

## NARRATIVE

### 1. Statement of Need

The UC Davis Arboretum proposes to design and construct a new garden exhibit for the California native plant collection and to develop associated educational programming. At the same time, we will test a new model for collaborative exhibit development, interpretive planning, and public education at a university garden. We will work closely with faculty and students in landscape architecture, design, education, and several science departments to plan and construct the California Native Plant Discovery Garden and associated interpretation and education programs, including interpretive signage, cell phone tours, digital maps, hands-on Investigation Stations, and other creative teaching modalities as envisioned by students and community volunteers. The proposed project is the Arboretum's top priority for 2010-12 and will help us meet several strategic goals.

Relation to the Arboretum's strategic plan: In 2001, we surveyed more than 4,000 people and conducted 60 in-depth interviews and ten focus groups to determine the interests and needs of our audience. These included several major audience groups: faculty, students, and staff at UC Davis; educators at K-12 schools, community colleges, and other institutions; professional research scientists, including botanists, horticulturists, and ecologists; home gardeners and plant enthusiasts; Arboretum members and volunteers; and local residents (see Strategic Plan Summary). The results of this audience research guided the development of our Ten-Year Plan 2002-12. This project clearly advances our mission and the strategic goals of the Ten-Year Plan and meets the needs of our community by enhancing the garden, educating visitors, and supporting academic teaching, research, and public service. Subsequent audience surveys conducted in 2006 and 2008 indicated that our visitors are particularly interested in learning about native plants, sustainable gardens, and California ecology.

Goal 1 (**provide an exemplary place of beauty, learning, and environmental stewardship**) addresses the physical site of the Arboretum, its plant collections and exhibits. The proposed project includes a new garden exhibit that will enhance the experience of visitors and help us meet the highest standards of excellence in interpreting and teaching from our extensive California native plant collection.

Goal 2 (**inspire and educate visitors about the natural world and appropriate horticulture in California's Central Valley**) addresses the Arboretum's educational mission. This project will add a vibrant new layer of interpretation to the California native plant collection—developed through collaboration with University researchers, faculty and students—along with expanded educational programming and links to academic teaching and research. The project will provide opportunities for hands-on experiential learning for UC Davis students, K-12 students, families and other community members.

Goal 3 (**strengthen the Arboretum's museum function and scientific and academic value**) reflects the Arboretum's role as a resource for teaching and research at the University of California, Davis and beyond. The Arboretum's documented collection has been used by more than 100 different University classes and is the focus of numerous on-site research projects. We are collaborating with faculty and research scientists to ensure that the proposed garden exhibit and interpretive program will support and enhance campus teaching and research. The proposed project will develop and test a new model of student experiential learning that can be adopted by other university botanic gardens.

Goal 4 (**disseminate the expertise of UC Davis to the regional community and promote environmental responsibility**) addresses the Arboretum's role as an outreach arm of the university. This project supports the campus commitment to promoting environmental sustainability by addressing issues facing California native plants in the wild, and by extension all threatened ecosystems. UC Davis is one of the premier environmental science universities in the world. The Arboretum is in a unique position to translate the work of UC Davis researchers to the public. The proposed interpretive program will be an important vehicle for meeting a demonstrated urgent need for improved environmental literacy to prepare citizens to address the threat of global climate change and declining biodiversity.

Goal 5 (**fund capital and operating needs through extensive partnerships within and beyond the university**) represents the Arboretum's collaborative approach to development. Creative approaches to income generation and cost sharing have allowed the Arboretum to continue growing despite the University of California's ongoing financial straits. We have worked hard to generate partnerships with other campus units

which can support the Arboretum with in-kind donations of services, equipment, co-marketing, etc. This project will strengthen our relationship with campus academic departments, who will help us match IMLS funds with in-kind contributions of time. This project will allow us to build on and strengthen community partnerships through the use of a “community build” model for construction of the garden exhibit. Additionally, this project meets our development goals for donor stewardship by demonstrating our commitment to the California native plant collection to its benefactors.

Goal 6 (**build a high performance volunteer and staff corps dedicated to leadership, teamwork, and service**) speaks to the Arboretum’s commitment to leadership development in staff, volunteers, and student interns. The proposed project will expand our internship program and collaboration with academic departments at UC Davis. It will provide students with hands-on experience in public garden operations, including exhibit design and construction, curatorial record-keeping, horticulture, informal education, and interpretive services.

