POSIES & PATHOGENS

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Eighteenth Edition April 2007

FROM THE DEPARTMENTAL CHAIRPERSON

Welcome to the 18th edition of Posies and Pathogens! In this, our annual newsletter, we try to keep you informed of the goings on in the Department. Of course, in a Department with the size and breadth of ours, staying informed can be a challenge!

Our faculty and graduate teaching assistants continue to participate in several educational programs (such as the Molecular and Cellular Biology program, Entomology program, and Biology program) in additional to maintaining our own undergraduate and graduate majors.

Our research programs continue to span the spectrum from molecule to organism to field, and include plant biology, ecology, systematics, and pathology. Our field sites are found throughout the state and the globe and include croplands, forests, grasslands, and oceans. Climate change, disease, small RNAs, conservation, biogeochemical cycles, and development are all topics you might expect to hear discussed in seminars, classes, and in the hallway. Our graduate students are integral players in these world-class research projects and our undergraduates also have the opportunity to participate. Last year, I reported that our research effort continued to grow and that we routinely set new records in terms of research expenditures. Last year, we also celebrated another high point. Botany and Plant Pathology had the highest amount of new grants and contracts of any department on campus…any! And we are doing well again this year.

There have been many changes in personnel over the past year, and many of these are chronicled inside these pages. We welcomed new faculty, staff and students, saw many undergraduate and graduate students earn degrees, and said goodbye to some colleagues…sadly, some for the last time.

We always look forward to hearing from former students and colleagues, as well as from friends of the Department. If you find yourself in town or on campus, please stop by and say Hi.

Dan Arp
Professor and Chairperson
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WELCOME NEW FACULTY

Erica Bakker joined the Department of Horticulture in June 2006 and has recently joined the Department of Botany and Plant Pathology as adjunct faculty. She was one of the Computational and Genome Biology Initiative hires for the Center of Genome Research and Biocomputing. Her PhD work (Wageningen University, The Netherlands) was in population genetics of oaks. In her postdoctoral work (University of Chicago) she worked on genome-wide analyses of polymorphism patterns and R gene evolution in *Arabidopsis thaliana*. At OSU she plans to work on R gene evolution in related crops making use of *Arabidopsis* genomic resources. She also plans to work on understanding how plants adapt to different environments using genomics tools. Erica is joined by her husband, who works at SAIF in Salem, and their 4 month old son.

Todd Mockler came to OSU in July 2006 to be part of the Computational and Genome Biology Initiative. Following a PhD from UCLA and a post-doc at the Salk Institute for Biological Studies, CA, he is working on three different projects. The first is to understand the mechanisms of how a genome responds to environmental factors, such as temperature and time of day. The second project is to understand how RNA-binding proteins regulate aspects of RNA processing such as alternative splicing, a process that imparts flexibility to genes; one gene sequence can be combined differently to produce different proteins. The third focus is on *Brachypodium*, a grass species that will serve as a genome research model for the related major cereal grain species such as wheat, barley, oats, maize, rice, rye, sorghum and millet as well as potential biofuel crops.

Allen Milligan joined the department in August 2006 as Research Assistant Professor working in the application of cellular-scale molecular and biochemical studies of microalgae, bacteria and corals to environmental questions about ecosystem function and global change. Mechanistic-level knowledge of the oceanic ecosystem gives oceanographers the ability to predict and hind-cast responses to natural and anthropogenic disturbance. His research focuses on algal physiology, macronutrient and trace metal metabolism and the light and dark reactions of photosynthesis. This work is directed towards understanding the physiological mechanisms by which the cycling of elements are influenced by environmental variables.

In December 2006, **James Young** joined the department as an Extension Entomologist & Instructor. James received his BS from SUNY College of Environmental Science and Forestry in Syracuse NY and his PhD from the University of Georgia. He is currently being kept busy running the Insect Identification Clinic, curating the Extension Entomology Collection and reorganizing the Entomology Teaching Collection with Christopher Marshall of the Zoology Department. This year James will be co-teaching “Introduction to IPM” with Sujaya Rao and has proposed two new courses: “Pests of the Farm, Field and Garden” and “Arthropods Important to Veterinary Medicine”. Additionally, he will be teaching “General Entomology” at the University of Oregon this summer. James will be at the 2007 Oregon Master Gardner Association Mini-College where he will be giving a talk and running an Insect Collecting Workshop.

FACULTY NEWS

Michael Behrenfeld's research group continues to be active in studies on marine phytoplankton and their interactions with climate. One of our on-going activities is the generation and distribution of global ocean primary production (i.e., photosynthesis) data using NASA satellite images. This effort is led by **Robert O'Malley** and the fruits of his labor can be viewed at our website: http://web.science.oregonstate.edu/ocean.productivity/. **Julie Arrington** has also been very busy this past year preparing for and conducting field measurements on NOAA ships in the tropical Pacific ocean. These efforts are part of a NASA project aimed at linking field data to satellite data and ocean circulation-ecosystem models. **Toby Westberry**, a post-doctoral associate in the group, has finished two excellent papers this past year, one describing a new model that allows phytoplankton growth rates and biomass to be derived from satellite measurements and another that uses satellite data to map the global distribution of *Trichodesmium*, one of the most important nitrogen-fixing phytoplankton species in the open ocean. **Giorgio Dall'Olmo** and **Kim Halsey** are two new post-doctoral associates in the group this year. Giorgio has a background in aquatic optics and is now studying primary processes involved in plant acclimations to light, while Kim is working on understanding the importance of alternative electron transport pathways in photosynthesis. Dr. Behrenfeld continues to be very involved in the NASA ocean biology and biogeochemistry satellite program and is the principal investigator in the development of a new hyperspectral satellite mission. Publications from the group this year included two articles in *Nature* magazine, one describing the nutrient stressors on phytoplankton growth in the tropical Pacific ocean and based on newly discovered fluorescence diagnostics of iron stress and the other paper reporting how global ocean productivity has changed over the past decade in direct response to climate variability.

David Gent was awarded an OECD-funded fellowship to support travel and research at the Tasmanian Institute of Agricultural Research, University of Tasmania, to develop international collaboration with Dr. Sarah Pethybridge. He will spend two months in Dr. Pethybridge's lab later this year.

Jeffrey Stone has been reappointed a member of the Invasive Species Advisory Committee of the National Invasive Species Council. This committee is comprised of 30 representatives of science, conservation, agricultural communities, state and tribal governments, and industry organizations that are affected by invasive species. Appointments to the committee are made by Dirk Kempthorne, Secretary of the Interior. Dr. Stone studies the mycology, ecology and evolutionary biology of fungal parasites of conifers. His research program is investigating the ecology, epidemiology and biology of *Phaeocryptopus gaeumannii,* the organism that causes Swiss needle cast disease of Douglas-fir, as well as issues relating to the sudden oak death pathogen *Phytophthora ramorum*.

Joyce Loper is the new Editor–in-Chief of *Phytopathology News.* **Teresa Sweat**, who has just completed her PhD (in the MCB program) with **Tom Wolpert,** will be joining Joyce's lab in April.

