2011 Botany alumni newsletter

Letter from the Chair

Dear Alumni and Friends

Once again, I am happy to report a busy and successful year for the Department of Botany. As this newsletter documents more fully, faculty, staff, and students have continued to excel and garner diverse grants and awards. Our research and education missions are thriving despite the chaotic events and financial challenges seen at the University and State levels.

The department bid farewell to some long-time "Birgies." Professor **Tim Allen,** Department Administrator **Barbara Erlenborn**, Senior Artist **Kandis Elliot**, and Librarian **Elsa Althen** all retired during the last year. Though we hope to see them all frequently (indeed Barbara came back as a limited-term employee to help us transition to a new administrator), we would like to extend them all heartfelt thanks for a collective 101 years of service to Botany and our very best wishes for an enjoyable and rewarding retirement period!

On the flipside of these departures some new faces have joined our staff. **David Bogen** is now deploying his considerable skills with computers in service of the department's information technology needs. We are delighted to have an alumna, Dr. **Andrea Herr-Turoff**, join the staff as student services coordinator, overseeing our undergraduate and graduate programs. And, we welcome **Cheryl Rezabek**, an alumna of the Biological Aspects of Conservation program, who recently became our new Departmental Administrator.

During the last year we searched for and found a professor of plant biochemistry. Through the hard work of **Simon Gilroy** and his search committee we were able to narrow a field of 100 applicants to four finalists and then to select and recruit a superb biochemist, **Hiroshi Maeda**. We are delighted to have Hiroshi join our faculty and look forward to watching his research program and teaching ventures take off.

This year has seen a decided upswing in the number of sizable gifts to the department. As outlined on page 8, new gifts have allowed us to: greatly increase the support for needy, female graduate students; offer further undergraduate research scholarships in plant physiology; establish a new scholarship for graduate students studying plant conservation; recruit a Writing Fellow to work to improve the writing of Botany students; and increase support for visiting eminent Botanists to give seminars or participate in research collaborations.

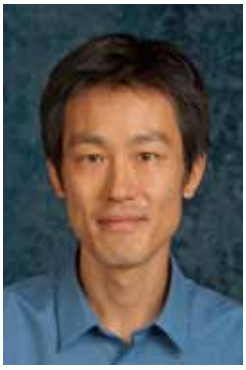
Of particular note, thanks to a generous lead gift from an anonymous donor, we are launching a campaign to raise funds for a Conservatory Greenhouse and Outreach Center. This project will not only create a new, accessible high-house for teaching and outreach but will also improve our existing greenhouse facilities, generate additional research-grade growth space, and renovate an outreach classroom adjacent to the greenhouse. We are hoping to begin building in 2012 because this would be a perfect way to mark the centennial of the Botany Building/Birge Hall. For more information, see page 9.

Even the most modest gift helps achieve our mission incrementally and also serves as a validation of our programs. As a result, I would like to offer sincere thanks to everybody who has donated to Botany in the last year. With your help we have been able to advance our missions significantly, even during these tough economic times.

On behalf of the Botany Department I would like to wish alumni, friends, and all readers a healthy and successful year ahead!

David Baum, Chair

COMINGS AND GOINGS



We are very fortunate to have recruited Dr. **Hiroshi Maeda** to the department as an assistant professor starting in August 2011. Hiroshi is a remarkably talented scientist who has already made ground-breaking discoveries in the area of plant biochemistry. He obtained his Ph.D. in Cell and Molecular Biology at Michigan State in 2007, working with Dr. Dean Della Penna on the biosynthesis and physiological functions of vitamin E. He was then honored by the Japan Society of the Promotion of Science with a fellowship to pursue postdoctoral research in the laboratory of Dr. Natalia Dudareva at Purdue University. Hiroshi's work there focused on understanding the biosynthesis of phenylalanine, an essential amino acid in the human diet. Phenylalanine is also a precursor of various plant-derived compounds ranging from volatiles that form floral scents to cell wall polymers that make wood. Hiroshi was recently awarded the prestigious Eric E. Conn Young Investigator Award from the American Society of Plant Biologists for this work. Welcome, Hiroshi, and thank you for bringing your exciting research program to Madison!

We are pleased to introduce **David Bogen**, the department's new Information Technology Specialist. Birge Hall may look the same to you, no matter when you occupied her, but computer technology, networking, and the internet have substantially changed the teaching and research activities within. That is why we need a comprehensive information technology expert, a position that David Bogen filled in fall 2010. We are fortunate to have someone with David's deep technical expertise in Linux server administration and networking support for scientific research. His undergraduate degree from Tufts University is in History, yet previous to joining us he was part of a large effort to study neutrinos using a huge detector set deep beneath the South Pole ice. His breadth of experience with the type of computer systems we now rely on and his wide-ranging interests make him fit the department like a glove. Also of note, David's wife is a Botany alumna (Hotchkiss lab).

Andrea Herr-Turoff returned to the Botany Department in January 2011 as our student services coordinator. Little did she know when she completed her PhD work in 2005, that she would later help others do the same. Andrea's dissertation research focused on "Wisconsin's worst wetland weed," reed canary grass (*Phalaris arundinacea*); her publications report how this plant alters its growth form in response to inundation, how it rapidly displaces native species, and how it failed to outperform native wetland plants in nitrogen uptake, thus making a case not to plant this aggressive invader. Andrea brings extensive quantitative skills to her new position, in which she is building and maintaining critical databases which include you—our newsletter readers—managing the timetable of classes, and guiding both graduate and undergraduate students through program requirements. Andrea has two daughters who keep her busy with high school activities and plans for college. Welcome back, Andrea!

Cheryl Rezabek joined the Botany Department in August as our new Departmental Administrator. She is no stranger to UW or to plants, having graduated with a BAC (Biological Aspects of Conservation) degree in 1984.

Cheryl brings a long list of skills to the department, including grant administration, budgeting, supervision and project management. Her most recent position was at the Wisconsin Department of Administration, where she promoted energy efficiency and renewable energy projects in state and university facilities throughout the state.

A native of Wisconsin, Cheryl's favorite plant is Queen Ann's Lace as its pollination strategy has always intrigued her. And her favorite place to visit is Rainbow Lake Wilderness Area in the Chequamegon National Forest. Cheryl and her husband, Bob Strous live with their 2 dogs and 2 cats in their "off grid" home in rural Brooklyn.

We look forward to her continued appreciation of all things botanical, including, of course, us botanists!

Dr. **Timothy F. H. Allen**, Professor of Botany and Environmental Studies, retired in December 2011 after 41 years of service to UW. Tim's web site lists his expertise as hierarchy theory and problems of scale; epistemology for biological systems; ordination and classification of communities, all of which followed his training at the University College of North Wales. He obtained his doctorate in 1968 studying communities of algae on rocks, then taught for two years in Ife, Nigeria, before joining the Botany faculty. Tim is fond of describing how his casual visit to UW in 1969 turned into a "job interview," which led to a visiting assistant professorship and then a tenure-track position.

As a teacher, Tim was renowned for his lectures and labs in "Plants and Man," which was popular among students in Botany, Geography, and Integrated Liberal Studies. Armed with a British accent and gifted with a voice that carried throughout Birge Hall, Tim became an institution, and he is much missed.

Across UW and far beyond, Tim is well known as unique and outspoken on many subjects, but particularly hierarchy and complexity theory. His most well-known books are: Allen, Tainter & Hoekstra (2003) *Supply-side sustainability*; Allen & Hoekstra (1992) *Toward a unified ecology*; and Allen & Starr (1982) *Hierarchy: perspectives for ecological complexity*. A strong promoter of independent thinking among undergraduates and graduate students alike, he helped them tackle diverse topics ranging from megafaunal extinctions to energy futures, concerning dairy farms to cedar glades, and addressing forests to kettle holes, all while paying due attention to theory.

In 2009, Tim became president of the International Society for the Systems Sciences, a position that he enjoyed immensely, as it kept him in touch with theorists from around the world. Closer to home, he worked hard to improve campus libraries as a departmental representative.

Tim is retired but not done with his work. He aims to publish more of his ideas and to continue teaching by creating podcasts—on his own schedule, not held to a timetable! His wife and three children all joined him and about a hundred of his friends in a festive retirement dinner at the Arboretum in January 2011.

