

POSIES & PATHOGENS



Department of Botany and Plant Pathology

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Twenty Second Edition

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FROM THE DEPARTMENT HEAD

Dear Alumni and Friends,

With this edition of *“Posies and Pathogens”* we mark the 22nd edition of our newsletter distributed to all members of our extended family. I want to apologize for my long absence in communicating with you, but rest assured that BPP continues to thrive. In this edition you’ll find news from the past several years.

We are very sad to report the passing of our dear friend and colleague Dr. Roy Young, and we enclose a special tribute to him as we dedicate this edition to his memory.

There have been a number of highlights in the last couple of years to which I would like to draw your attention. In 2011 we welcomed **Andy Jones**, Assistant Professor in genomic/computational plant ecology, **Brett Tyler**, Director of the CGRB and conducting research in the area of systems biology of infectious diseases, and our Courtesy paleontologists, **Ruth Stockey** and **Gar Rothwell**. In 2012 we welcomed **Molly Megraw**, Assistant Professor in systems and computational biology, and **Sushma Naithani**, Senior Research Assistant Professor in plant systems biology. In November 2012, the most significant highlight was the 10 year Review of our undergraduate and graduate programs. I am happy to report that although there is always room for improvement and the department certainly has needs that we outlined

in the self-study document, we were recognized as *“a model for 21st century institutions of higher education”* by the evaluators.

Our students, faculty, and staff continue to excel in all areas and have been recognized with many well deserved awards.

Since becoming department head, July 2013 marked the end of my 5th year. I have often questioned that despite the quality of BPP we do not have any endowed chairs or professorships. This is in contrast to other units in CAS and across the University. I will be working on changing this deficiency and in the next year I will begin to focus on the possibilities of raising donations towards the development of these types of positions for BPP.

We have been working on improvements to our website, and I would like to invite you to look regularly at the changing “News” spot on our front page, as well as the “Meet Our Alumni”, “Events”, and “Award Winners” pages so you can keep up with all our latest developments.

For me personally, this past year has been most difficult with the loss of my lifelong best friend Charlene, who lost her battle with ovarian cancer in January 2013. It will take me quite some time to come to terms with her absence in my life.

As this edition reaches you, I hope you enjoyed a peaceful Holiday season, and I wish you and your loved ones a happy and healthy New Year.

We remain, as always, most grateful to all those who contribute in so many ways to the success of our department.

Warm regards,



Lynda M. Ciuffetti
Professor and Department Head
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A TRIBUTE TO DR. ROY YOUNG 1921-2013

Roy Alton Young, university administrator, scientist and educator, passed away on April 19, 2013, in Corvallis, following a lengthy illness. He was 92 years of age. He was born the son of John A. Young and Etta J. (Sprinkle) Young on March 1, 1921, in McAlister, N.M., where he grew up on the family ranch. He received his Bachelor of Science degree from New Mexico



State University, and his Master of Science degree in 1942 from Iowa State University.

He was a Lieutenant in the U.S. Navy, serving as a deck officer, navigator, antisubmarine warfare officer, and Executive Officer in the Atlantic and Pacific areas of operation from 1942 to 1946. He served in the Navy Reserve from 1946 to 1954 and was promoted to the rank of Lt. Commander. He returned to Iowa State following the end of World War II, and was awarded his doctoral degree in plant pathology and botany in 1948.

From 1948 to 1976, Dr. Young was a professor at Oregon State University, serving as head of the department of botany and plant pathology from 1958 to 1966, dean of research from 1966 to 1969, acting president in 1969 and 1970, and vice president for research from 1970 to 1976. In 1985 Dr. Young received Oregon State's highest honor, the Distinguished Service Award.

The award citation described him as one of the outstanding leaders in the history of OSU, and as a scholar, gentleman and man of great talent and integrity who helped build the campus to national prominence, and as a prime mover in the designation of OSU as one of four Sea Grant Centers in the United States, the growth of research and scientific programs, and securing of facilities.

Dr. Young served as chancellor of the University of Nebraska, Lincoln, from 1976 to 1980. He led efforts at UNL to increase the quality standards for student admissions and enhancement of the teaching and research programs of the campus. Dr. Young departed UNL to accept the post of president and managing director of the prestigious Boyce Thompson Institute for Plant Research in Ithaca, N.Y., where he served from 1980 to 1986.

He published extensively, and was a member of numerous advisory and study committees of the National Academy of Sciences, the National Science Foundation and the U.S. Department of Agriculture. Dr. Young served as president of the Pacific Divisions of the American Phytopathological Society and the American Association for the Advancement of Science, and was active in national energy and environmental programs.