Marilyn Miller has been working part-time with **Melodie Putnam** in the Plant Clinic on a bacterial problem since 2002 (5 years post-retirement) and for **Valerian Dolja**, micropropagating grapes. In 2006,

she traveled to Naples, Italy to visit the laboratory of Dr. Aida Raio at the University of Naples, who worked on her PhD at OSU, visited Dr. Danny Vereecke at the University of Ghent, in Belgium, met with researchers at UC, Davis to discuss grape propagation and attended the APS meeting in Quebec in July where she presented a poster. She is enjoying her retirement adventures!

Jennifer Kraus is a Research Associate in **Melodie Putnam's** laboratory, and is a Biological Research Technician in **Bob Martin's** group. Jennifer has experience with diverse bacteria, including cyanobacteria, rhizobia, pseudomonads, and lactococci, and also has experience with bacteriophage and plant viruses. In Melodie's lab, she and **Marilyn Miller** have developed molecular diagnostics for *Rhodococcus fascians*, an interesting gram-positive bacterium that causes leafy galls on herbaceous perennials. Jennifer and **Eva Sandberg** (Microbiology Undergraduate and Plant Clinic Undergraduate student) are now examining 16S rDNA sequence diversity among *R. fascians* isolates. In Bob Martin's lab, Jennifer has characterized emerging viruses of ornamentals, and *Raspberry Bushy Dwarf Virus* isolates from new hosts. Results were presented at APS 2006 in Quebec City, and will be presented at APS 2007 in San Diego.

The **OSU Plant Clinic** continues to provide an essential service to Oregon growers, with expertise highly valued both Oregon-wide and nationally. In 2006, 2,264 samples were received and diagnosed by **Melodie Putnam** and **Kelly Collins**. Samples for soil and water pathogen testing, and bacterial identification were received at the beginning of the year, while plant samples dominated from March onwards, peaking in July and August. The majority of samples were received from growers and home gardeners. Just under half of the samples originated from outside Oregon, and of the Oregon samples most came from Clackamas, Marion, Benton and Multnomah counties. Most of the soil, water and bacterial testing samples were associated with ornamentals and together with the woody and herbaceous ornamental samples, these accounted for 72% of the total samples received, confirming yet again the importance of the Plant Clinic to the ornamentals industry. **Melodie Putnam, Marilyn Miller** and **Jennifer Kraus** continued their research on the greenhouse epidemiology of the bacterial pathogen *Rhodococcus fascians* on ornamentals, enabling specific recommendations to help greenhouse growers reduce the risk of infection. With Jennifer Kraus, three new viruses of *Verbena x hybrida* have been described which adversely affect their production as bedding plants. The Plant Clinic took part in the USDA National Soybean Rust Monitoring program with sentinel plots organized by **Cindy Ocamb** and established with cooperators in 6 different Oregon counties; weekly data was monitored and mapped from June through September. **Sue Jepson** has continued to expand the Plant Clinic website (http://www.science.oregonstate.edu/bpp/Plant_Clinic/index.htm) with images of actual samples linked to plant disease diagnoses, fact sheets for select diseases, and resources for growers related to the Plant Clinic research program in bacterial diseases of herbaceous perennials. **James Young** was appointed as Insect Diagnostician in December 2006. **Gene Newcomb** continues as a highly valued volunteer.

Despite numerous mechanical and electrical problems in the now significantly ageing electron microscopes and ancillary equipment, **Al Soeldner** and **Michael Nesson** have been keeping the **Electron Microscope Facility** operating and generally meeting the research and research support microscopy requests that continue to come in from the large and diverse population of OSU faculty and students who require EM services. A group of OSU faculty has been exploring options for replacing the Facility's microscopes and a visit to an instrument vendor's applications facility is scheduled in the near future to acquaint members of the group with the capabilities of today's transmission and scanning electron microscopy tools. Tool replacement will be very expensive but is becoming necessary for the University to remain competitive in the micro and nano research and development fields.

Pat Muir is starting research on a new project, funded by the Joint Fire Science Program, which is focused on "historical sleuthing" -- trying to learn as much as possible about pre-European fire regimes and vegetation conditions in nonconiferous plant communities of SW Oregon. The work will be conducted in cooperation with Dr. Paul Hosten of the Medford District, BLM, and BPP graduate student **Olivia Duren**. The project is intended to ascertain whether the large scale fuel reduction projects being carried out in chaparral and oak woodlands in the Medford area are likely to accomplish ecosystem restoration as well as reduction in fuels. It will also give us the first insight into age structures of chaparral communities, which have received little study in Oregon.

Another year, and another issue (53rd) of the *PNW Plant Disease Management Handbook* edited by **Jay Pscheidt** and **Cynthia Ocamb** (628 pages!) has been published. Jay's work continues on Eastern filbert blight which is found throughout the Willamette Valley. There have been 5 different surveys for this disease over the years and last year they were linked together with animated maps. (Surveys by Gottwald, Cameron, Pinkerton, Johnson, Theiling, Griesbach, Pscheidt and Penhallegon.) These animated maps show the progress of this disease through the main hazelnut production areas from 1958 to 2005. A survey map shows the location of infected orchards or nursery stock as they were actually discovered while a biology map shows the same information but modified to when it is thought infection occurred. It is interesting to watch the disease jump into a new area several years before it was found in that area. You can find the maps at the following web site: http://oregonstate.edu/dept/botany/epp/EFB/location/map1.htm
You may need to download the newest version of "flash player" and then restart your browser to get the animation to work correctly.

Jennifer Parke was the student-selected speaker for spring term at the Department of Plant Pathology, UC Davis where she presented a seminar on colonization of tanoak sapwood by the sudden oak death pathogen, *Phytophthora ramorum*. Jennifer has a joint appointment in Botany and Plant Pathology and Crop and Soil Science. She is the advisor for two M.S. students in Botany and Plant Pathology, **Brad Collins** and **Sunny Lucas**, who are working on *Phytophthora ramorum*, and she co-advises Ph.D. student **Naoyuki Ochiai** (Soil Science) on a soil physics project involving the distribution of *Phytophthora* zoospores and cysts in porous media.

The **McEvoy lab** continues research on the ecology and biological control of plant invasions. We are pleased to welcome two newcomers. Dr. Joe Dauer from Penn State University will be developing mathematical models for understanding, predicting, and managing plant invasions using ragwort as a model system. Dr. Russell Messing from the University of Hawaii will be spending a sabbatical year with us, analyzing a century-long record of introducing natural-enemy species for biological pest-control in Hawaii. **Evrim Karacetin** and **Don Campanella** will be defending their PhD theses sometime next year. **Peter McEvoy** continues to balance teaching in Insect Ecology and Plant Ecology with research centered primarily on two invasive species (purple loosestrife and tansy ragwort), punctuated by professional travel to distant locations (most recently to northern India for a joint Indo-USA workshop on invasions)! Next stop: teaching at Rhodes University in Grahamstown, South Africa in September!