Thank you, Tim, for all of your contributions to the Botany Department!

Elsa Althen, Director of the Biology Library, retired in December 2010 after 21 years of service following her Bachelor's degree in Botany at UW. Elsa saw many changes, as library use transitioned from face-to-face access to the digital revolution. As journals increased in number and electronic access, she was there to help us find them, answering any question and helping with any problem, no matter how obscure. In addition, Elsa's manuals for specific courses helped students become scholars. Elsa kept the Biology Library on track despite budget constraints, working with faculty to make hard decisions on which journals to cut and how to retain the materials she knew we would need better than we did. If we said, "I don't know what I want," Elsa found it and satisfied a myriad of competing agendas. Even as the journals and books were moving to Steenbock Library, Elsa saw the positive side. Users can more easily get electronic copies and access originals as needed, and the Librarian in Birge can still provide course materials with a helping hand. Elsa left her mark by making sure that the best things would happen as the Biology Library entered a new phase. We miss Elsa and wish her all the best in her retirement.

On June 30, 2011, Botany Department Senior Artist **Kandis Elliot** officially retired after 22 years of service to the Botany Department. Kandis took over leadership of the Botany Studio, which provides imaging and illustration services, during the early years of digital illustration. Throughout her career, Kandis kept abreast of the latest methods, providing departmental faculty and staff with amazing illustrations to aid our research, teaching, and outreach activities. Kandis' ability to communicate complex concepts with visually exciting and readily understood graphics has been appreciated by the entire department, and now the world. Her educational poster, "Introduction to Fungi," won first prize in Science magazine's challenge to visualize International Science and Engineering.

Kandis was also instrumental in developing the Botany Outreach Store, a website through which instructors can order diverse educational materials generated in the Botany Department, including the fungi poster. In this way, Kandis and her successor, Media Specialist **Sarah Friedrich**, *creatively* met the challenge of generating financial resources

needed to keep the Botany Studio up-to-date, despite challenging economic times for the larger university community. To visit the Botany Outreach Store, go to https://charge.wisc.edu/botany/sales.asp

In June, the department celebrated Kandis' career and communicated our sincere thanks for service above and beyond expectations.

In December 2010 **Barbara Erlenborn** retired after 37 years of service to the University of Wisconsin, the last 17 of her tenure being spent as the Botany Department Administrator. Over that time she ran the departmental office and assisted five Chairs. Barbara was an excellent detective for the sometimes byzantine rules and processes of the UW and was highly regarded for her stalwart efforts to advance the department's interests. Barbara's numerous accomplishments include streamlining administrative processes in the office and helping to initiate a series of undergraduate teas as a way to reach out to Botany Majors (with fine china that Barbara herself donated to the department). Barbara's efforts to build a warm and welcoming atmosphere were always greatly appreciated. We were fortunate that Barbara was willing to return as a limited-term employee for most of 2011 to help us find and transition to a new administrator. A celebration of Barbara's career took place on September 14th, 2011.

AWARDS AND KUDOS

Undergraduate Awards

Raper Prize for the highest GPA - **Emily Lewis**

Folke Skoog Award - **Arielle Clarin**

Frits Went Awards - **Kohldon Boydston**, **Tejaswi Dittakavi**, & **Aaron Roznowski**

Graduate Students

Thanks to our donors, 19 Botany graduate students received 29 intradepartmental awards to support their research and professional development. Here are the 2011 awardees:

O.N. & E.K. Allen Graduate Fellowship – **Brent Berger** & **Emily Sessa**

Botany Writing Fellowship – **E. Jane Bradbury**

Croxdale Award – **Alexandra Chanoca** & **Abigail Mazie**

Davis Research Grants – **Rafael Arevalo**, **Shana Ederer**, **Katie Frerker**, **Elizabeth Georgian**, **Stephanie Lyon**, **Lauren Moscoe**, **Alison Scott**, **Daniel Spalink**, **Alejandro Zuluaga Trochez**

Davis Summer Research Fellowship – **Rafael Arevalo**

Flora Aeterna Fellowship – **Benjamin Grady** & **Brian Sidoti**

Eldon & Joy Newcomb Fellowship – **E. Jane Bradbury**

Eldon Newcomb Teaching Award – **Evelyn Williams**

Raper Travel Grants – **Brent Berger, E. Jane Bradbury**, **Rafael Buono**, **Alexandra Chanoca**, **Bryan Drew**, **Benjamin Grady**, **Stephanie Lyon**, **Abigail Mazie**, **Alison Scott**, **Alejandro Zuluaga Trochez**

Botany graduate students' recognition and fellowships from UW-Madison:

UW Exceptional Service Award - **Andrew Gardner**

College of Letters & Science Teaching Fellow - **E. Jane Bradbury**

Marie Christine Kohler Fellow - **Rafael Arevalo**

Advanced Opportunity Fellow - **Richard Hilleary**

Our graduate students continue to seek support from external funding sources and were rewarded with fellowships, research awards and travel grants from the following organizations: American Society of Plant Taxonomists, the Botanical Society of America, the National Science Foundation, the Society for Economic Botany, the Ecological Society of America, the American Fern Society, the American Orchid Society, the Hunt Institute for Botanical Documentation, the National Sigma Delta Epsilon - Graduate Women in Science program, and the National Park Service. For a detailed list of awards and recipients, select the "Current Events" link on the Botany home page at www.botany.wisc.edu

Sarah Swanson is awarded the Cool Science Image Prize

image of cotton pollen grains on stigma (Photo: Sarah Swanson)

Sarah Swanson, director of the Botany Department's Plant Imaging Center (PIC), was named winner of the Cool Science Image contest by The Why Files. A UW-Madison science news website, The Why Files' mission is "to explore the science, math and technology behind the news of the day and to present those topics in a clear, accessible and accurate manner." Sarah took her winning image of pollen grains stuck to the stigma of a cotton flower (500x magnification) using the FEI Quanta environmental scanning electron microscope in the PIC. Sarah's image and those of contenders can be viewed at http://whyfiles.org/2011/cool-science-image-contest/

New Graduate Program Assessment Tool

During spring semester of 2011, with the support of a grant from the Graduate School, the Botany Department developed, tested, and mounted on the department's web site a set of digital survey instruments to aid improvement of the department's Graduate Program. Senior graduate student **Evelyn Williams** led the effort, aided by Student Services Coordinator **Andrea Herr-Turoff** and undergraduate Botany major **Sam Wegleitner**. Evelyn generated survey questions with the advice of faculty, staff, and students while Sam identified and tested a survey tool. Several Botany graduate students graciously filled out versions of the survey to optimize length and data gathering. The resulting three instruments are for: (1) graduate students who are at early stages in their programs, (2) senior or graduating students, and (3) alumni. The student services office will survey each group at appropriate times, to help the Graduate Committee monitor the effectiveness of Botany's graduate program, make adjustments, and improve it over time.

Despite a graduate school recommendation that departments conduct such surveys, Botany's digital format seems to be among the first of its kind on campus and thus likely to be a model for others. Congratulations to Evelyn, Andrea and Sam for jobs well done!

