and construction is planned for June 1994. The project entails improvement of the existing Meeting Room, conversion of the glass house room into a meeting room, and construction of a terrace on the west side of the building.

- **Visitor Center:** Of the Center’s $80,000 gross income, 46% was contributed by book sales, 30% by gift revenue, and 24% by plant sales. From this, the Visitor Center was able to turn over $35,000 to the Friends main account.

- **Volunteer Honored:** The meeting was followed by a tribute to Elizabeth Hammond, a long-time volunteer who was instrumental in helping to form the Friends, and who served on virtually all committees of the Friends at one time or another. She also gave seed money for the Strawberry Creek project, and made Garden project sponsorship a family affair. Elizabeth joins Joan Mirov, Jim Jones and Myrtle Wolf in being honored for her exceptional dedication to the Garden.

---

Gladys Eaton
New Members
The Friends of the Botanical Garden welcome the following new members.

Roy Abendroth
Sara Accornero
Mr. & Mrs. L. G. Anderson
Marcelino F. Barrera, Jr.
Geoffrey & Sally Bellenger
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Suzanne Duggan
Valerie & Walt Ellenberger
A. B. Elsasser
Janet Farina
Frances C. Farmer
Jo Anne M. Frudden
Sarah & Bill Gittlen
Beryl Golden
Arthur M. & Blair H. Gray
Cynthia Green
Dore & Martha Griffinger
Suzette M. Hackett
Mary Harding & Ann Battin
Ruth & Paul Hatcher
Walt & Shirley Hauser

Jay Heminway
Kristie S. Hickman
Ann S. Higgins
Betty Hirshfeld
Penny & John Hlavac
Adam & Arlic Hochschild
Elizabeth Hogg
Tony Hyman
Dale Johnson
Ralph & Doreen Jones
Christopher Knudsen
Antoinette & Robert Koshlap
Jan Kroesen
Michele Lasagna & Gail Faber
Jim & Laura Lawrence
Fred Levinson
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Renee Linde
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D. Moorhouse
Jack P. Morris
L. & J. Mosheim
Curt & Lois Nelson
Robert M. Newhouse
Dennis & Mary Okamura
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Thomas C. & Barbara N. Parsons
Kathleen Paulist
J. R. B. Pels
Ellen J. Peterson
Norma J. Pfiefer
Vincent Piguet
Michael J. Pinkerton
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Robin Quest-Gates
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Delia Risbrough
Barbara R. Robinson
Dr. & Mrs. J. Speed Rogers
Michael & Elizabeth Schmidt
Glenn & Helen Seaborg
Robert Sellin
Lillian E. Severin
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Julie R. Stolstad
Rick Thompson
Mary C. & Kenneth M. Tom
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Vickie Van Bios
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Ruth Veit
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James A. Weber
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Tamara Williams
Mr. & Mrs. J. A. Young
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Grateful Thanks
The Friends wish to thank these donors who have made a substantial gift over and above membership.

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Special Projects

The Friends offer appreciation and thanks for gifts from these donors to support the special projects noted.

**Alan B. Harper**, for undergraduate research project FLASH

*Devs. David and Evelyne Lennette*, for the Aquatic Plant Display, in honor of Dr. Robert Ornduff

**Dr. Carol Baird**, for Garden vehicle

*California Native Plant Society, East Bay Chapter*, for the California native seed catalog

**Sidney Fund**, for *California Alive* and undergraduate research project FLASH

In Memory

The Friends offer appreciation and thanks for gifts from these donors in memory of:

**Jerry Beatty**, from Elly & Bill Bade

**Samuel H. Clark**, from Mary Nye Pierpont

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<td>INSTITUTE OF HUMAN DEVELOPMENT</td>
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**In Honor**

The Friends offer appreciation and thanks for gifts from these donors in honor of:

*Gladys Eaton*, from Jane & Nelson Weller

**Elizabeth Hammond**, from John & Josephine Shuman

**Mary Ricksen**, from Mrs. Adolphus E. Graupner, Jr.

Gifts in Kind

The Friends offer appreciation and thanks for gifts in kind.