The Priscilla Bullitt Collins Trust (Northwest Conservation Fund, The Nature Conservancy) awarded a 5-year $500,000 grant to a multi-state and Canadian team of scientists and land managers, including three investigators from the Department of Botany and Plant Pathology: **Deborah Clark, Tom Kaye**, and **Mark Wilson** to address critical issues in prairie restoration. Our lab, which is involved in preservation of biodiversity through restoration of native habitats, has just finished the 2nd year of a 5-year grant to investigate restoration of native northwest prairies, particularly the control of invasive species. Invasive plants, especially non-native perennial grasses, pose one of the most critical threats to protected native prairies in the Willamette Valley/Puget Trough/Georgia Straits ecoregion. These prairies are among the most endangered ecosystems in the North America, and support many imperiled species. Our current knowledge regarding the effectiveness of techniques for controlling many herbaceous invasives, especially in sites that retain a significant component of native vegetation, is largely anecdotal or based on results from only a few site-specific studies.

Currently, our research group has gathered pre-treatment field data and one year after treatment data on plant diversity and abundance, along with measurements of soil health and function through collaboration with USDA-ARS. One important component of the project is the assessment of field responses of plants to management treatments using functional groups and key plant traits, thereby allowing generalization of findings across a wide range of sites and conditions. Our lab here at OSU has nearly completed measuring standardized plant traits for 60+ native and non-native species, which will be included in a database of plant traits for Willamette Valley species developed by Mark Wilson. **Rachael Roberts**, a graduate student with Deborah Clark and Mark Wilson, took the lead on making the plant trait measurements and has nearly completed her related thesis project, in which she is investigating the response of different seed mixes of composed of different functional groups in restoration of native prairies. She is also exploring how well plant traits can be used to generalize the field performance of these seed mixes. **Wendy Phillips**, environmental sciences graduate student of Deborah Clark, is beginning a Ph.D. project in which she plans to investigate the role of mycorrhizae in the restoration of native prairies, particularly the rare species.

Calochortus tolmei, native of upland prairie, and nectar source for Fender's blue butterfly

Bill Winner and **Terri Lomax**, long time members of the faculty, took jobs at North Carolina State University effective October 1, 2006. Terri is serving as Graduate Dean and Bill is a Professor in the Department of Forestry and Environmental Resources.

FROM A FORMER CHAIRPERSON

Yes, another year has flown by---it is April again, too soon it seems! I must admit that the pictures in my office are still not on the wall. The good news is that I will soon move one more time within the 138 Strand office complex and I will have more wall space, more windows, and more places for books (that would be good news for Dan Arp); one of my pictures is already on the wall awaiting my arrival.

We have made some changes within the Deans' office in regards to how we are handling oversight for the units and the two associate deans now share oversight for all the academic departments, off-campus branch stations and various other programs within the College of Agricultural Sciences. My "half" includes the branch stations located in Newport, Astoria, Portland, Aurora, Hood River, Hermiston and Madras/Powell Butte. The departments include Agricultural and Resource Economics, Botany and Plant Pathology, Fisheries and Wildlife, Food Science and Technology, Microbiology, Statistics, and Chemistry. Add to that a variety of programs, centers, and institutes and you can get an idea of all the new things I am learning - and how busy I remain.

The university is awaiting the outcome of the biennial legislative process and until that is finished; a lot of time will be spent providing information to those who request it. We are hopeful that higher education will be more fortunate than two years ago and that the states relatively healthy economy will benefit our students but easing their tuition burden. I did manage to engage in a bit of science this past year and enjoyed the opportunity to present a seminar on climate change impacts on plant pathogens at the University of Washington in February.

On to the family news that you have grown to expect. Our youngest, Martha, graduated with a B.S. in Physics from the University of California at San Diego and is now in the Peace Corps. She is posted to Tsintsabis, Namibia where she is teaching math, chemistry and physics to 8-10 graders in a small rural school in northeastern Namibia at the edge of the Kalahari Desert. Needless to say, this has been quite a learning experience for us all and whenever I'm tempted to be bothered by something small, I think of Martha needing to "hitch hike" (a somewhat organized process) about 85 kilometers from the village she lives in to get her groceries each week. Running out of petrol or having a mechanical break down is not news there. The other big change for us is that our grandchildren moved to Corvallis in late August (bringing their parents with them) and now live just one door over from us---it has been great to share their rapidly developing years (Moira, 4 ½ and James, 2) and is a great motivation to leave Strand Hall a bit earlier than I might otherwise.

Over the last year, I've enjoyed visits with many of you as I've traveled around the country or you have had a chance to come to campus. I look forward to more exchanges over the year ahead. Please let me know if you are coming to campus: stella.coakley@oregonstate.edu or 541-737-5264. I'd love to see you and I still know my way to Cordley Hall! Have a great year!

by Stella Melugin Coakley

STAFF NEWS

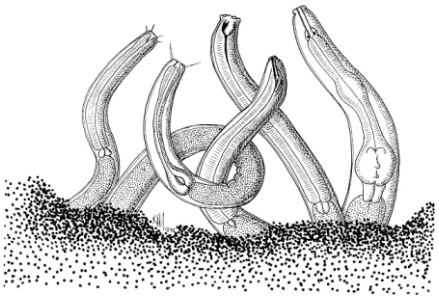
Wow, what can I say from one of the last remaining 'old timers'? I've seen many changes and crazy times over the past 36+ years and this year was one for the record; welcomed new faculty members, said some good byes and shed tears for others. Changes in the classified staff were unreal. In April **Edith Birky** accepted a promotion with Human Resources; in September **April Dring** decided to become a full-time OSU student; and in November **Misty Labahn** joined Forest Resources as their Office Manager. We were fortunate to fill those positions with some great additions. **Katie Remiyac** joined us in October to handle personal services. Katie had been working at the Children's Farm Home. She received her BS in psychology from OSU and was glad to get back to the OSU community. **Kathy Minta** arrived in mid-November with her husband, Steve. Kathy worked for Jefferson County Public Health in Port Townsend, WA. She had previously worked at UC Santa Cruz and was ready to get back to a university setting. Kathy manages travels, student payroll and is our receptionist. **Barbie Gee** joined us in December to handle grants and contracts. She previously worked in the College of Engineering. In mid-June, **Jenni Heinen** joined the Plant Clinic as the Office Specialist. Jenni filled the position that had been vacant for over two years! Truthfully, there were times during this past year, I didn't know if I was coming or going. However, with **Itsue Pfund** keeping us in the money and with **Blaine Baker** spending it, I knew things would balance eventually. Speaking of Itsue, she is back working full time and thinking of the day Rian will finish at Gustavus Adolphus College and Cara starting college in a couple of years, (plus keeping hubby Fred, working at Starker Forests). Blaine has been spending personal dollars as well as departmental, he just finished having a beautiful home built on his and Carolyn's property southwest of Philomath. All in all this has been quite the year, I especially applaud the faculty for their patience and support through the year(s).