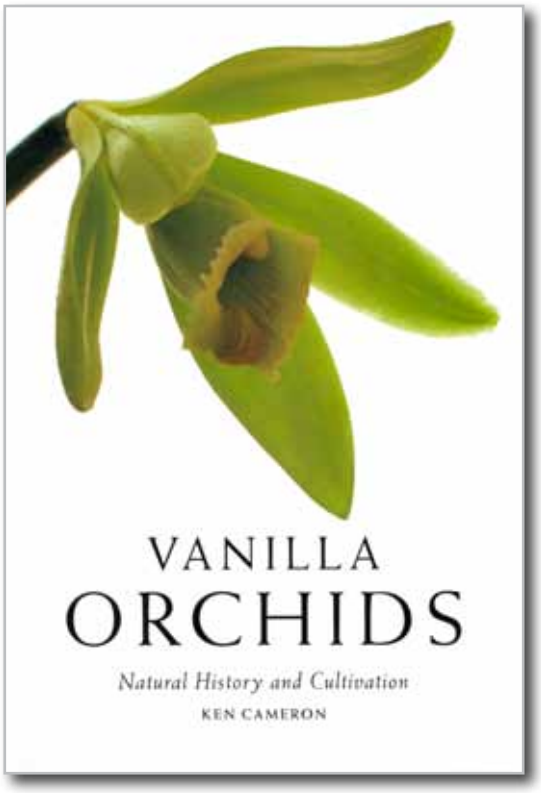
Moth Orchid by Mary Bauschelt

Gardens Inspire Art

Fourteen local artists, including the department's horticulturist, **Mary Bauschelt**, were invited to create original, two-dimensional art inspired by Olbrich Gardens' sixth biennial Olbrich as Art Invitational Exhibit. Mary has worked in the department's greenhouses and gardens for thirty years, but did you know that she is also on the board of directors for the American Society of Botanical Artists? This year's exhibit included a new twist; Madison's poet laureate, Fabu Carter Brisco, was invited to create original poems inspired by Olbrich. The poetry was displayed along with the artwork in Olbrich's Evjue Commons, giving visitors not only a visual interpretation of the Gardens, but also a literary interpretation. Even though all artists were given the same criteria – to create something inspired by the gardens – they produced unique and completely individual works of art, giving visitors the opportunity to see Olbrich Gardens through many perspectives.

Vanilla Orchids: Natural History and Cultivation

With more than 30,000 known species, orchids represent the largest family of plants. But only one genus has agricultural value - the *Vanilla* orchid. Leading orchid expert **Ken Cameron** covers the natural history of the world's most popular flavor and fragrance and provides an introduction to the pollination, biology, structure, evolution, and diversity of *Vanilla* and related orchids. *Vanilla Orchids* also features methods for bean harvest, curing, and processing for enthusiasts who want to try it at home.



Hardcover, 6 x 9 in, 212 pages, 140 color photos.
Price: $35 from TimberPress.com; $23 from Amazon.com

Botany2011

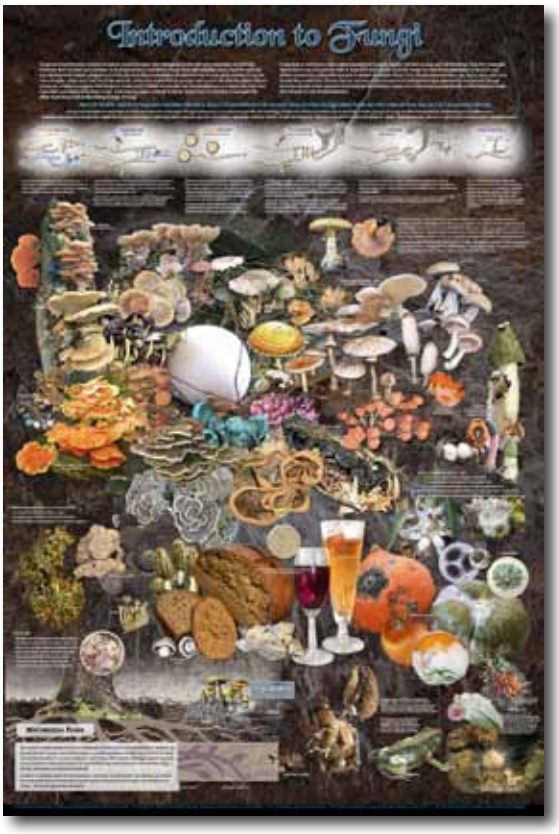
The first UW Botany Alumni and Friends' Breakfast was held at the Botany2011 meeting in St. Louis on July 12. More than 20 current faculty, graduate students, and UW alumni met to share stories and celebrate their UW-Madison heritage. The local St. Louis alumni chapter provided decorations; the conference manager provided cheese curds; and the organizers reminded everyone that "once a badger always a badger." The breakfast will become an annual event and will be held again at the Botany2012 meeting in Columbus, Ohio. Alumni and friends: please plan to attend!

Looking for Lapham

Ted Cochrane, Senior Curator of the Wisconsin State Herbarium (WIS), was one of several scientists interviewed by Wisconsin Public Television about Increase Allen Lapham, Wisconsin's first scientist. Among his many achievements, I. A. Lapham published a list of plants in Milwaukee and donated thousands of specimens to the WIS. The segment "Looking for Lapham" which aired on WPT's "In Wisconsin" program on Thanksgiving 2010 can be viewed at: http://video.wpt2.org/video/1662247933/

Science Magazine and the NSF honor Kandis Elliot and Mo Fayyaz

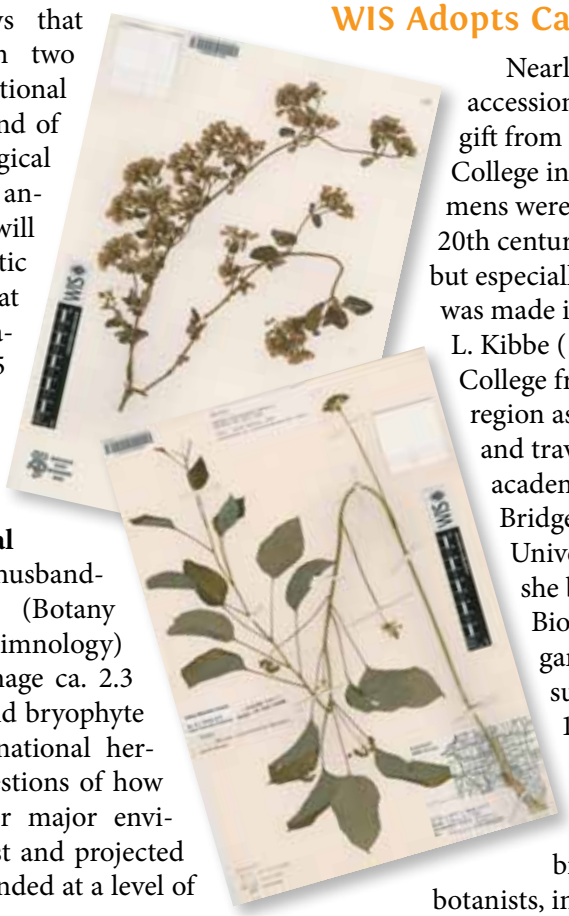
Senior artist, Kandis Elliot and greenhouse and garden director, Mo Fayyaz, took first place in the category of informational graphics for their "Introduction to Fungi" poster in the 2010 Visualization Challenge. This annual contest is co-sponsored by Science magazine and the National Science Foundation to "promote cutting-edge efforts to visualize scientific data, principles, and ideas." Of 111 entries from 63 countries, Kandis and Mo's poster was "a clear winner. That was just amazing," according to one judge. The prize-winning poster and others created by Kandis and Mo can be ordered from the Botany Outreach Store at https://charge.wisc.edu/botany/sales.asp



Introduction to Fungi poster

New Databasing and Digitization Efforts

The Herbarium continues to expand its databasing and specimen digitization efforts through several national and international collaborations. Funding from the Andrew W. Mellon Foundation supports WIS' participation in the **"Global Plants Initiative"** (GPI) which targets type specimens and associated metadata. These are available online through JSTOR Plant Science. WIS is the GPI regional coordinator for a network of herbaria in Iowa, Nebraska, Minnesota, and Wisconsin. Both Dr. **Ken Cameron** (Director) and **Mark Wetter** (Senior Curator) attended the GPI Annual Meeting in Panama City, Panama, this year.



Recently, WIS received news that it will be directly involved in two new projects funded by the National Science Foundation. The first round of "Advancing Digitization of Biological Collections" grants (ADBC) was announced in July 2011, and it will fund the creation of three "Thematic Collection Networks" (TCNs) that will involve PIs and collaborators from 92 institutions in 45 states. UW, Madison is the lead institution for one of these, "**North American Lichens and Bryophytes: Sensitive Indicators of Environmental Quality and Change**," with the husband-wife team of Drs. **Tom Nash** (Botany Herbarium) and Corinna Gries (Limnology) as co-PIs. The project aims to image ca. 2.3 million North American lichen and bryophyte specimens from more than 60 national herbarium collections to address questions of how species distributions change after major environmental events, both in the past and projected into the future. The project was funded at a level of $4.2 million.