**John Clausen**

**John D. Downing**

**Louise Gamble Harper**

**Lizzie Lee**

**Eve Nilson**

**Dr. Robert Ornduff**

**Eldon & Judy Rowe**

**Louie & Virginia Saso**

**June B. Smith**

Memberships

The Friends of the Botanical Garden offers public education programs and provides independent funding to support the many needs of the Garden. You can enjoy and support the Botanical Garden year-round by becoming a member of the Friends of the Botanical Garden.

**Membership benefits include:**

- Newsletter
- Workshops, lectures, and tours
- Discount on Visitor Center purchases
- Discount on educational classes
- Early admission to Spring Plant Sale
- Volunteer opportunities

**Friends of the Botanical Garden Membership Application**

Yes, I would like to support the UC Botanical Garden at Berkeley as a member:

- Student* $10
- Individual $25
- Family $35
- Contributing $50
- Supporting $100
- Sponsor $250
- Patron $500
- Benefactor $1000
- New
- Renewal

Name ___________________________

Address _______________________

City/State/Zip __________________

Telephone ____________________

*My employer has a matching gifts program. I have enclosed the appropriate forms.

Contributions are tax deductible. Please make checks payable to Friends of the UC Botanical Garden and mail to:

Friends of the Botanical Garden, UC Botanical Garden, Berkeley, CA 94720

*Full-time only.*
Calendar of Events

**JANUARY**

**PLANT CLINIC**
Sat, JAN 1
Bring your ill plants to see Dr. Robert Raabe. 9am-12, Meeting Room.

**ROSE PRUNING WORKSHOP**
Sat, JAN 8
January is the month to get the most out of your roses! Get a good start in our workshop; you'll learn effective rose pruning techniques, as well as proper pegging for shrub roses, from our resident rose expert, Peter Klement, of the horticultural staff. 10am-noon. Meeting Room. Members $10, non-members $15. Reservations recommended.

**A SLIDE TOUR OF NORTHERN FRANCE**
Sat, JAN 22
Garden Superintendent, Daniel Campbell, who helped lead the Friends tour to France last spring, presents a delightful, informative talk on the group's adventures, both horticultural and cultural, accompanied by slides. 7pm. Meeting Room. Members $5, non-members $8. Reservations recommended.

**RAINFOREST RAP**
JAN-MAR
Program on tropical forest ecology and conservation, for school and other groups. By reservation only. Meeting Room. Mornings. Modest group rate. Phone (510) 642-3352 for information.

**DOCENT TRAINING**
Mon afts, JAN-MAY
Our 1994 docent training program includes 18 sessions devoted to basic botany, ecology, ethnobotany and nature interpretation. Participants will have the opportunity to learn from distinguished experts, and to become intimately acquainted with the Botanical Garden. There will be plenty of time to practice giving tours as well. Phone (510) 642-3352 for information.

**FEBRUARY**

**PLANT CLINIC**
Sat, FEB 5
Bring your ill plants to see Dr. Robert Raabe. 9am-12, Meeting Room.

**CRYPTOGAMIC BOTANY**
Thurs eves, FEB 3,10,17,24
Discover the wonderful world of ferns, mosses, fungi and other spore-bearing organisms, and learn from Dr. Glenn Keator about the ways that these plants and fungi have evolved to cope over the millennia. Our first ever FERN class! 7-9:30pm, Meeting Room. Members $30, non-members $40.

**RUPHIUS THE BLIND BOTANIST OF AMBON**
Wed eve, FEB 9
Let Director George Rogers relate the story of George Rumphius, who did his botanizing in the seventeenth century, largely as an unsighted man. His travails and triumphs should be an inspiration to us all. 7-8:30pm, Meeting Room. Members $5, non-members $8.

**CHOCOLATE LOVERS: A TASTING**
Sat, FEB 12
A Valentine's Day delight with Dr. John West, formerly of the UC campus, and Russ Bianchi, an authority on cocoa and chocolate. Learn all about the botany of cacao, the history of cocoa plantations and chocolate preparation, then compare many kinds of chocolate in a delicious tasting, 1-4 pm, Meeting Room. Members $10, or two for $15; non-members $15 apiece or $25 for two.