A couple of personal changes for me – our son Nick and his wife Kim made me a Grandma in July and I'm lovin' every minute. Kaylee is definitely a keeper -- didn't take long for us all to be wrapped around her little finger! In October, my husband Lloyd decided he had had enough millwork and retired. Believe me these two changes have given me special reasons to take extra time off. However, in case, you're wondering -- retirement isn't in my scope quite yet, as I still have more changes to see and probably cause more troubles in BPP. Take care and smiles to all!!!

by Dianne Simpson

AS THE WORM TURNS

The **OSU Nematode Testing Service** continues to provide an inexorable sequence of thrills. The 1246 samples processed in 2006 did not come close to totaling the 2002 record of 1547, but because those 1547 just about killed me, I was happy with 1246. Species identifications increased: 41% of samples in 2006, compared to 26-27% in 2003 and 2004, were identified to species as well as genus. Knowing the species of a plant-parasitic nematode population permits comparison with trials or records of particular nematode species on particular crop plants and thus more judicious use of treatments. Doesn't that sound great? It was, until I started looking really closely at some of our common "species." What we've always considered one species of lesion nematode may actually consist of two or even three real species. I've sent preliminary specimens to my victims at USDA in Beltsville, MD, for molecular



exploration, which should lead to conclusive species identification. I use so much time determining species identities, however, that there's no time to prepare any more specimens to send to USDA. Uh ... I'm working on this illogicality.

Punctuating the root-knot and lesion nematode routine are the occasional glamour genera. It's always nice to see ring or sheath nematodes, because they're so beautifully spectacular, or to come across dagger or needle nematodes, because they're so large and unmistakable. Spiral nematodes are big and fat enough so that their internal structures are actually visible, so they're fun to key out. Pacific Northwest crops host several spiral species. *Bursapehelenchus xylophilus* dauerlarvae plucked from dissected bark beetle larvae and then cultured on the postharvest *Botrytis* from my lunchtime raspberries provided a pleasant summer interlude. The *ne plus ultra* of 2006, though, was *Subanguina* recovered from golf-green *Poa* roots. Following the leadership of the client who submitted them, I was treated to a personal view of the hook-shaped root galls diagnostic for *Subanguina.*

Speaking of clients, I'm grateful for them entrusting their samples to me. These growers and consultants are the driving force behind increasing knowledge about plant-parasitic nematodes in the Pacific northwest. Without their experience, observation, and willingness to invest in new information, we'd all be just counting the same old worms and treating them in the same old way.

And speaking of new information, please check the new OSU Nematode Testing Service web site composed by Sue Jepson: **http://www.science.oregonstate.edu/bpp/Nematodes/index.htm**

And as the sand drifts through the hourglass .... the worm still turns.

by Kathy Merrifield

OREGON FLORA PROJECT

The mission of the Oregon Flora Project is to be a comprehensive resource on the vascular plants of Oregon. Our team of three staff members, several student workers and volunteers is working hard to gather information and to share it with the public. In spring 2007 we released an updated version of our popular online Oregon Plant Atlas (www.oregonflora.org/oregonplantatlas.html) that increased the number of mappable records by more than 20%! This program lets users create plant distribution maps and access details about each plant occurrence. We also will celebrate a milestone in early summer with the release of the Vascular Plant Checklist. The Checklist represents many years of exacting work studying the plants of our state to determine the appropriate nomenclature for each of the 4,500+ taxa. It also tracks synonyms (alternative scientific names) assigned to plants and will serve as a cross-reference to other identification manuals until the new *Flora of Oregon* is completed.

Later this year, we are introducing an exciting new initiative to launch the production of the book which is our namesake—the new *Flora of Oregon*. This campaign will underwrite a plant systematist and necessary support to guide the writing of the *Flora* and to oversee its publication in both paper and digital format.

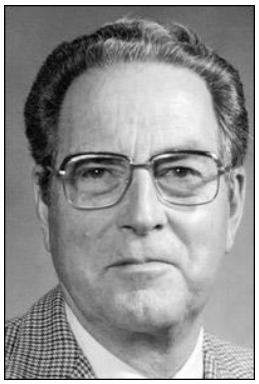
The Oregon Flora Project is proud to count volunteers—both with and without botanical expertise—as an invaluable part of our program. Indeed, without our volunteers and financial supporters, we would have achieved only a fraction of our current progress! Our annual fundraising drives provide almost half of our operating budget, and volunteers have shared their skills and knowledge over thousands of hours. If you are interested in becoming a part of the Oregon Flora Project team through contributions or volunteering, call Linda at (541) 737-4338.

We welcome you to stop by (our offices are across from the Herbarium), contact us (P.O. Box 402, Corvallis, OR 97339-0402), or visit our website (www.oregonflora.org). The Oregon Flora Project would like to share with you our enthusiasm for Oregon's plants!

by Linda Hardison, Coordinator

IN MEMORIUM

William 'Bill' Chilcote



William 'Bill' Chilcote died November 13, 2006 at his home, he was 88.

He was born in Washington, Iowa, to Frank and Ethel Chilcote.

He married Marjorie Osenbrug on June 9, 1946. The two were married 60 years and raised their two sons, Mark and John Chilcote, in Corvallis.

After graduating with a Bachelor of Science in forestry and serving in the U.S. Navy in World War II, he returned to Iowa State University and began his career as an instructor in forestry and earned a Ph.D. in plant physiology from Iowa State University in 1950. He received a professorship in plant ecology in the Department of Botany and Plant Pathology at Oregon State University in 1950 where he taught until retirement in 1982. In 1956 Bill received the Carter Award for Outstanding Teaching. Bill was given a Fulbright Scholarship as a visiting professor in Helsinki, Finland in 1957, where he and his family lived for a year.

Bill's lifelong vocation of studying and teaching plant ecology was also his avocation, and his favorite expression was to look at the "big picture." He was a member of the Union of Concerned Scientists and other environmental organizations. He rediscovered banjo playing after retirement and was a member of the Northwest Banjo Band and Oregon Trail Camp Band.

Bill is survived by his wife, Marjorie, son Mark and wife Vica of Beaverton; son John Chilcote and brother David O. Chilcote of Corvallis; three granddaughters; one great-grandson; two nieces and two nephews.

(Corvallis Gazette Times 11/14/2006)

Bill Chilcote and Oregon Plant Ecology

Bill Chilcote was the sole terrestrial plant ecologist in the College of Science when I arrived in 1968. He came from Iowa State in 1950, with a new PhD in plant physiology (working with crested wheatgrass), to accept a position as an ecologist. His emphasis shifted toward the community level early in his career; always, he was anxious for students to get the "big picture"!

Bill taught six courses each year until 1969: undergraduate plant ecology in fall and spring, a three-term sequence in advanced plant ecology, and plant geography. He continued to teach four of them until retirement. Before the 1970's, there were few specialized courses in ecology, and class sizes were large, with students from throughout basic and applied biology.

Bill emphasized field experience for his classes. Undergraduates were scheduled for 2 hr lecture and 4 hr lab each week, including trips to McDonald Forest and Marys Peak. In addition, there were two full-day field trips, one to the coast, emphasizing sand dunes, and the other across the Cascades into central Oregon. The third term of advanced plant ecology was a field methods course, which evolved into primarily field trips, including one-day marathons into the shrub-steppe east of Bend and to the north coast.