A second TCN, "**Plants, Herbivores and Parasitoids: A Model System for the Study of Tri-Trophic Associations**" will involve WIS as a partner institution. The American Museum of Natural History is the lead institution on this project, which will unify some eight million records in 34 collections to answer how the distributions and phenologies of host plants, pests and parasitoids relate to each other. Specifically, this tri-trophic databasing and imaging project will target North American plant species attacked by insect pests in the order Hemiptera ("true bugs"), which are in turn attacked by parasitoid insects in the Hymenoptera (sawflies, wasps, ants) widely used for biological control of agricultural pests. The project's $4.0 million award includes funds for WIS to purchase a $12,000, state-of-the-art, high-throughput, digitization station and to hire a team of student hourly employees to process specimens from its holdings.

For more information on these new initiatives, read NSF's press release at: http://www.nsf.gov/news/news_summ.jsp?cntn_id=121015&org=NSF&from=news

WIS Adopts Carthage College Herbarium

Nearly 15,000 vascular plant specimens were accessioned into our collection this year as a gift from the Department of Biology at Carthage College in Kenosha, WI. Many of these specimens were collected in the late 19th and early 20th centuries throughout the upper Midwest, but especially in Illinois. The bulk of the collection was made in Hancock County, IL by Dr. Alice L. Kibbe (1881 – 1969), a botanist at Carthage College from 1920 to 1956. She was noted in the region as a natural historian, philanthropist, and traveler and for her role as an early female academic leader. Alice Kibbe was born in Bridgewater, SD, and later attended Cornell University (MS, 1920). In the fall of 1920, she began teaching in the Carthage College Biology department and immediately began work on her PhD theses, a botanical survey of Hancock County (published in 1952, as *A botanical study and survey of a typical mid-western county: Hancock, Illinois; Covering a period of 199 years, from 1833-1952*). The research brought her in contact with that of other botanists, including Drs. Meade, Kellogg, Tandy, Ehinger, whose work had been forgotten by local residents. Correspondence preserved by families of these men, as well as Asa Gray and other famous American botanists, was the basis for Kibbe's 1953 book, *Afield with Plant Lovers*.

We are especially grateful to Dr. Deanna Byrnes, Assistant Professor of Biology at Carthage College and UW-Madison alumna (Zoology Ph.D., 2005), for coordinating the adoption of the CART herbarium.

During 2010-2011, Botany was fortunate to receive several notable gifts. Here we illustrate the diverse, positive effects of the generosity of our benefactors by singling out a few funds and initiatives that had noteworthy activity during the last year.

Paul J. Allen Memorial Fund

William Bushnell (Ph.D. Botany 1960), a close friend and former student of Paul J. Allen, along with his wife **Ann Bushnell**, kindly initiated a new fund, named in honor of the eminent mycologist Paul Allen. The purpose of the fund is to bring in guest speakers or visiting scientists to advance the department's research mission. This new fund provides a great opportunity for the Bushnells and others to recognize and honor Dr. Allen's many teaching and scholarly contributions. Dr. Allen's wife, Mary, who lives in Madison, was especially appreciative of the Bushnell's gift. If you would like to join the Bushnells in remembering Paul J. Allen and his many accomplishments, please contact Ann Dingman at UW Foundation.

Eldon Newcomb Graduate Fellowship Fund

Emeritus Professor Eldon Newcomb and his wife Joy generously endowed this fund, which provides a fellowship for a graduate student and also some research money. This fellowship, initiated in 2008, helps support students over the summer, a period when many research projects make rapid progress given few interruptions. While the fellowship was set up by the Newcombs to aid students, others have found the fund to be a fine way to honor Eldon and his tremendous accomplishments in Botany. For example, this year, Dr. **Barry Palevitz**, Emeritus Professor of Botany at the University of Georgia and former Newcomb student, kindly helped to grow this fund. The current Eldon Newcomb fellow is **E. Jane Bradbury**, who is studying the domestication of the Andean edible tuber, Oca.

Judith Croxdale Memorial Fund

The Judith Croxdale Memorial Fund was established by friends and family of Judith Croxdale after her untimely death in 2001. The fund provides support for female graduate students in the Department of Botany. This year the fund was enhanced by a bequest from fern biologists **Rolla and Alice Tryon** (née Faber). Alice completed her MS thesis in Botany at UW, later completing her Ph.D. at Washington University in 1952. In 1958, Alice and her husband Rolla, joined the staff of the Gray Herbarium at Harvard University. It is fitting that Alice and Rolla chose to contribute towards a fund dedicated to supporting graduate students. As noted in the obituary published in *American Fern Journal* (2009; 99(4) 231-235): "Together Alice and Rolla mentored a group of graduate students who have gone on to be prominent in pteridology." We are lucky to count Alice Tryon among our alumni and happy that, thanks to the Tryon's bequest, more young women will gain financial help to complete their graduate studies. The current Croxdale awardees are **Alexandra Chanoca** who is studying how anthocyanins are synthesized and transported to the vacuole and **Abigail Mazie** who is studying trichome evolution in Physarieae.

Ben Grady in the field (photo: Ben Grady)

Brian Sidoti (r) and Teodoro Clase collecting *Tillandsia* specimens (photo: Brian Sidoti)

Flora Aeterna Fellowship

Thanks to the generous support of an anonymous donor, we were able to initiate a new graduate student fellowship to support research that helps to conserve plant species that are native to the United States. The award includes a fellowship and research funds. The inaugural award was split between **Benjamin Grady** who is studying rare *Eriogonum* species (Polygonaceae) in the southwest and **Brian Sidoti** who is studying *Tillandsia* (the group that includes Spanish moss) in the southeast.

GREENHOUSE EXPANSION PROJECT

The Department of Botany has been honored with a lead gift to establish the Theophrastus Fund for the Botany Outreach Center and Conservatory. This fund is named in honor of Theophrastus (c. 371 - c. 287 BC), the most important and influential botanist of antiquity. Theophrastus is credited with maintaining the first botanical garden. His two most famous works, *De historia plantarum* and *De causis plantarum*, defined the starting point for scientific Botany.

With this generous gift, we have launched an ambitious campaign to support the planning and construction of new plant growth facilities for the Department of Botany, including a new conservatory-style greenhouse, a research greenhouse, an outreach classroom, and high-tech plant growth chambers.

(photo: Wikimedia user Esculapio)

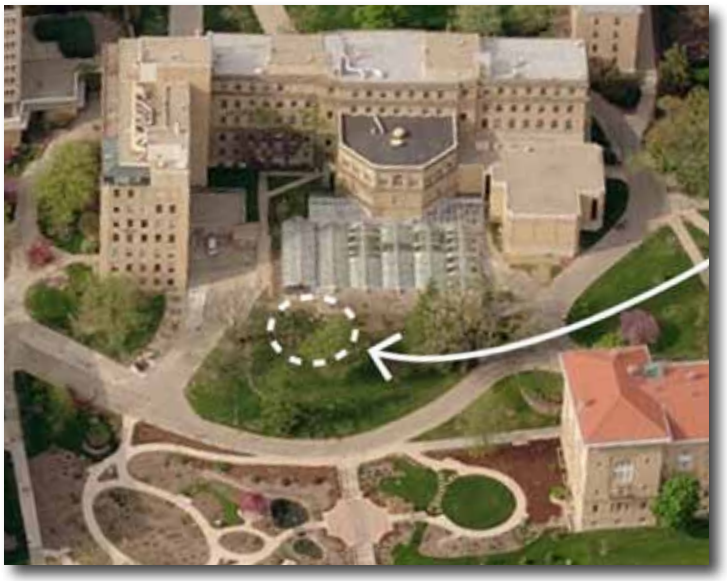
This new flagship growth facility will serve as a dynamic classroom for university students seeking to develop an in-depth understanding of the botanical sciences. The conservatory will give school children and the public the opportunity to observe the wonders of a tropical rain forest without leaving Madison. And researchers will use the renovated research greenhouse and growth chambers to conduct important botanical research and draw students into the latest aspects of plant science being conducted here.

The proposed conservatory will be the new gateway to the greenhouses. Not only will it provide a beautiful space better suited to housing the teaching collection and hosting groups of students, but it will also provide a direct entrance to the greenhouses, which currently must be reached through the Birge Hall basement. The conservatory will allow greenhouse #2 to be renovated and converted to research needs.