Area demographics and intended audience: The primary audience of the UC Davis Arboretum is the regional community in the city of Davis (pop. 70,000), Yolo County (pop. 200,000) and the Sacramento Valley. The residents of this mainly rural area are largely white and lower to middle class, with a significant Hispanic minority and smaller populations of African-Americans, Southeast Asians, Ukrainians, Punjabis, and other ethnic groups. The county population includes 14.5% living below the poverty level; average per capita income is less than \$20,000. We also serve the students, staff, and faculty of the University of California, Davis campus, and our website is a resource for the greater scientific, gardening, and museum communities. The Arboretum is free to everyone and open 365 days a year. This unlimited access makes it ideal to attract visitors at all socio-economic levels. It is accessible through a number of bus lines, making it inviting to school groups and other visitors from the larger regional community.

Among our on-site audiences, we have a special interest in serving informal learners, K-12 students, and UC Davis students, who are the primary audiences for this project. Our interpretation and education programs are based on current research in informal learning. We will work with faculty and students in the School of Education to produce interpretive programs that effectively attract and engage audiences with diverse backgrounds and interests to encourage scientific literacy. UC Davis has a very diverse student population; undergraduate students who participate in the project will represent a diverse mix of academic majors and bring a wide range of life experience to the project. Our remote audiences include researchers, public garden professionals, and home gardeners worldwide; we will disseminate information about this project via the web.

## 2. Project Design

### Project activities and overall goals

The overall goals of the project are 1) to make the UC Davis Arboretum’s California native plant collection physically, intellectually, and emotionally accessible to visitors and other audiences in order to increase awareness and appreciation of our native flora and understanding of the need to protect plants in the wild, and 2) to demonstrate and test a new model of student and faculty participation in exhibit development, interpretation, and public education, in order to make the scientific expertise of UC Davis more accessible to the public, foster scientific literacy, and help prepare the next generation of environmental leaders.

The Arboretum’s California native plant collection comprises about 3,000 individuals representing more than 250 taxa in 52 plant families. It includes species from a wide geographic range, with an emphasis on plants of riparian, chaparral, foothill woodland, and grassland communities. About half of these plants were grown from propagules collected in the wild, and Arboretum curatorial records include information on where, when, and by whom they were collected and a detailed description of the site, conditions, and associated species of their native habitat. The California native plant collection, one of our most important collections, comprising over 50% of our collection of our Mediterranean climate-themed plantings, was formed to support the teaching and research functions of the University, and remains an important resource for researchers and educators.

For the past several years, the Arboretum has been formulating and testing a new initiative called the Arboretum GATEways Project (Gardens, Arts, and The Environment). The GATEways project uses the landscape as a laboratory where students extend their academic efforts by delivering informal education programs to visitors and showcase the riches of UC Davis to the public. Students apply their classroom studies to public

engagement in the Arboretum and learn skills that will prepare them to take leadership roles in solving societal problems. We have pilot-tested a number of collaborations with students and faculty, in which students have created interactive digital maps, interpretive signage, family nature programs, science-themed public art projects, and other innovative means for engaging with Arboretum visitors (see supplemental materials for more information). The GATEways project has been enthusiastically received by students, faculty, administrators, and Arboretum visitors. This effort to transform students from passive learners in the formal education setting into active facilitators of learning for public audiences in a free-choice, museum setting is unique among universities nationwide.

The proposed project will be an expanded demonstration of the Arboretum GATEways model, integrating student learning with exhibit design, interpretation, and visitor education at a university garden. The project has several components:

**California Native Plants Discovery Garden:** We will work with students and faculty to design and construct a new garden exhibit for the native plant collection, with paths, benches, wayfinding signs, interpretive signs, plant labels, and digital interpretation. The exhibit will be located at the east end of the Arboretum, in close proximity to downtown Davis. The exhibit will be located adjacent to a planned interpretive center that will include community gathering spaces, indoor and outdoor classrooms, and sites for student-created changing exhibits and ephemeral art. The Discovery Garden will invite visitors to learn about the California native plants in the collection and in the wild, California ecology, the importance of native plants in human history and culture, and the challenges facing California plant communities, including climate change, habitat fragmentation, landscape conversion, loss of pollinators, and other factors. Details on the California Native Plants Discovery Garden exhibit appear in the Exhibition Summary.