Bill Chilcote showing students the big picture, Cascade Head, May 1979. The student in the foreground seems to have the idea, at least tentatively.

Bill's career included the post-World War II boom in new PhD's and the campaign to have professionals in applied life sciences add a doctorate to their resume'; some of his early graduate students were veterans with substantial work experience. His career also extended well into the post-Earth Day emphasis on ecology; later students were younger and fewer chose topics in applied ecology. In addition to serving as a major professor for at least 37 students, Bill was a favorite choice for other graduate program committees, serving on hundreds.

Bill's graduate students worked on topics from physiological ecology to regional community patterns, centered in western Oregon, but ranging from Alaska to southern California and east to Utah. Major emphases included vegetation and fire patterns on the east slope of the Cascades (at least 5 students), vegetation and succession on Marys Peak (7), and all vegetation types along the Oregon coast (10).

Bill published six journal articles and a Forest Research Lab Research Paper, and many of his students' theses were published without his co-authorship. But Bill's contribution to plant ecology was primarily through his students, both in class and through graduate student research. Bill invested in his students; his office was often occupied by one or more in discussion with him, he spent time in the field with his advisees, and his field trips were based on a thorough examination of the route beforehand. Bill also left a field trip legacy, including his help to me when I arrived. That summer, I taught an ecology-for-teachers class, and Bill spent days with me in the valley, on Marys Peak, on the coast, and across the Cascades, Bill describing what he knew about the vegetation and history of the stops we made, and me furiously taking notes. Those notes were the basis of my trips for several years, and I carried them as a kind of security blanket for some time after that. Even 35 years later, Bill would have recognized most of my trips.

Working with Bill was a delight, and I fondly remember trips with him and the student gatherings he and Marj hosted. I particularly admired Bill's rapport with students, his willingness to spend time with them, and his ability to have them want to spend time with him.

I have described Bill's professional life, but certainly not all that he was—the laughter he evoked and joined in so easily, the self-deprecating humor, Bill as cornerstone of the highly attended twice-daily coffee break, and the man who so enjoyed the "anti-senility kit" his sons gave him when he turned 50. When he retired, Bill truly left the department and seldom returned, giving his time to family concerns, travel, and a re-acquaintance with his banjo.

I wish all you younger readers could have known Bill.

by Don Zobel, Emeritus Professor

Mark Patterson

It is with great sadness that we must share the passing of our dear friend and colleague Dr. Mark Patterson on October 19, 2006 of complications due to multiple myeloma, an incurable blood cancer.

Mark joined the Department in 1996 and almost immediately became an essential member of our teaching mission. Mark was extremely committed to the department, always willing to teach yet another course if the need arose. The diversity of courses he participated in both for the Biology Program and BPP over the past 10 years was truly amazing and include: BI 488/588 (Environmental Physiology of Plants), BI 306 (Environmental Ecology), BI 370 (General Ecology and a Distance Education component), BI 211 and BI 212 (Principles of Biology), BI 101 (General Biology); BOT 416/516 (Aquatic Botany), BOT 341 (Plant Ecology), and BOT 101 (Botany: A Human Concern). Mark was an exceptional educator. His special talents provided an active environment that challenged students to excel in the subject matter. He had a way about him that students couldn't resist; they had no choice but to engage in the learning process. I had the pleasure to observe Mark in the classroom perhaps more than most over the past 10 years. No matter how many times I sat in on one of his classes I always found myself smiling as I looked around the room and saw all the fresh young faces completely absorbed in his lecture. This big, burly man, with a booming voice easily commanded the attention of a 500 seat auditorium. As he walked around the room, he would stop for a moment, bend over and directly interact with one individual and then move on to the next student. Mark excelled in the art of providing a positive and stimulating learning environment for the students. His excitement and enthusiasm for the biological sciences was recognized and appreciated by his

students; it was contagious. Mark was nominated, by his students, many times for the Loyd Carter Award for Excellence in Undergraduate Teaching (College of Science) and was the recipient of this award in 2006.

Mark studied aspects of the ecophysiology of lichens, locally in Oregon as well as in Southeast Asia. He involved multiple undergraduates and one Masters student in his research program. He was interested in fire tolerance in lichens in the Willamette Valley and performed experiments measuring recovery of photosynthetic performance in a variety of lichen species after heating in the laboratory. In addition, he examined the combined effects of relative humidity and temperature on both photosynthetic performance and rehydration respiration. Mark traveled to Southeast Asia three times during his time at OSU, where he collaborated with Dr. Kansri Boonpragob from Ramkhamhaeng University in Bankok, and Dr. Phil Rundel from UCLA. They performed work both in Thailand, in Khao Yai National Park and in Cambodia. They were interested in differential photosynthetic performance of lichens as a function of their location in the tree canopy of diptocarp forests.

Mark earned his BS in Botany from California State Polytechnic University at Pomona and his PhD from UCLA. While at UCLA he met Virginia Weis, a fellow graduate student in biology. Mark and Virginia were married in 1992. In 1993 they moved to Aptos, CA and Mark began a postdoctoral fellowship at NASA's Ames Research Center in Mountain View. Their daughter Elizabeth and son Will were born in nearby Santa Cruz. They moved to Corvallis in 1996 when both Mark and Virginia began positions at OSU. Virginia is a member of the Zoology Department. Mark was a devoted husband to Virginia and a loving father to Elizabeth and Will. He served as the primary caregiver to the children after school and during the summer and instilled in them a love of nature, photography, and spectator sports.

We miss Mark's wonderful smile, his warm hugs, his booming voice, and our discussion with him on pedagogy. The Department has established the Mark Patterson Teaching Award. Donations can be made payable to the OSU Foundation: In Memory of Mark Patterson. Checks can be mailed to the Department of Botany and Plant Pathology, Oregon State University, 2082 Cordley Hall, Corvallis, OR 97331.

by Lynda Ciuffetti

UNDERGRADUATE STUDENT NEWS

Congratulations to the following students who received a B.S. in Botany in 2006:

Emma Bradford
Jane Fery
Sara Hamilton
John Helgesson
Brian Lewis
Alicia Leytem
Lynda Moore
Anthony Shireman
Amanda Wood

Congratulations to our Honor Roll Students Spring and/or Fall terms 2006, and/or Winter 2007:

Emma Bradford
Therese Biboux
Mitchel Corbet
Morgan Curtis
Elaine Daggett
Kathleen Farrell
Rachelle Gomez
Hansel Hallman
Alicia Leytem
Nancy Pierce
Zakariah Weinstein

GRADUATE STUDENT NEWS

The Graduate Student Association (GSA) elected several officers to serve in the role of organizing activities and raising funds for student travel grants. **Ann Willyard** continued as GSA Treasurer, and **Dominic Maze** (Marketing Director), **Don Campanella** (Vice-President) and **Ryan Kepler** (President) were elected to GSA office for the 2006-2007 academic year. We started fall term the right way by organizing a potluck barbeque at Avery Park, and the big shebang was well-attended by everyone in the department and their families. There were plenty of leftovers for the hungry graduate students who stayed late, and then the students reconvened at the coast for a weekend of frolic and fun. We rented a beach house near Depoe Bay that had a glorious view of the ocean and the historic Ben Jones Bridge. During the day people went crabbing, mushroom hunting and bicycling, and at night there was more potlucking, hot-tubbing and card-playing. The barbeque and the coast weekend were not only a lot of fun but the events provided an important opportunity for our new students to get to know everyone else in the department, and we would like to thank **Dan Arp** and the rest of the department for helping to provide us with the means to have these social events.