The renovation of an outreach classroom adjacent to the greenhouse will create a space better suited for hosting class visits, school-groups, or evening courses. And the head house renovation will improve working conditions to meet modern health and safety standards for the greenhouse staff.

Controlled-environment growth chambers are an essential research resource and are heavily used by many of the Botany labs. Three new walk-in chambers and eight new reach-in chambers will allow for excellent environmental control, including both high-light and elevated carbon-dioxide environments, accommodating a diversity of new experiments.

This project is a priority for the department, and we would love to have your involvement. To find out more and to make a gift, please contact Ann Dingman at 608-265-9954 or Ann.Dingman@supportuw.org; or visit: http://botany.wisc.edu/conservatory.htm


site of the proposed new botany conservatory (photo: bing.com)

David Baum Lab

In Fall 2010, the Baum lab said farewell to **Raul Correa** (Genetics) who returned to southern California for a post-doc at UCSD. We welcomed postdoc **John Stanga**, a UW Genetics alum who continues Raul's work on transgenomics. Graduate student **Talline Martins** received a prestigious NSF Postdoctoral Fellowship to continue her work on petal spot formation in *Clarkia* at Duke U. after completing her PhD in August 2011. **Abigail Mazie** received a Judith Croxdale award and continued her investigation of trichome evolution in Physarieae (Brassicaceae). Graduate student **Pulikesi Chittu Rajangam** celebrated his advance to candidacy and continued his work on meristem identity genes in Brassicaceae. **Alison Scott**, who completed her first year in the Botany PhD program, received an NSF Graduate Research Fellowship and initiated her research on redwood evolutionary history. Undergraduate **Aaron Roznowski** received a Frits Went award to investigate a transgenomics clone that affects fitness in *Arabidopsis* and **Pa Yiar Khang** was awarded an NSF-EDEN research internship. Baum lab members participated in a number of outreach activities for families and children, including Darwin Day and Science Expeditions and hosted two high-school interns in summer 2011.

Ken Cameron Lab

The Cameron Lab (l to r): Alejandro Zuluaga, Brian Sidoti, Rafael Arevalo, Bucky Badger, Deniz Aygoren and undergrad Lindsay Zeihen. (photo: Ken Cameron)

The Cameron Lab split their time among field, library, herbarium, and laboratory studies of monocot systematics, especially clades within Orchidaceae, Smilacaceae, Bromeliaceae, and Araceae. Our newest graduate student, **Alejandro Zuluaga**, has a fellowship from the Colombian government. He intends to research species limits and phylogeny within the Neotropical genus *Monstera*. Turkish graduate student, **Deniz Aygoren**, got married during winter and completed her MS research on *Spiranthes*. **Brian Sidoti** collected samples of *Tillandsia* in Puerto Rico and Mexico and received the department's first *Flora Aeterna* fellowship. **Rafael Arevalo** returned home to collect *Mormolyca* specimens in Colombia--and also in Panama and Costa Rica. His research was funded by the American Society of Plant Taxonomists and a significant grant from the Sacramento Orchid Society. We welcome two new graduate students for fall: **Matthew Pace** and **Giovanny Giraldo**.

Pan Li, a visiting graduate student from China, has a paper in press with *Taxon* describing a new species of *Smilax* and is helping Dr. Cameron and several outstanding undergraduates sequence at least two genes from every vascular plant species in the Wisconsin flora (data are in hand for >800 native species, except those in Cyperaceae and Asteraceae). This project is part of the collaborative 5-year NSF-funded project focused on "dimensions of biodiversity" with **Givnish, Sytsma** and **Waller**. Ken Cameron traveled to China and Panama, published chapters in two books about *Vanilla*, and spoke at Botany2010 and the International Plant Barcode of Life.

Eve Emshwiller Lab

"Understanding of how crop diversity is distributed geographically is critical for conservation of that diversity, and it can be improved by incorporating GIS techniques, spatial statistics and new methods developed in landscape genetics." This statement describes the research of **Eve Emshwiller** with Bryan Epperson of Michigan State U, using DNA fingerprint (AFLP) data from samples of the Andean tuber crop "oca," *Oxalis tuberosa* from Peru. Eve's 2010 NSF Grant explored *Oxalis* phylogeny and biogeography with researchers from Brazil, Uruguay, South Africa, and Germany. PhD student Andrew Gardner completed a paper on the biogeography and breeding system evolution of the bulb-bearing Oxalis species of the Americas and with collaborators collected >30 species of *Oxalis* in Brazil.

Papers were published in *Economic Botany* by former MS student **Katie Konchar** on variability in alkaloid content in *Fritillaria cirrhosa* bulbs and by PhD student **E. Jane Bradbury** on oxalic acid content in oca tubers. Jane is now measuring organic acids in the tubers with more precise methods (HPLC) and comparing molecular markers (microsatellites) between "sweet" and "bitter" cassava, *Manihot esculenta*, which have low and high levels of cyanide, respectively.

Brian Walsh is generating DNA sequence data for *Chenopodium* species, comparing domesticated crops (e.g., quinoa) with wild and weedy taxa. **Elizabeth Georgian** is studying phylogeny and ethnobotany of Himalayan *Rhododendron* species. **Diana Peterson** is studying wild-rice (manoomin; *Zizania aquatic*) in Wisconsin. **Lauren Moscoe** is refining her project on social factors in Peru and Bolivia affecting oca diversity in traditional Andean agriculture.

We said our appreciative goodbyes to undergraduate researchers **Anna Becker, Brittany Nanzig, Rollin Reinhart, Jean Shin,** and **Alyssa Tennies**, and appreciate the continued help of **Andrea Miller, Brian Pellatt**, and **Sarah Soon**.

Simon Gilroy Lab

The Gilroy lab has seen a lot of comings and goings this year. **Peter Dowd** has been a long-term postdoc in the lab and we are all sorry to see him go. **Amy Briggs** joined the lab as a postdoc last year and we are excited that she is starting a visiting assistant professorship at Beloit College this summer. **Mike Gardner** has been an undergraduate researcher for many years and we are pleased that he has accepted a life science fellowship at the University of Missouri-Columbia where he will start graduate school in fall. Meanwhile, **Dr. Masatsugu Toyota** has joined the lab from Japan. His research revolves around understanding gravity perception in plants, and he brought with him a fantastic new centrifuge microscope, which allows us to make movies of plant responses as they are subjected to increasing levels of gravity. In very exciting news, PhD student **Alexandra Chanoca** has successfully built a protein sensor that allows us to see the patterns of signals being carried inside intact plants by the regulatory protein calmodulin. This has the potential to unlock many secrets about how a plant knows to mount specific responses to stimuli ranging from pathogen attack to fluxes of internal hormones. This summer we also have two great undergraduates in the lab. **Amanda Miller** is working with **Dr. Won-Gyu Choi** on plant responses to flooding funded through a Summer Undergraduate Research Fellowship from the American Society of Plant Biologists, and undergraduate student **Kholdon Boydston** is working on understanding hormone signaling in rice with a Frits Went award from the Botany Department.

Botany Department faculty, students and family in front of a giant mountain ash (*Eucalyptus regnans*) in Victoria, Australia after the IBC. Left to right: Emily Sessa, Mercedes Ames, Jon Sessa, Asst. Prof. Eve Emshwiller, Bryan Drew, Prof. Ken Cameron, Stephanie Lyon, Ezra Lyon, Akiva Lyon and Prof. Tom Givnish. (photo: Tom Givnish)

Tom Givnish Lab

Several members of the Givnish lab were invited presenters at this summer's International Botanical Congress this summer in Melbourne, an unusual honor. **Emily Sessa** spoke on phylogeny and ecology in the fern genus *Dryopteris*; **Stephanie Lyon** talked about phylogeny and biogeography in the orchid genus *Corybas* sect. *Corysanthes* in Australia. Stephanie and Emily were fortunate in earning several extramural awards this year, including NSF doctoral dissertation improvement grants for both, grants from the American Orchid Society and Australian Orchid Foundation, a research grant from the Botanical Society of America to Stephanie, and an NSF MicroMORPH training grant, a Torrey Botanical Society graduate research fellowship, an IBC travel grant from the American Fern Society, and half of next year's O. N. and E. K. Allen Memorial Fellowship for Emily.