**Educational programming:** The Arboretum GATEways model puts undergraduate students in a primary role, both as learners in classroom and experiential settings, and as providers of lifelong learning opportunities for the public. For this project, we will develop a series of educational programs for UC Davis students, who will assist in developing the exhibit from inception to delivery, and create and deliver programs for families, K-12 school classes, and the community.

- We will work with faculty to develop and pilot several new undergraduate class projects and internships that incorporate experiential learning opportunities in the Arboretum. Students will become partners in the design and outreach components of the project, working with faculty and Arboretum staff to create participatory learning experiences for visitors.

#### Exhibit Planning, Design and Installation

- Arboretum Ambassadors (participants in a year-long environmental leadership internship program) will help gather community input by surveying Arboretum visitors for a front-end assessment about their knowledge and interest regarding native plants, natural history of California, and gardening with California natives, to inform overall exhibit development.
- Students in Heath Schenker's Landscape Architecture studio course will work with Arboretum staff, the project landscape architect, and Arboretum visitors to generate ideas, solicit community input, and create preliminary designs for the Discovery Garden. The garden will also include a changing exhibit space where students can create temporary garden displays to illustrate a variety of ecological and aesthetic themes.
- Students in Tim McNeil's Environmental Graphics course in the Design Department will work with staff and community volunteers to design wayfinding and identity materials for the garden.
- Horticulture interns will propagate the plants for the project, participate in planting design, and help install the garden.
- Landscape construction interns (primarily landscape architecture students) will help design and build paths and irrigation for the garden exhibit.

#### Interpretation and Education

- Interpretation interns will help develop and test interpretive signs and a self-guided cell phone tour for the Discovery Garden.

- Students in Heidi Ballard’s Environmental Education courses will work with Arboretum staff, education interns, and community volunteers to develop an elementary school tour curriculum for the garden and hands-on interactive “investigation stations” for school and family programs.
  - Jared Shaw, Professor of Chemistry, whose work focuses on the medicinal qualities of native plants, will work with undergraduate students and high school students in the neighboring agricultural community of Woodland, California, to develop and test a series of interpretive signs about traditional medicinal uses of plants by Native Californians.
  - Wendy Silk, Professor of Water Science and Plant Biology and a performing musician, will teach a course through the innovative UC Davis Art/Science Fusion Program in which undergraduate students will study native plants and write and perform songs about them in collaboration with K-12 students and community participants.
  - Curatorial interns will create digital maps of the garden by taking GPS readings and entering data into the Arboretum GIS system.
  - Naturalist interns will lead elementary school tours in the Discovery Garden.
- We will train at least ten Arboretum Docents to provide guided tours of the Discovery Garden using the concepts and interpretive themes developed for the project. The free guided tours will be offered on weekends at least once per quarter throughout the year.
  - Faculty involved with the project and researchers working on California native plants will participate in the Arboretum’s new Science Café, a series of informal presentations and conversations with UC Davis scientists about current topics of interest.
  - Students, faculty, and Arboretum staff will work together to create hands-on education programs for families, K-12 classes and adult audiences, using the concepts and interpretive themes developed for the Discovery Garden and featuring interactive experiences. Programs will incorporate “investigation stations”—portable, flexible-use carts for presenting teaching demonstrations and hands-on activities. Programs will be presented during Arboretum Discovery Day, an annual outreach event aimed primarily at families with young children.

**Resources for researchers:** The California Native Plants Discovery Garden will be mapped in the Arboretum’s GIS system and digital maps and plant accession data will be made available online through existing portals.

**Project evaluation:** We will evaluate the project using the Arboretum’s ongoing model of front-end, formative, and summative evaluation. See Impact, below, for more detail on our planned evaluation process.

**Project management:** The Project Director will have primary responsibility for project management. The Arboretum operates with a work team structure; we have a well-defined process of establishing work plans with goals and objectives, timelines, staff assignments, and budgets for each major project, and meet regularly (usually weekly) to track progress, problem-solve, and adjust timelines or staffing assignments where necessary. Our team works together very effectively and we have had considerable experience with complex projects similar to this. The project timeline has been designed to allow time for testing and revision.