He also served on the executive committee of the National Governors' Council on Science and Technology. Dr. Young was a member of the Rockefeller Foundation panel on postdoctoral fellowships in environmental sciences, and he held various leadership positions in the National Association of State Universities and Land Grant Colleges.

He received the Honorary Doctorate of Laws degree from New Mexico State University in 1978. Dr. Young and his wife, Marilyn, received the 2004 Dan Poling Service Award from OSU. Dr. Young was a member of Sigma Xi, Phi Kappa Phi, Phi Sigma, Sigma Alpha Epsilon and Rotary.

Dr. Young also was a member of the Boards of Pacificorp, Pacific Power & Light Co., First National Bank of Lincoln, Security Trust Company of Ithaca, Ithaca College, the Oregon Graduate Institute of Science and Technology, and the Boyce Thompson Southwestern Arboretum.

Dr. Young's beloved wife of 63 years, Marilyn, passed away in July 2013; they are survived by their two children, Janet of Merced, Calif., and Randall of Portland, his wife, Nancy, and their children, Katherine and Robert. He was preceded in death by his brother, John E. Young of McAlister.

From Stella M. Coakley

It is fitting that this issue of *Posies and Pathogens* be dedicated in honor and memory of Dr. Roy A. Young, who served as head of the department of Botany and Plant Pathology from 1958 to 1966, before going on to serve Oregon State University in central administration, and then on to head up other institutions. Although I recall meeting Roy at a meeting of the American Phytopathological Society when I was a graduate student at UC Davis, and his providing kind comments on a paper that I presented, I met him again in Oregon shortly after I arrived to be department head. This was a few years after his retirement and return to Corvallis where we ended up living one street over from the Young's. Marilyn and Roy were a wonderful resource for me over the years; their friendship with Dr. Bonnie Templeton and Chester Weiche was instrumental in the several gifts that Dr. Templeton made to the department over time. Roy was the quintessential gentleman, professor and administrator. He set a high standard and he will be sorely missed. Thank you, Roy and Marilyn, for all that you contributed to our department and university.

From George Keller

Roy, Gentleman with a Hat - I unfortunately had limited opportunity to work with Roy after he returned to Corvallis from Boyce Thompson. We met from time to time to talk about his professional activities which were supported partially by the Research Office. But, I remember Roy mainly from meeting at various community events, always a gentleman with a smile and his trade mark 'HAT'. Roy stood out, not only due to his height, but for his gentle nature and soft spoken words. Such a fine man I was privileged to come to know.

From Ron Cameron

A few days after I arrived in Corvallis, I was invited by Drs. Dietz and Roy Young to go with them to look at several sick vegetable fields near Troutdale, OR. Roy drove, Dr. Dietz was in the front seat, next to Roy and I was in the back seat. On the trip north Roy and Dr. Dietz were discussing where to have lunch. An old streetcar with a waitress by the name of "Flame" seemed to be the preferred choice. After looking at the sick vegetables, we adjourned to the "streetcar". Lunch was O.K. but Flame's fire had gone out many years ago! As we paid for lunch, Dr. Dietz selected a normal but rather large cigar and Roy picked out a green cigar with several right angle bends. As we started back down I-5, they rolled up the windows and lit their cigars. By the time we reached Salem, it was blue inside the car. I decided that I wasn't going to say a word. By Albany, you couldn't see across the car and by the time we reached the Ag. Car Pool, I couldn't even see who was driving! Thus was my introduction to Oregon State.

From Dianne Simpson

One seldom saw Dr. Young without his hat, and as a true gentleman, always removing it when he walked into a room. It was a trade mark for the tall gentle voiced man. I first met Dr. Young in 1970

during his tenure as acting President at OSU. It was many years later, through Dr. Stella Coakley (at the time BPP's Department Head), that I begin to interact with Dr. Young. He would stop by at least once a week to visit with Stella and had to pass by my desk. While he would patiently wait to meet her, he would talk with me. After Stella's departure in 2004 to her new adventure as Associate Dean in CAS, Dr. Young continued to come by to talk about what was happening in the department and university and individuals from the past. As time passed, he would talk of his younger years, when he first came to Oregon State, and how much things had changed. I was delighted that he continued to stop by just to see me. Through every conversation we had, Dr. Young never said a negative thing about anyone or anything, but would voice his opinion in his calming manner. I asked him once if he ever raised his voice, which he responded, "No, I don't believe so" in his quiet soft voice. I can still hear him today. Twice a year, I would go to the Young's home to take a hanging fuchsia in May and in December a poinsettia the horticulture club was selling. I was always met at the door by Marilyn's quiet demeanor (wearing her pearls) with a smile welcoming me into their home. As time went by Roy would stop by less and less, but we continued to speak by phone. Through the last few years, I watched both Roy's and Marilyn's health decline, but always was amazed at their stature. That distinguished looking gentleman and his gracious wife aged with dignity. They held my respect and awe from the first moment I met them to the last visit near the end of their lives. I feel honored to have known such a man like Roy Young and a woman like Marilyn Young.