At IBC and a subsequent workshop at the Australian Royal Botanic Gardens, post-doc **Mercedes Ames** gave presentations using whole-chloroplast DNA sequences to investigate higher-order relationships in orchids. **Tom Givnish** organized IBC symposia on the evolution of bromeliads and monocots with colleagues John Conran from Adelaide, Georg Zizka from Senckenberg, and Katherina Schulte from Cairns, and spoke on bromeliad evolution, biogeography, and rates of diversification. He also led lab members (and **Brent Berger** and **Bryan Drew** from the Sytsma lab) on a three-day ecological tour of Victoria after the IBC and an eight-day research trip by several members of this group in Western Australia, where they worked in some of the most diverse temperate plant communities on Earth.

Phil Gonsiska earned his Ph.D. this year and is currently working for UW; **Kate Gerndt** continues her research on the structural habitat of the endangered pine marten. **Bob Wernerehl** is drawing to completion his research on the ecology of prairie grasses.

Linda Graham Lab

The Graham lab welcomes **Anchittha Satjarak**, a new graduate student from Thailand, who will study freshwater algae. She will briefly overlap with **Reese Zulkifly** (Malaysia) who is completing his Ph.D. studies on freshwater periphyton. This past year, Reese, with Linda and **Jim Graham** and several engineering colleagues, co-authored two articles on the uses of cellulose and lipids extracted from periphyton communities in the production of renewable biofuels. Reese also presented his research at two national conferences. **Benjamin (Izak) Smith** completed the requirements for his master's degree, working on technological applications of freshwater periphyton. **Christopher Cardona-Correa** (Puerto Rico) prepared a poster about his experimental studies of peat moss structural and physiological responses to changes in temperature and UV for the International Botanical Congress (IBC) meetings in Melbourne, Australia. **Linda Graham** has been working with Prof. Erica Young at UW-Milwaukee, funded by a UW-Madison/UW-Milwaukee Intercampus Research Incentives Grant program, on their project "Freshwater algal communities used for wastewater bioremediation and bioenergy production." This includes the analysis of microbial communities with the use of next-generation sequencing technologies, which is basic research needed to implement applied technologies. Linda and Erica described these technologies at the IBC meetings.

The department gathered at the gazebo to introduce new lab members and enjoy a perfect evening at the Botany Fall Party on September 7.

Sara Hotchkiss Lab

The Hotchkiss lab is busy, with postdoc **Michael Tweiten** in Hawaii, grad students **Jennifer Schmitz** visiting a lab in Regina, **Shana Ederer** in Door County, **Shelley Crausbay** completing laboratory analyses, and undergraduates **Cara Ladd** and **Jake Siewert** studying Wisconsin fire and lake-level history. Scientists **Patricia Sanford** and **Marjeta Jeraj** continue their studies of zooplankton and archaeobotany. We welcome two new graduate students for fall: **Kristin Michels** and **Soo Hyun Kim**.

Several new projects are underway. **Shelley Crausbay** and **Sara Hotchkiss** received a grant from the Pacific Islands Climate Change Cooperative, entitled: "Predicting future distribution of cloud forest and high-elevation species in Hawai'i: integrating modern and paleoecological data to plan for climate change." **Jennifer Schmitz** and **Sara Hotchkiss** received funding from the National Science Foundation to study "Drought as a trigger for rapid state shifts in kettlehole ecosystems", with Robert K. Booth and Alex Ireland of Lehigh University. The project will focus on lakes and floating peatlands in the Northern Highlands Lake District of Wisconsin. Jennifer Schmitz's proposal "Effects of fire and logging on carbon accumulation rates in northern Wisconsin lake sediments" was funded by the Geological Society of America and also selected for the Robert K. Fahnestock Memorial Research Award, given annually to the student who submits the most outstanding research proposal to GSA in the field of sediment transport or related aspects of fluvial geomorphology. Congratulations, Jennifer!

Marisa Otegui Lab

The Otegui lab continues to explore how plant cells transport proteins and membranes between organelles. With NSF funding, postdoc **Christoph Spitzer** continues

work on endosomal factors and how they regulate the degradation of plasma membrane proteins such as channels and receptors, exploring how endosomal proteins may also control protein and membrane trafficking in chloroplasts. PhD student **Rafael Buono** is working on another group of endosomal proteins called IST1-12 and analyzing the diversification of this protein family in plants. Rafael and postdoc **Francisca Reyes**, are characterizing a novel, plant-specific protein that regulates the degradation of brassinosteroid receptor molecules in *Arabidopsis*. In addition, Francisca leads a project supported by USDA on corn endosperm development. She recently found and characterized a novel mechanism that delivers endoplasmic reticulum material to the vacuole. Postdoc **Hannetz Roschzttardtz** joined the lab in January and is working on genes involved in secondary cell wall formation in a project funded by the Great Lakes Bioenergy Research Center (USDoE). His aim is to identify molecular mechanisms that control biomass quality for conversion into biofuels. In the context of this project, undergraduate **Teju Dittakavi** received a Frits Went award to study a group of plasma membrane proteins that are important for secondary cell wall formation and lignin deposition in xylem cells. This year we were pleased to host Dr. **Wenche Johansen**, from Norway to work on the molecular basis of epidermis differentiation and 3D growth in plants. Three undergraduates, **Brittany Sheldon**, **Alexandra Musial**, and **Jesse Judkins** conducted research in the lab. Recently, we collaborated with Erich Grotewold (Ohio State U.) in an NSF study of how anthocyanins (the bright red and purple pigments of many flowers and fruits) are synthesized and transported to the vacuole.

In February the Botany and Zoology departments hosted a joint poster session in the Birge Hall lobby to help recruit new graduate students.

Ken Sytsma Lab

The Sytsma Lab completed the collaborative study of Angiosperm phylogeny funded through NSF - A Tree of Life grant, involving 660 species (330 families) using 17 genes from the three plant genomes. The work is among the largest phylogenetic studies ever conducted and was published in *American Journal of Botany*. Studies of *Clarkia* (Onagraceae), Bromeliaceae, and Ericales are underway in the lab. In collaboration with **Cameron**, **Givnish**, and **Waller** and with the support of NSF Biodiversity funds, we are assembling a complete DNA-barcode of the Wisconsin flora and using a phylogenetic framework to assess community assembly and change. During 2010-2011 **Bryan Drew** completed his PhD study of the South American and Californian mint genus *Lepechinia* and relatives. He presented the work at the IBC in Melbourne in July. Graduate student **Ben Grady**, a recipient of the Flora Aeterna Fellowship, received additional funding from USDI for his study of adaptive radiation onto different soil types in Western U.S. *Eriogonum* (Polygonaceae). Graduate student **Brent Berger** continues his phylogenetic and biogeographic studies of Myrtales and the pantropical family Combretaceae, and he began new work on phylogenetics and community assemblage of New World vs. Old World mangroves. First year graduate student **Daniel Spalink** began both his molecular systematic and ecological study of bulrushes with a field trip throughout eastern North America. The lab welcomes graduate student **John Zaborksy** in fall to study radiation of the Malagasy *Uncarina* (sesame family).

Don Waller Lab

This past semester brought many changes for the Waller lab with new faces appearing and old friends leaving to begin new projects. We welcome visiting scholar Professor **Chengke Bai** from Shaanxi Normal U., China, and Postdocs Dr. **Grégory Sonnier** from Université Picardie Jules Verne, France, Dr. **Sara Souther**, a 2011 recipient of a David H. Smith Conservation Research Fellowship, and graduate student **Daijiang Li**. We also welcome back long-time collaborator (Botany PhD) Dr. **Bil Alverson** as Lab/Data manager for the NSF-funded Dimensions of Biodiversity project in collaboration with **Cameron, Givnish**, and **Sytsma**. We bid a fond farewell to Dr. **Sarah Johnson**, who begins an assistant professorship in Biology and Natural Resources at Northland College, replacing, Dr. **James Meeker** (Waller lab alum, '93), to whom we wish a happy retirement. We celebrated the PhD defense of **Michelle Haynes** (recently named a Presidential Management Fellow) and MS defense of **Lisa Maas** (moving to USDI Fish and Wildlife Service.)