GSA continued its Travel Grant program in 2006 with $200 awards to each of four students: **Don Campanella**, **Kristin Skinner**, **John Syring**, and **Ann Willyard**. Graduate student fund raising (t-shirt sales, volunteer work, and an auction) provide most of the income for this important program, supplemented by earnings on the GSA endowment fund. In 2006, a silent auction was held at the annual departmental gala. Thanks to generous donations from **Kathy Merrifield**, the **Zobel**'s, **Patricia Muir**, **Cynthia Ocamb**, **Gene Newcomb**, and **Don Campanella** (and many generous bidders!) we earned over $250 at this fun event. In 2007, GSA is planning a fund-raising booth for plant sales at the annual Corvallis Spring Garden Festival and accepting applications for travel grants starting in April.

Graduate students also have been hosting coffee breaks before the department's weekly seminar series. The coffee breaks are open to everyone and they are held in the department conference room at 3:30 pm Thursday before the seminar at 4:00 pm. Thank you to everyone who has volunteered to bring snacks, brew coffee and hobnob for a few minutes. The weekly gathering has helped to boost attendance at seminars and it provides a nice social break during the busy week.

Many of our graduate students have received awards and presented their research at scientific conferences this year. **Heather Lintz** (McCune lab) presented a talk at the annual meeting of the Ecological Society of America held in Memphis, Tennessee, and subsequently she was bestowed the *E.C. Pielou Award* by the Statistical Ecology Section of ESA "based on overall quality of the student's scientific contribution to statistical ecology, as evidenced by his or her oral presentation". Congratulations to Heather for this prestigious honor! **Jessi Brunson** (Pyke lab) also contributed an oral presentation at ESA-Memphis entitled "Yield responses of invasive grasses to sucrose doses" which conveyed results from her research on restoration techniques in the sagebrush steppe ecosystem that has been invaded by exotic weeds. **Upekala Wijayratne** (Pyke lab) was granted a *Diversity Advancement Pipeline Fellowship* that provides one year of stipend support to "advance inclusiveness in graduate education and prepare students with career objectives of university teaching and research", an award which is furthering her research on big sagebrush seed dormancy rates and factors of seedling establishment. **Don Campanella** (Mundt and McEvoy labs) attended ESA-Memphis and also the annual meeting of the American Phytopathological Society held in Québec, Canada, and at each meeting he presented a poster entitled "Species associations and the severity of damage caused by multiple organisms introduced for biological control of *Chondrilla juncea* (Asteraceae)." Don was a recipient of the Larry Moore Award for Graduate Education in Plant Pathology and a GSA travel grant. **Ann Willyard** (Cronn and Liston labs) presented a talk entitled "What can we learn from a nuclear gene phylogeny of *Pinus* subgenus *Pinus*"*?* at the **Evolution 2006** conference in Stony Brook, New York and a talk entitled "What can we learn from a multi-locus nuclear phylogeny of the "hard" pines (*Pinus* subgenus *Pinus*, Pinaceae)*?*" at the **Botany 2006** meeting in Chico, California. **Ann** was also awarded the **Oregon Sports Lottery Graduate Scholarship** and the **Anita Summers Travel Grant**. **John Syring** (Cronn and Liston labs) presented his research entitled "Widespread genealogical nonmonophyly in species of *Pinus* subgenus *Strobus*" at the **Botany 2006** meeting in Chico, California. John completed his doctoral work in 2006 and accepted a position as an Assistant Professor of Plant Systematics at Montana State University, Billings. **Amy Peetz** (Mahafee lab) attended the Pacific regional meeting of the American Phytopathological Society in Boise, Idaho, where she presented her work on method development for pathogen detection and quantification in a talk entitled "Hop powdery mildew (*Podosphaera macularis*) in the Pacific Northwest". **Sunny Lucas**

(Parke lab) attended the Sudden Oak Death Science Symposium III in Santa Rosa, California, where she presented a poster "Development of *Phytophthora ramorum* infection and disease symptoms on coast redwood seedlings."

Phew! That's a lot of busy graduate students, and how time flies! Spring term is here, field seasons have started, and soon we will be electing another cohort of GSA officers and awarding travel grants to students who are attending meetings this summer. The GSA continues to serve an important role in the professional development of the department's graduate students by facilitating social networking with colleagues, funding travel to scientific conferences, and providing leadership experience in planning and organizing activities. Thank you to everyone who has participated in GSA activities this year for helping to make it a successful year for the graduate students and the entire department.

by the GSA Officers

RECENT THESIS TITLES

Anne Halgren (PhD with Bob Martin) Characterization, epidemiology and ecology of a virus associate with black raspberry decline.

Rachael Andrie (PhD with Lynda Ciuffetti) Examination of the role host-selective toxins play in fungal-plant interactions.

Angel Saavedra (MS with Everett Hansen) Susceptibility of golden chinquapin (*Chrysolepis chrysophylla*) to *Phytophthora cambivora.*

Desiree Johnson (MS with Joey Spatafora) Systematics of the genus *Torrubiella*.

Susan Crow (PhD with Kate Lajtha) Characteristics of soil organic matter in two forest soils.

John Syring (PhD with Aaron Liston) Phylogenetics and genomic patterns of speciation in *Pinus* with an emaphasis on subgenus *Strobus.*

Keith Perchemlides (MS with Pat Muir) Impacts of fuel reduction thinning treatments on oak and chaparral communities of southwestern Oregon.

Matthew Blakeley Smith (MS with Tom Kaye) Performance of Willamette Valley native plants following herbicide exposure.

Emily Holt (**PhD** with Bruce McCune) Community gradients of arctic macrolichens in relation to succession, grazing and the environment.

Lora Perkins (MS with David Pyke) Hydromulch tackifier and sucrose effects on microbial nitrogen and *Bromus tectorum* biomass.

Jennifer Krenz (MS with Chris Mundt) Specificity of quantitatively expressed host resistance to *Mycosphaerella graminicola*.

AWARDS AND PROMOTIONS

Faculty

Dr. Joseph Spatafora was promoted to **Professor.**

Dr. Walter Mahafee was promoted to **Associate Professor (Courtesy).**

Dr. Mark Patterson was promoted to **Assistant Professor**

Viola Manning was promoted to **Senior Faculty Research Assistant.**

Dr. Mark Patterson received the **Loyd Carter Award for Excellence in Undergraduate Teaching**

Dr. Stella Melugin Coakley was awarded **Fellow of the American Phytopathological Society**

Dr. Kenton Chambers received the **Botanical Society of America Centennial Award**

Dr. James Carrington received the **UC-Riverside Honored Alumni Award**

Dr. Kenneth Johnson, jointly with Dr. Carol Mallory-Smith and Dr. Sujaya Rao (both of Crop and Soil Science), received the **L.L. Stewart Faculty Scholars Award** which recognizes outstanding faculty and provides resources to stimulate creative advancements in teaching, research, and extended education.