**TEA FOR TWO**
Sun, FEB 13
Helene Gustafson, tea enthusiast and buyer, will talk about the background, lore and ceremony of tea in Western culture. In contact with tea enthusiasts from around the world, Ms. Gustafson has wonderful stories to tell about her contacts with tea experts such as Mr. Twining of Twining Teas. 3-5 pm, Meeting Room, Valentine's Day weekend. Members $10, non-members $15.

**BIOGEOGRAPHY**
Sats, FEB 19,26
Have you ever stopped to realize that fuchsias are found in the Americas, Tahiti and New Zealand and nowhere else? Or that coffee originated in Ethiopia and pineapples in Central America? Come explore the forces that govern the fascinating subject of world plant distribution and migration with Dr. Glenn Keator, in a two-part slide lecture series. 10am-noon, Meeting Room. Members $15, non-members $20.

**MARCH**

**PLANT CLINIC**
Sat, MAR 5
Bring your ill plants to see Dr. Robert Raabe. 9am-12, Meeting Room.

**SEED AND SEED TREATMENT**
Sun, MAR 13
Martin Grthan will lead a hands-on workshop on the propagation of plants from seed. Sample seed will be available; participants may also bring seeds of special interest. 12:30-3pm, Meeting Room. Members $10, non-members $15.

**PEET'S COFFEE & TASTING**
Sat, MAR 26
At last! A Garden program on Berkeley's favorite brew, COFFEE! Jim Reynolds, the General Manager of Peet's Coffee, Inc., presents a slide lecture on the history and socioeconomics of the coffee plant, to be followed by a tasting of several different types of coffee. 10am-1pm, Meeting Room. Members $10, non-members $15. Reservations recommended.

**APRIL**

**PLANT CLINIC**
Sat, APR 2
Bring your ill plants to see Dr. Robert Raabe. 9am-12, Meeting Room.

**GERANIACEAE FOR YOUR GARDEN**
Sat, APR 9
Enjoy a talk with slides given by Robin Parer, well-known Bay area expert on Geraniums and owner of Geraniaceae Nursery in Kentfield, California. 10am-noon, Meeting Room. Members $8, non-members $11.

**ART IN THE GARDEN**
Wed ams, APR 13-JUNE 1
The popular watercolor class, offered on eight Wednesday mornings from 9:30am to noon. Instructor Judith Corning welcomes all levels, including beginners. Meet at the Meeting Room. Members $55, non-member $70.

**HOW TO USE THE JEPSON MANUAL**
Sat, APR 16
So you have purchased the wonderful new Jepson Manual and find it too intimidating to use! Join Glenn Keator in an exploration of Jepson Manual basics, especially how to use its keys in the field. 10am-noon, Meeting Room. Members $8, non-members $11.

**WILDFLOWER IDENTIFICATION**
Thurs eves, APR 22,23,24
Dr. Linda Vorebik, former Principal Illustrator for the Jepson and University Herbaria at UC Berkeley, presents an evening seminar on the history and techniques of botanical illustration (open to all), and two one-day workshops on the process of scientific illustration from rough sketch to publication. Friday 7-8:30pm; Saturday (basics) and Sunday (working with final medium) 8:30am-4:30 pm with lunch, Meeting Room. Members $5, non-members $10. Reservations recommended.

**COMING ATTRACTIONS:**

**BUG DAYS**
APRIL
**BIRD BREAKFAST**
APRIL
**CELEBRATION OF CALIFORNIA BOOKS**
APRIL
**WINE COUNTRY GARDEN TOUR**
APRIL
**SPRING PLANT PREVIEW & SALE**
MAY 6 eve, MAY 7
**SOFTWOOD CUTTINGS**
MAY
**CHRISTOPHER LLOYD**
JUNE 11
**ROSE BUDDING**
JUNE

For further information on classes and events, call the Visitor Center, 642-3343. To register for classes, send checks to UC Botanical Garden. Two weeks advanced notice is necessary to accommodate individuals with special needs. No refunds the week before the class date unless class is cancelled. Pre-registration is suggested, as classes fill early.

The Garden is open every day of the year except Christmas from 9:00am to 4:45pm. Free public tours led by docents are given on Saturdays and Sundays at 1:30pm. Admission to the Garden is free.

Plants are for sale at the Visitor Center all year round.

**Friends of the Botanical Garden**
University of California
Berkeley, California 94720
Address Correction Requested

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