We also congratulate PhD student **Alison Scott** for receiving an NSF Pre-doctoral Fellowship to jumpstart her research on California redwoods and MS student **Katie Frerker** for receiving a Davis Research Award to assess deer impacts in the woods of northern Wisconsin and Michigan's Upper Peninsula. This summer, several undergraduates helped collect and enter data on all plant functional traits and measured genome sizes for all those plant species. **Evelyn Williams** continued her work on *Botrychium* ferns in the U.P., despite the wet spring and drowned sites.

Joy Zedler Lab

Recent graduates: **Erik Olson** and **Jim Doherty** finished MS degrees in 2010, and **Beth Lawrence** completed her PhD in spring 2011. Erik (co-adviser, Steve Ventura) combined geospatial modeling and field sampling to understand how Eurasian milfoil invaded the Chippewa Flowage (paper for *Aquatic Botany*). Jim revisited a 1997 experiment at Tijuana Estuary and showed that salt marsh productivity is no longer correlated with plant diversity and that "biodiversity-ecosystem function curves" depend on many variables, not just time (in press, *Ecological Applications*). Beth learned that sedge tussocks grow more quickly than expected (beginning in 2 yrs; July 2010 *Ecological Applications*, cover photo) and they store significant amounts of carbon. **Charlie Tucker** completed his MS degree in Ecological Restoration - the first to graduate in this "professional" degree program - and spent the summer helping the US Fish and Wildlife Service assess habitat for turtle reintroduction.

Joy obtained EPA funds to test how native wetland plants might treat urban runoff that flows through the

Arboretum toward Lake Wingra. Joy's graduate students assessed unintended negative impacts of these facilities (**Hadley Boehm**, MS, summer 2011) and potential for employing "teams" of complementary plants (**Jim Doherty**'s PhD research), while students of Steve Loheide (Civil and Environmental Engineering) and Anita Thompson (Biological Systems Engineering) tested effects of native plants on soil erosion, water quality, and water infiltration. Several undergraduates accomplished mentored research at the same time. It was an exciting and productive year!

Help the Botany Department conserve resources

Would you like to receive the Botany Alumni Newsletter electronically and in color? If so, please forward your email address to:
nmclaughlin@wisc.edu

Electronic delivery saves natural resources, saves the department money on printing and postage, and gets the news to you quicker!

EMERITUS FACULTY NEWS

From Wayne Becker

Since retiring from the Botany Department in 2003, I've had the opportunity to serve as a Fulbright scholar at the Charles University in Prague (2004), to teach for a semester at the KwaZulu Natal University in Durban, South Africa (2008) and to give occasional guest lectures at the Florida Gulf Coast University in Fort Myers, FL, where Pat and I spend the winters since retirement. I've also "retired" from involvement in the latest (7th; 2009) and subsequent editions of *The World of the Cell*, the textbook that was first published in 1986. Despite my retirement, I continue to hear from users of the textbook, both teachers and students, and I am amazed at the diverse locations from which those contacts come. Much of my work on the text has been taken on by **Greg Bertoni**, one of my PhD students. Shortly after my retirement, we moved from Madison to a lake home near Waupaca, Wisconsin, a location we very much enjoy. Contact is always welcome; I can be reached most readily by e-mail: wbecker@wisc.edu.

From Ray Evert

It seems impossible that ten years have gone by since I became an emeritus professor. I do not use the term "retired" because I have been as busy as ever, nor do I feel that I "have left the department." Some highlights since January 2001: Mary and I became grandparents for the first time; we now have three grandsons. This past January we celebrated our 51st anniversary. In 2005, the 7th edition of "Biology of Plants" (Freeman) was published, and **Susan Eichhorn** and I are working on the 8th edition, due out in January 2012. In 2006, Wiley published the first part of "Esau's Plant Anatomy" by yours truly, with the assistance of Susan Eichhorn. I have continued my collaboration with botanists at the University of Sao Paulo, and, in October 2008, I gave a short course there on the root.

From Hugh Iltis (and correspondents on his behalf)

Hugh Iltis was to be honored at the Crop Science Society of America conference in San Antonio on the "Mysteries of Maize" but is unable to attend since his wife Sharyn required surgery for a brain tumor (now recovering, thankfully). His presentation title, "From a New York taxi driver to dreams of perennial maize--Serendipity in the unlikely discovery of Zea diploperennis," suggests that despite health issues, Hugh has not lost his touch.

From Robert Kowal (abridged)

I came to the Department of Botany in September 1971 and retired in 1997. The department has been very kind, allowing me to retain my office and continue to work on the biosystematics of *Packera* (Asteraceae). In January 2010, I had my left hip-joint replaced due to osteo-arthritis. After three weeks in a rehabilitation center, I had my house renovated to make it warm, bright & cheerful.

Packera is now a segregate of the humongous genus *Senecio*. DNA phylogenies show that the 60 some species of *Packera*, which are largely North American, are not closely related to typical *Senecio*'s but rather to the genus *Pericallis* of the Canary Islands and *Emilia* of Africa. An outgrowth of the research of **Alison M. Mahoney**, my last PhD student, is a paper (Novon, 2008) describing three varieties of the widespread North American species of *Packera paupercula*. In September an article coauthored with Emmet Judziewicz and Joan Edwards will appear describing a hexaploid endemic of Isle Royale in Lake Superior, *Packera insulae-regalis*. It was in 1972 when Mike Nee, now a researcher at the NY Botanical Garden, brought a plant that he thought might interest me. I finally got enough information to support describing it as a new species.

Address Correction and Alumni News

We would love to hear from you! Please send us news that you would like to share in the next Alumni Newsletter. Photos and news clippings are welcome.

And if your address has changed, please keep us informed so that we can keep you in the loop.

email updates to: botgrad@ls.wisc.edu

or mail to:

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430 Lincoln Drive
Madison, WI 53706

ALUMNI NEWS

Dr. **Cathi Bonin** (MS 2007) received her Ph.D. degree in 2011 at Virginia Tech, working on grassland ecology, and recently accepted a postdoc position at Ohio State University with Dr. Rattan Lal, Distinguished University Professor in the College of Food, Agricultural, and Environmental Sciences. Cathi will be working on the production of biofuel feedstocks including native grasses and prairie mixtures. She is happy to be returning to the Midwest!

Sally Gallagher (MS 2009) is a Wetland Mitigation Research Specialist for a joint project between the UW-Madison Arboretum and Wisconsin Department of Natural Resources.

Dr. **Michelle Haynes** (PhD 2011) is a Presidential Management Fellow (Class of 2011) with the US Fish & Wildlife Service. She accepted a position at the National Conservation Training Center in Shepherdstown, WV where she is developing climate vulnerability assessment and adaptation coursework for federal employees.

Dr. **Rachel Schmidt Jabaily** (PhD 2009) is leaving her postdoc at Old Dominion University with Dr. Tim Motley in January for an Assistant Professorship at Rhodes College in Memphis, TN. She will be primarily teaching evolution and plant biology and will be establishing a plant systematics research program for undergraduates in the Biology Department.

Dr. **Sarah Johnson** (PhD 2011) completed a postdoc position at UW–Madison with Don Waller and began an Assistant Professorship in Fall 2011 at Northland College in Ashland, WI.

Katie Konchar (MS 2009) is a research specialist working on Himalayan ethnobotany with Dr. Jan Salick at the Missouri Botanical Garden. She is studying the vegetation dynamics and human interactions with climate change in high alpine environments.

Dr. **Beth Lawrence** (PhD 2010) is a postdoc at Loyola University in Chicago, IL. She is working on a project aiming to combine the management of *Typha* x *glauca*-invaded stands in northern Michigan with the production of biogas, a renewable energy source.

Dr. **Jay Walker** (PhD 2006) is a faculty member at Oklahoma State University in Tulsa, OK where he is teaching and helping to establish the nascent Oklahoma Centennial Botanical Garden.