Students

Heather Lintz, graduate student with Mary Kentula and Mark Wilson, received the **Pielou Award** from the Statistical Ecology Section of the **Ecological Society of America**, at the 2006 meeting in Memphis for her oral presentation "Threshold strength and 'diagonality'; response descriptors for comparison of empirical model types".

The 2007 **Anita Summers Graduate Student Travel Awards** were presented to **Brad Collins** and **Sunny Lucas**.

The 2007 **Larry Moore Award for Graduate Education in Plant Pathology** was presented to **Sierra Hartney**

The 2007 **Katherine R. Pamplin Scholarship** from the **Portland Garden Club** was awarded to **Tri Tran.**

The 2007 **Hardman Foundation Award for Native Plant Research** was awarded to **Elizabeth Martin.**

The 2007 **Bonnie C. Templeton Award for Plant Systematics Research** was awarded to **Brian Knaus.**

The 2007 **Moldenke Fund for Plant Systematics Travel** was awarded to **Stephen Meyers.**

The 2007 **Thomas C. Moore Memorial Scholarship** was awarded to **Thomas "Wade" Holman** and **Elaine Daggett.**

The 2006 **Ernest and Pauline Jaworski Summer Scholarship for Underserved Undergraduates in Plant Science** was awarded to **Shannon Williamson**

The 2007 **Ernest and Pauline Jaworski Summer Scholarship for Underserved Undergraduates in Plant Science** was awarded to **Brooke Peterschmidt** and **Nicole Marshall**

The 2006 **Leslie and Vera Gottlieb Research Fund in Evolutionary Biology** was awarded to **Ann Willyard.**

PROFESSOR EMERITUS RECEIVES CENTENNIAL AWARD FROM THE BOTANICAL SOCIETY OF AMERICA

Kenton Chambers, Emeritus Professor, was one of 100 members of the Botanical Society of America honored with a Centennial Award in honor of outstanding service to the plant sciences and the Society. The Society marked its 100th anniversary in 2006 and presented the awards at a special centennial reception in August at the "Botany 2006 Conference" at California State University, Chico. Over 850 papers and posters were given at the meetings and present BPP faculty and students were well represented. The theme of the meetings, "Looking to the Future, Conserving the Past" reflects the Society's optimism for the future of botanical science, as well as pride in its past contributions to knowledge and its service to society.

THE LESLIE AND VERA GOTTLIEB RESEARCH FUND IN PLANT EVOLUTIONARY BIOLOGY

The **Leslie and Vera Gottlieb Research Fund in Plant Evolutionary Biology** was established in 2006 to provide funds to graduate students to support both laboratory and field research in the evolutionary biology of plants native to western North America. This is a broad field that includes evolutionary and population genetics, systematics and phylogenetic studies, comparative analyses of development, and physiological and biochemical studies of plant adaptations.

Stephanomeria malheurensis, a Federally listed endangered species known from a single locality in Harney County, Oregon. Discovered by Professor Gottlieb in 1966, he studied the species intensively because it is one of the very few examples of the recent natural origin of a plant species.

The Research Fund will help many grad students initiate their own careers in science as well as providing new information and new ideas about plant evolution. We are pleased to announce that **Ann Willyard**, graduate student with Aaron Liston, was the recipient of the first award from the new fund.

Following a Bachelor of Arts degree from Cornell University in 1957, **Dr. Leslie David Gottlieb's** career began at Oregon State University in the Botany and Plant Pathology Department. He earned a Master's degree in December 1965 with major professor Dr. Kenton Chambers and wrote a thesis on hybridization between species of manzanita in southwestern Oregon . It was in Corvallis that he first learned about plants and how to identify and investigate significant questions in evolutionary biology. His PhD at the University of Michigan in 1969 examined patterns of diversity and mechanisms of speciation in *Stephanomeria*.

He then joined the faculty of the Department of Genetics (Section of Evolution and Ecology) at the University of California, Davis where he taught classes in genetics and evolutionary biology, and served as department chair for three years during the mid-1980s. Dr. Gottlieb researched a broad array of subjects including plant speciation, polyploidy, biochemical evolution of isozymes, molecular genetics, and the application of biochemical and molecular data to plant systematics. Many of his studies dealt with rare and endangered species, particularly in the genera *Clarkia* and *Stephanomeria*.

Dr. Gottlieb published more than 120 research papers and received a number of awards including a John Simon Guggenheim Fellowship (1975), and Fellowship of the American Association for the Advancement of Science (1985). In 1993 he was named Alumni Association Fellow of Oregon State University.

The Botanical Society of America awarded its Merit Award, its highest honor, for the year 2000, to Dr. Gottlieb. An announcement in *Plant Science Bulletin*, the society's newsletter, described Gottlieb as: "one of the most influential plant evolutionary biologists over the past several decades." Award committee chair, University of Wisconsin genetics professor John Doebley, cited three of Gottlieb's publications as classics, including a 1984 article in *American Naturalist* called "one of the most important papers in plant evolutionary biology during the past half century." In 2006, he received a Centennial Award from the Botanical Society of America.

His wife, Vera, was granted the Ph.D in Botany from the University of California (Davis). She and Leslie have collaborated on many research projects and have published numerous papers together.

After retiring from UC-Davis in 2004, Leslie and Vera now make their home in southern Oregon.

THANK YOU DONORS

The following individuals and organizations generously supported the Department with donations received between 4/12/2006 and 3/20/2007. Those who wish to remain confidential are not listed.

Ajay North America
Edward Alverson and Angela Ruzicka
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Donald and Priscilla Zobel

ALUMNI NEWS

Randall C. Rowe (PhD 1973) has retired as Professor and Chair of the Department of Plant Pathology at Ohio State University on June 30, 2006. He will begin a term as American Phytopathological Society Treasurer. Dr. Rowe's major professor was **Dr. Robert Powelson** and his thesis was entitled "Initiation and spread of foot rot of wheat caused by *Cercosporella herpotrichoides* Fron. "

Dilantha Fernando (PhD 1990) who is professor of plant pathology at The University of Manitoba in Canada is the recipient of the highly competitive and prestigious 2006 University of Manitoba

Excellence in Graduate Teaching Award given by the 3200 member strong Graduate Students Association.. This award is given to one academic member in recognition of his commitment to excellence in mentoring graduate students in research and teaching. This is the first time a plant science professor at University of Manitoba has won this award since the award's inception in 1974.

In 2006, Dilantha also received an award from United States Department of Agriculture, Red River Valley Agricultural Research Center, for outstanding service to the US National Sclerotinia Research Initiative in support of continued development of management strategies to control white mold in multiple crops. In 2005, Dilantha was awarded the University of Manitoba Merit Award recognizing his contributions to excellence in research and service, and he also received an Honorary Professorship in 2005 from China for his contributions to Chinese agriculture in Inner Mongolia.