**Scholarly and community involvement:** We will assemble a leadership committee for the project, including Arboretum staff, community volunteers, UC Davis faculty, and the campus landscape architect. The committee will work with UC Davis students and faculty, Arboretum visitors, K-12 students, and community volunteers, along with the project landscape architect and exhibit designer, to develop the garden design, plan interpretive themes and content, design and test interpretive materials, and plan and deliver education programs. We will use a “community build” model for garden installation. After our professional staff and student interns complete site preparation and path and irrigation installation, horticulture interns, Arboretum volunteers, service organizations, and other community members will be invited to help plant and mulch the garden.

**Project partners:** We have no formal partners on this project.

**Outreach plans:** We will publicize this project to the regional community through our well-established outreach network, which includes regional media outlets (print, web, radio and TV); campus and in-house publications; signage at kiosks within the Arboretum; mailings to our 1700 members; and our website. Arboretum staff appear regularly on local gardening shows and write articles for campus and community newspapers, regional

and national professional journals such as *Pacific Horticulture* and *The Public Garden*, and our quarterly *Arboretum Review*. We have excellent relations with local media and frequently arrange feature articles and broadcasts about our programs (see supporting documents). We reach our audiences at Arboretum events such as our very popular plant sales, family festivals, and arts events. Our members and our more than 200 active volunteers are effective advocates and publicists in the community. We will reach our professional peers through organizations such as the American Public Gardens Association (APGA) and the California Native Plant Society (CNPS). Project staff will speak on this project at the annual meetings of those organizations in 2012.

### **3. Project Resources: Time, Personnel, Budget**

Time allocated to complete the project: We have designed this project within a two-year time frame, and have carefully allocated time to each project activity, taking into consideration the campus academic schedule, seasonal needs of the plant collections, the availability of project consultants, and the overall responsibilities of Arboretum staff. We have been generous in our time estimates to allow for unforeseen complications. Each project component includes a small-scale test phase and subsequent evaluation and modification as necessary, in order to minimize errors.

As shown in the attached schedule of completion, the initial four months of the project are allocated for planning and preliminary testing. Garden design and construction will take place during year one. Education and interpretation projects will take place during year two. The last two months are allocated to evaluation and dissemination of information about the project to our professional peers.

#### Key staff and consultants

Carmia Feldman, Assistant Director, will have the overall responsibility for this project and will lead the exhibit planning, design, and testing process and the education and outreach programs. She holds a Master of Science degree in ecology and a Ph.D. in science education from UC Davis. Her area of specialization is informal science education at public gardens. She brings expertise in the subject matter and in teaching methodologies and theories of learning to the project.

Rachel Hartsough, GATEways Education Manager, will serve as project coordinator. She holds a Master of Science degree in Information Technology in Education. She will coordinate the day-to-day flow of the project and help manage visitor assessment, community involvement, and the interpretation and education components of the project.

Ryan Deering, GATEways Horticulturist, will manage the construction of the Discovery Garden. He holds a Master of Science degree in horticulture. This will be his primary project for the duration of the grant period.

Diane Cary, Communications Director, will assist with exhibit planning, interpretation, and project evaluation. She holds a Master of Education with a specialization in community and nonformal education.

Elaine Fingerett, Youth and Family Outreach Manager, holds a Masters of Science degree in ecology. She will coordinate student and community volunteer participation and help manage the public education programs.

Mia Ingolia, Curator, holds a Master of Science degree in horticulture. She will lead the process of making digital maps and database of the California native plant collection available online.

We are fortunate to have access to technical expertise through our campus partners in the Office of Administration and Planning and the College of Agricultural and Environmental Sciences (CAES) at UC Davis to extend the reach of this project. Outreach to the regional community and promoting environmental literacy are primary missions not only of the Arboretum, but also of the College and the University as a whole.

#### Budget allocations

Of the total request grant funds for this project, about 51% are for personnel, 14% for equipment and supplies, and 33% for services provided by our campus partners and suppliers with whom we have established relationships. All equipment and service costs are based on actual quotes or recent invoices from suppliers. Personnel costs are our best estimates, based on previous projects. We have allocated personnel time carefully across the project period, and tried to spread the workload evenly over that time. This will be the primary

project for the horticulture and education teams over the project period, so staff in those areas will be available to devote adequate time to the project. We plan to hire five student interns for 100 hours each to assist faculty and staff with exhibit design and installation, interpretation, and education programming.