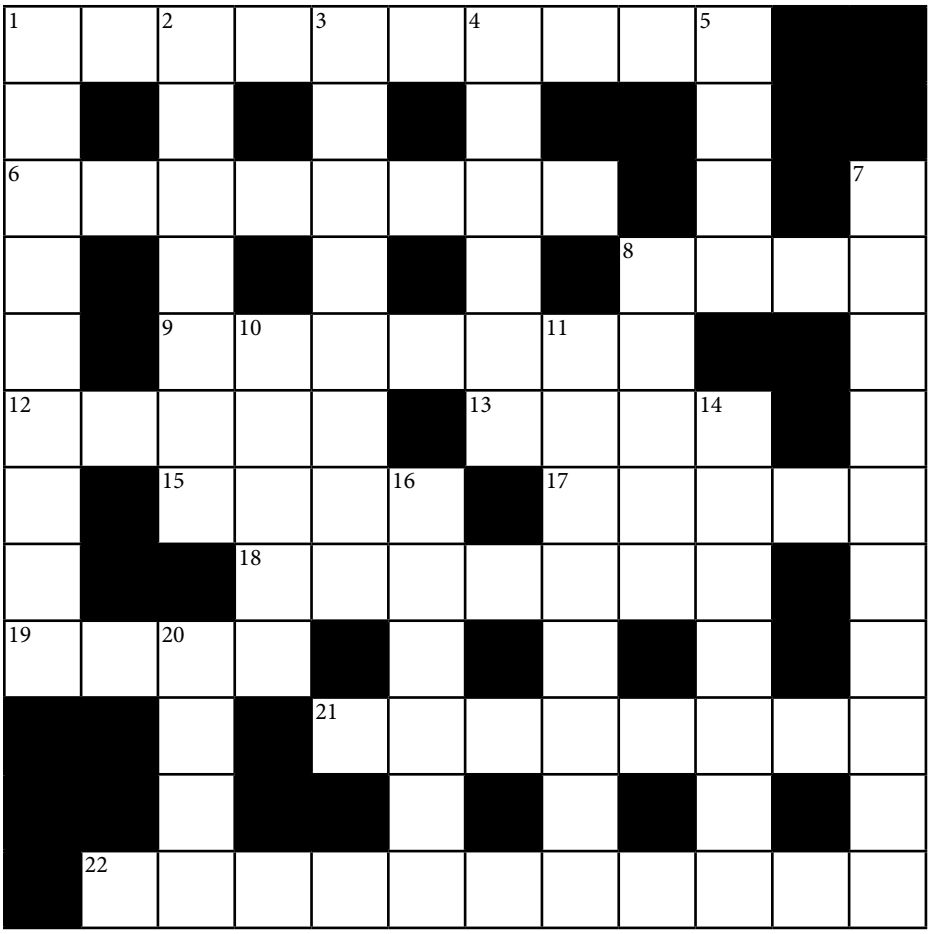
IN MEMORIAM

James "Jim" Fralish, 72, died Aug. 30, 2011, of a brain tumor. Born in Berlin, WI, Dr. Fralish received his B.S. and M.S. degrees in Forestry from Michigan State U. and his Ph.D. in plant ecology from UW-Madison. In 1969, he joined the Forestry Department of Southern Illinois University-Carbondale, where he taught and conducted research until his retirement in 1996. Dr. Fralish published many articles on plant ecology and three books, *Taxonomy and Ecology of Woody Plants in North American Forests*, *Savannas, Barrens, and Rock Outcrop Plant Communities of North America* with Roger Anderson and Jerry Baskin, and *John Curtis. Fifty Years of Wisconsin Plant Ecology* with Robert McIntosh and Orie Loucks. He was a senior editor of the *American Midland Naturalist* and a long-term supporter of UW's Kemp Station and UW Ecology alumni reunions at ESA conferences. He is survived by his wife of 47 years, Kathleen, two children, and five grandchildren.

Donald Ugent, 77, botanist and professor emeritus at Southern Illinois University-Carbondale (SIU-C), died Friday, Sept. 2, 2011, in Carbondale. He grew up in Milwaukee and received his B.S. (1956), M.S. (1961), and Ph.D. (1966) in botany, with a minor in genetics, from UW-Madison. His PhD research focused on the biosystematics and crop evolution of potatoes. Professor Ugent was acclaimed as an ethnobotanist, taxonomist, geneticist, and authority on the origins of wild and cultivated potatoes. He did much to promote economic botany and tropical research on an international scale and advanced the study of botany both at SIU-C and through informal contacts with many students. He is survived by his wife of 49 years, Vivian, two children and three grandchildren.

BOTANY CROSSWORD

Contributed by David Baum



Across

1. Fungal fruiting bodies
6. Poison-ivy, for example, to many people's skin
8. A close-cropped, graminaceous monoculture
9. The laxative-producing *Rhamnus purshiana*
12. The central part of a root or stem, usually including the vascular tissue
13. USDA abbreviation for *Lepuropetalon spathulatum*
15. Suffix with: paleo-, andi-, calci-, and histo-
17. Botanist, and pioneer in palynology, Paul Bigelow
18. Plant used as an herbal remedy by an opthalmologist
19. Indigo and Annato
21. Referring to minute projections on the surface of a stigma, petal, or leaf
22. *Lepidium virginicum*, commonly

Down

1. *Hackelia* common-name
2. Fragrant rootstocks of *Iris germanica*, used in perfumes and cosmetics
3. How the blunt or rounded tip of a plant organ is shaped
4. A plant that completes its life-cycle in less than 12 months
5. Stalk of a moss capsule
7. Triploid tissues in angiosperm seeds
8. Essential item for confocal microscopy
10. Succulent plants cultivated as ornamentals and for their gels
11. What one might be doing when your #8 (across) gets bare patches
14. Species epithet in *Hoya*, *Nepeta* and other genera, meaning kneecap
16. The most widely-cultivated plant in Pedaliaceae
20. As implied by its common name, the effect of *Viola tricolor* on your heart

Submit your answers to Andrea Herr-Turoff at botgrad@ls.wisc.edu by December 15, 2011 to be entered in a drawing for Ken Cameron's Vanilla Orchids: Natural History and Cultivation.

Solutions will be posted after December 15th on the "Alumni" link on the Botany home page, www.botany.wisc.edu



The new Geophyte Garden at the east end of the Botany Garden provided early color and cheer from late March through the beginning of June.

The student organization Japan Tsunami Relief, represented here by Sachiko Kondo, donated a cherry tree to the Botany Garden as a memorial for those affected by the tsunami. Garden and Greenhouse director Mo Fayyaz helped to select the tree and organize the planting. Look for it in bloom in the west end of the garden next spring!


Two other trees, a Persian Ironwood (*Parrotia persica*) and a Korean Sun Pear (*Pyrus fauriei*), were donated by a generous anonymous benefactor. Thank you!

Look for them in the southeast end of the garden.

Another titan arum bloomed in the greenhouse this year. Titan II peaked on June 15th, 2011, with a lovely purple and blue spathe and a pale green spadix.

DEPARTMENT OF BOTANY ANNUAL FUND DRIVE

The Botany Department requests your support for the following featured funds:

UW Foundation Accounts (Department of Botany) Funding Priorities

- ☐ Theophrastus Botany Conservatory and Outreach Center Fund—supports the planning and construction of new growth facilities for the Department of Botany, including a conservatory, classroom, and growth chambers. ***This fund is currently first priority for the department.***
- ☐ Department of Botany General Fund—serves as the department's "general" account.
- ☐ Wisconsin State Herbarium Fund—supports varied activities of the UW Herbarium

For donations to the above funds, please make checks payable to ***UW Foundation*** *and send to:*

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All contributions are tax deductible; many corporations have a matching grants program.

For a full listing of giving opportunities, including all the funds described on page 8, please see:
http://www.botany.wisc.edu/giftgiving/

Botany Garden Commemorative Tile

$520

Five lines of text with 16 characters per line are allowed. Please provide your inscription on a typed or neatly printed page, along with your contact information in case we have questions.

Please make checks payable to **UW Foundation** and send to:

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P.O. Box 78807
Milwaukee, WI 53278-0807

Please note on check: "Botany Tile-Fund 12161478"
Your gift is 100% tax-deductible.

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Submissions are welcome. Please send comments, ideas and photos to:

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