Dilantha's lab is well known for its significant discoveries of new pathogens in Canada; in establishing phyllosphere biological control methods; molecular approaches to understanding the epidemiology and diversity in pathogen populations; and developing several canola varieties (world's healthiest oil) with disease resistance that have helped shape the future of Canadian agriculture and its economy. Recently, he and UM canola breeders registered the World's first Roundup Ready High Erucic Acid Rapeseed cultivars for industrial purposes to be used as lubricants, hydraulic fluids and making of plastics where high heat stability is required.

At the present time, Dilantha mentors 5 PhD students, 3 Masters, 4 post docs, and 4 undergraduate research assistants in his lab. Dilantha sits on the boards of several national and international scientific organizations, and is the Workshops Chair of the Scientific Programs Board of the American Phytopathology Society (APS) in the USA, and Treasurer of the Canadian Phytopathology Society (CPS).

Dilantha received his PhD in Plant Pathology under the direction of **Dr. Bob Linderman** at Oregon State University, and his Masters in Microbiology from University of Kelaniya, and Bachelors degree in Botany from University of Peradeniya, Sri Lanka. Dilantha joined the University of Manitoba in Canada as an assistant professor in August 1998, and was promoted to associate professor in January 2002 and to full professor in March 2006.

Judith Jernstedt (BS 1973) now Professor of Agronomy and Range Science at UC Davis, received a Centennial Award from the Botanical Society of America, established for the centennial meeting in 2006 to acknowledge and honor outstanding service to the plant sciences and the Society. She is the current Editor-in–Chief of *The American Journal of Botany.*

Thomas Michaels (PhD 1983) plant pathologist, pianist and scrabble tournament competitor has an hazelnut orchard in Chuckey Tennessee, spouted from seed which he inoculated with *Tuber melanosporum*, the Périgord black truffle, seven years ago. Dr. Michaels grew up on a mushroom farm west of Chicago and had written his thesis on the difficulty of the in-vitro cultivation and growth of *T. melanosporum* with major professor **Dr. James M. Trappe.**

Recently, he discovered patches of truffles beneath the trees, and Manhattan chef Daniel Boulud's confirmed the grower's suspicion.

To grow truffles is to govern an intricate culture of plant and fungus life, as well as environmental conditions, not all of which are known and most of which are hidden underground.

Tending a truffle orchard is as much of an art as it is a science and it is, most of all, an act of faith — it typically takes 6 to 12 years for the fungi to form truffles in the earth.

According to James M. Trappe, a professor emeritus of mycology at Oregon State University, there are about 60 species of true truffles, the subterranean fungi that attach to a plant's roots and issue long tendrils that gather nutrition for the plant and use the carbohydrates that the plant returns to eventually form the "fruit" we call truffles — but only a dozen are prized in the kitchen.

Dr. Michaels is the first domestic truffle farmer to produce commercial quantities of truffles of a quality that commands top dollar ($50 an ounce, $800 a pound). (from *New York Times, February 28, 2007)*

Stephen C. Sillett (PhD 1996) now Professor of Botany at Humboldt State University who studies the redwood forest canopy, climbed the world's tallest tree in a remote stretch of the Redwood National Park, CA. Hyperion, a coast redwood *Sequoia sempervirens* discovered by naturalists Chris K. Atkins and Michael Taylor, was determined by Sillett to be 379.1 feet tall. Sillett completed his PhD with major professor **Dr. Bruce McCune**. (*The New Yorker, October 9, 2006)*

SCHOLARSHIPS AND AWARDS MADE POSSIBLE BY OUR ENDOWMENTS

The **Department of Botany and Plant Pathology** is fortunate in the support it receives from alumni, friends, and other organizations. Through the OSU Foundation, we have established named funds and endowments in honor, or, in memory, of friends, alumni, and faculty. The growth of these funds enables us to enhance support for our students and programs.

Botany and Plant Pathology Endowment Fund in Honor and Memory of Alumni and Friends holds smaller endowments that have been established in memory of particular individuals so we can reach the minimum amount required for an individual fund (as required by the OSU Foundation) more rapidly and benefit from the potential earning power of these gifts. Once a particular fund reaches the endowment level it will be moved into a separate account. The **Donald J. Armstrong Fund, Mary L. Powelson Fund, Donald B. Zobel Fund, Dallice I. Mills Seminar Fund, Mark T. Patterson Teaching Award Fund, James Sandeno Memorial Fund, Harry K. Phinney Memorial Fund, MacSwan Memorial Fund, F. McWhorter Memorial Fund and the E. Otto Memorial Fund** are all held within this larger fund. Awards are periodically made in the individual's name for the purpose associated with the original gift.

Charles and Helen Fulton Memorial Endowment provides scholarships for botany majors and undergraduate research projects in botany.

Leslie and Vera Gottlieb Research Fund in Plant Evolutionary Biology provides funds to graduate students to support both laboratory and field research in the evolutionary biology of plants native to western North America: including evolutionary and population genetics, systematics and phylogenetic studies, comparative analyses of development, and physiological and biochemical studies of plant adaptations.

Bonnie Hall Student Activity Fund supports group activities for undergraduate and graduate students.

Hardman Award for Native Plant Research supports graduate student research concerning the native plants of Oregon.

The Ernest and Pauline Jaworski Fund for Summer Research Experiences for Underserved Undergraduates in Plant Science is offered for undergraduate research during summer term. The goal of this program is to increase the level of diversity among students who enter Ph.D. programs to pursue careers in university teaching and research by providing research opportunities to undergraduates that have been underserved.

Bill and LaRea Johnston Endowment supports undergraduate education and is used either to directly support students or their research efforts, or teaching activities on behalf of these students. The ***Outstanding Senior Award*** is also made possible by this endowment.

Moldenke Fund for Plant Systematics supports graduate student travel to herbaria to study preserved plants, and travel to field sites to collect specimens for plant systematics research.

Larry Moore Award for Graduate Education in Plant Pathology supports graduate student education in plant pathology.

Thomas C. Moore Memorial Scholarship assists undergraduate students in botany and plant pathology.

Portland Garden Club Katherine R. Pamplin Fellowships are offered for research in aspects of native plant biology, rare and endangered plant conservation and environmental effects on native plants.

Jean Siddall Memorial Scholarship supports undergraduate students studying rare and endangered plants.

Anita Summers Graduate Student Travel Fund supports travel of graduate students within the area of Botany and Plant Pathology for attendance at professional meetings where the recipient has a specific responsibility such as presenting a poster or paper, or participating in a discussion as an invited participant.

The Dr. Bonnie C. Templeton Endowment supports graduate student research in systematics.

Department of Botany and Plant Pathology
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Corvallis, OR 97331-2902

ADDRESS SERVICE REQUESTED

Thanks are due to **Sue Jepson** for collecting the information, layout, editing and handling the mailing list; **Dianne Simpson** for proof reading; **Tom Allen** for the logo and **Ken Chambers** for the name.

CONTRIBUTIONS may be sent to **The Oregon State University Foundation, 850 SW 35th Street, Corvallis, OR 97333**

I'm making a gift of $_____ to **Botany and Plant Pathology** and would like to direct it to the following:

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