The University of California, Davis has agreed to absorb the indirect costs of this project without charging them to the grant. This is an indicator of the importance of the project to the campus, especially when state funding for higher education in California has declined steeply. This waiver of the indirect cost requirement will allow us to apply 100% of the grant funds to the proposed project.

#### 4. Impact

This project will be important for the Arboretum and its audience in several ways. The new Discovery Garden will be prominently located at the connection of the university with the City of Davis, and will be easily accessible by bus, car, bike, or foot. It will be adjacent to the planned Wolf Interpretive Center, which will include exhibit and classroom space; programs at the Center will make use of the Discovery Garden exhibit. We expect that visitors will come away with a greater understanding of the diversity of native plants, their cultural and historical significance, and threats to California's wild plants and ecological communities. They will learn something about the work of a botanical garden, and the importance of living collections for research, teaching, and the preservation of biodiversity.

The project will involve hundreds of university students and community members each year in the work of the Arboretum, giving them an active role as partners in the educational enterprise. By increasing environmental literacy and providing leadership training and experience, the project will help develop the next generation of environmental scientists, activists, and stewards.

The University of California, Davis is one of the premier plant and environmental science institutions in the world. The Arboretum GATEways model builds a crucial connection between Arboretum visitors and university teachers and researchers. A 1999 report by the Kellogg Commission on the Future of State and Land-Grant Universities (<http://www.nasulgc.org/>) envisions that “[i]n the next century, a new kind of university will be in place . . . open, accessible, and flexible in ways that can barely be imagined today. In this new university, the emphasis will be on delivering instruction, anywhere, anytime, and to practically anyone who seeks it.” We believe that the GATEways model is an important step forward toward this new university, sharing the deep knowledge and critical work of UC Davis with the public in an open, flexible setting, while simultaneously bringing the Arboretum audience in as partners in the lifelong learning enterprise and leveraging student studies, leadership and engagement.

This project will also benefit the Arboretum. An audience that understands the value of our work is an important ally. Particularly in these difficult economic times, it is advantageous to museums to cultivate advocates in the community, and this project should increase the Arboretum's visibility and utility, and help us carry out our role as a living classroom and laboratory. Likewise, by linking the Arboretum directly with the teaching and research programs of the university, this project positions the Arboretum to avoid a risk identified by the American Association of Museums, which notes that “a significant number of America's natural history museums and collections affiliated with universities are currently threatened with severe financial cutbacks, dispersal of collections, and outright closure. At risk are collections of irreplaceable objects, such as geological, paleontological, zoological and botanical specimens, anthropological and historical artifacts, and archives. These collections are held in trust for the public; they are the priceless heritage of this and future generations; and they constitute critically important resources for new knowledge.” (<http://www.aam-us.org/pressreleases.cfm?mode=list&id=113>)

Intended products: Tangible products of the project will include the California Native Plants Discovery Garden, with paths, benches, wayfinding signs, orientation signs, interpretive signs, plant labels, and stations for a cell phone tour; docent training materials about the garden; and information on the Arboretum's web site about the project and links to an online database and digital maps of the California native plants collection. Articles about the project will be published in the quarterly *UC Davis Arboretum Review* and submitted to *Fremontia*, the journal of the California Native Plant Society, and *The Public Garden*, the journal of the American Public Gardens Association. The support of IMLS will be acknowledged on the signs and all print publications.

Measurable results and evaluation and reporting methods: The proposed project will increase awareness of the Arboretum's California native plants collection; understanding of the historical and cultural importance of California native plants and the issues facing California plant communities in the wild; and access to collection information for researchers. We will evaluate the success of the project by measuring use of the new Discovery Garden; interaction with interpretive exhibits; participation in and satisfaction with educational programs; and use of online resources. Additionally, we will use interviews with visitors and other participants to develop a qualitative evaluation of the project's educational effectiveness.

We will begin the project with front-end evaluation, by surveying Arboretum visitors about their interest in and knowledge of native plants and California ecology. Using the results of this survey, we will develop a series of teaching points for the collection, within our identified interpretive themes. These will be used to create the interpretive signs for the Discovery Garden. The signs will be produced using a nationally-recognized exhibit development strategy that uses teams of people from different disciplines and different audience segments to generate sign ideas and test mock-ups in the garden with actual visitors. Exhibit teams will observe visitors interacting with the test signs and interview them about what they understood the messages to be. Sign mock-ups will be modified and re-tested until they reliably attract and hold visitor attention. This formative evaluation can greatly increase the signs' ability to educate visitors.

We will evaluate the success of our educational programs by counting the number of participants and asking participants to complete brief surveys to measure their satisfaction with the program and identify what they learned. We will track use of the cell phone tour by counting the number of times it is accessed. We will evaluate the usefulness of our online resources by tracking the number of "hits" on the relevant web pages.

We will report on the project with articles in the *UC Davis Arboretum Review*, *Fremontia*, and *The Public Garden*. Arboretum staff will speak about the project at the annual meetings of the American Public Gardens Association (APGA) and the California Native Plant Society (CNPS).

Long-term impact: The proposed project will remain a vital part of the Arboretum's interpretive and educational program for years to come, and will continue to have a positive impact on UC Davis students, visitors and on the Arboretum. The garden will last indefinitely with routine maintenance. The interpretive signs and plant labels have a lifespan of at least 20 years.

We anticipate that we will be able to leverage IMLS funding to increase support from UC Davis, private foundations, corporate sponsors, and individual donors. The campus has made fundraising for the Arboretum GATEways Project a priority and has assigned the Arboretum a major gifts officer. The Arboretum holds a small endowment to support maintenance of the California native plant collection; we anticipate that this project will inspire additional contributions to the endowment.

Perhaps more importantly, by developing and testing this model of student participation in garden exhibit development, interpretation, and public education, we are creating a system and building relationships that will make it possible to link the Arboretum to the academic and research enterprise more extensively in the future, and to make the rich resources of the university accessible to visitors. The exhibit space that will be created will be used by UC Davis faculty and students to deliver programs and display changing exhibits for years to come. Our experience will provide valuable information and a model for university gardens nationwide.

We hope that the experience of helping with the community build project, attending education programs, or visiting the Discovery Garden will move participants to support the Arboretum, its collections and programs, to continue to be involved as community partners, to take action to protect native plants in the wild, and to address the critical environmental issues that face us all.

**BUDGET FORM: Section B, Summary Budget**

	\$ IMLS	\$ Cost Share	\$ TOTAL COSTS
1. Salaries and Wages	\$54,217.00	\$144,172.00	\$198,389.00
2. Fringe Benefits	\$17,376.00	\$24,210.00	\$41,586.00
3. Consultant Fees			
4. Travel	\$2,000.00		\$2,000.00
5. Supplies and Materials	\$20,700.00	\$17,000.00	\$37,700.00
6. Services	\$54,400.00	\$26,000.00	\$80,400.00
7. Student Support			
8. Other Costs	\$1,100.00		\$1,100.00
TOTAL DIRECT COSTS (1-8)	\$149,793.00	\$211,382.00	\$361,175.00
9. Indirect Costs	\$0.00	\$0.00	\$0.00
TOTAL COSTS (Direct and Indirect)	\$149,793.00	\$211,382.00	\$361,175.00

**Project Funding for the Entire Grant Period**

1. Grant Funds Requested from IMLS	<b>\$149,793.00</b>
2. Cost Sharing:	
a. Applicant's Contribution	<b>\$211,382.00</b>
b. Kind Contribution	
c. Other Federal Agencies*	
d. TOTAL COST SHARING	<b>\$211,382.00</b>
3. TOTAL PROJECT FUNDING (1+2d)	\$361,175.00
Percentage of total project costs requested from IMLS	<b>41 %</b>

\*If funding has been requested from another federal agency, indicate the agency's name:



	2010	2011				2012		
	Nov-Dec	Jan-Mar	Apr-June	July-Sept	Oct-Dec	Jan-Mar	Apr-June	July-Oct
<b>Digital Interpretation</b>								
Plan digital interpretation internship								
Students help plan self-guided cell phone tours								
Write scripts								
Editing and production								
Test and revise								
<b>Scientific Collection Documentation</b>								
Plan curatorial internship								
Students shoot GPS locations for plants and garden features								
Map garden with GIS; create digital maps								
Enter new accessions in plant collection database								
Publish maps and database on web								
<b>Education Programs</b>								
Plan environmental education class project and internship								
Work with students to create public education programs								
Science Café, informal presentations with researchers								
Programs for visiting elementary school classes								
Docent training								
Regular docent tours of Discovery Garden begin								
Plan Art/Science Fusion course project								
Art/Science Fusion class, public workshops, performances								