The Roy A. Young Memorial Fund

Contributions in memory of Dr. Young can be made to the [Botany and Plant Pathology Endowment Fund in Honor and Memory of Alumni and Friends](#) in the name of the **Roy A. Young Memorial Fund** at the [OSU Foundation](#). Funds will be used to support educational programs of the Department of Botany and Plant Pathology.

WELCOME NEW FACULTY

Molly Megraw is our newest member of the faculty. She is a systems biologist and her research involves small RNAs and Transcription Factors and how they work together in living cells. Her current research focus is on the analysis of over-represented microRNA-Transcription-Factor regulatory structures using *Arabidopsis* as a model organism. This work includes both computational and wet lab components to elucidate regulatory regions on a genome-wide scale. Molly obtained her PhD from the University of Pennsylvania, and held a post-doctoral position at Duke University. She will teach undergraduate and graduate courses in systems and computational biology.



Ruth Stockey, formerly of the Department of Biological Sciences, University of Alberta, has joined BPP as Courtesy Professor. Dr. Stockey's research includes the whole plant biology of fossil plants and their use

in phylogenetic analysis, and the evolution of ferns, gymnosperms, and aquatic angiosperms.

Gar Rothwell, formerly of the Department of Environmental and Plant Biology, Ohio University, has joined BPP as Courtesy Professor. Dr. Rothwell's research includes studies of fossil and living land plants to



understand phylogeny and evolution using data from morphological, anatomical, ultrastructural, developmental, and molecular characters.

Dr. Stockey and Dr. Rothwell have several joint publications in these areas and are looking forward to a successful collaboration affiliated with the department in the areas of paleobotany and organismal botany. They teach an Honors College course on the Fossil History of Plants. This course focuses on the origins, evolution, and diversity of plants as revealed by the fossil record. They introduce students to a small number of basic concepts that form the foundation of geology, plant biology, or paleontology. Students learn to collect fossils and apply the basic concepts to develop an understanding of how fossils are formed, what they represent, how old they are, and what information they provide about, plant evolution, past environments, and the evolution of vegetation through time.

Frank Andrew Jones (Andy) is a plant ecologist. His research focus is on understanding the ecological and evolutionary mechanisms responsible for the origin and maintenance of species diversity, particularly in forest communities. His expertise spans population and community ecology, population genetics, and comparative phylogenetics. He obtained his PhD at the University of Georgia, and held post-doctoral positions at the Smithsonian Tropical Research Institute in Panama and Imperial College London, Silwood Park. Dr. Jones teaches undergraduate and graduate courses in Botany and Plant Ecology.



Brett Tyler is the Director of the Center for Genome Research and Biocomputing. Dr. Tyler's research encompasses five overlapping areas with each area containing a blend of genomics, computation and experimental molecular biology. The five areas are: genomics of oomycete plant pathogens and their hosts, systems biology of oomycete infection, new tools and resources for exploiting genomic information, cell penetrating proteins that mediate diverse organismal interactions, and translational research in plant protection and human health. Dr. Tyler is a tenured professor in Botany and Plant Pathology with an adjunct appointment in the College of Veterinary Medicine.

Sushma Naithani joined the department as Assistant Professor Senior Research. Her research is in the following areas: cell signaling in plants, self-incompatibility, plant systems biology, genomics, bioinformatics, and metabolic and regulatory pathway databases. In particular she is looking at functional genomics of S-domain receptor-like kinase subfamily in plants and the development of metabolic pathways of strawberry and grapevine.



FACULTY NEWS

Dan Arp, effective May 1, 2012, Professor and Dean of the University Honors College, Dr. Arp assumed the responsibilities as Dean of the College of Agricultural Sciences and Director of the Oregon Agricultural Experiment Station. Former Dean Sonny Ramaswamy, was named by President Obama to lead the National Institute of Food and Agriculture in Washington, D.C. Dr. Arp has been at Oregon State University since 1990 and is a Distinguished Professor of Botany and Plant Pathology. He chaired the Department of Botany and Plant Pathology from 2004 until he became Dean of the University Honors College in 2008. He earned his PhD in biochemistry in 1980 from the University of Wisconsin-Madison and his B.S. in chemistry in 1976 from the University of Nebraska-Lincoln. He carried out his postdoctoral research at the University of Erlangen in Germany. Dr. Arp is a distinguished educator and scientist in molecular and cellular biology, an area of critical importance to addressing pressing issues in the life sciences. He maintains an active research program dealing with microorganisms involved in global elemental cycles.

The Behrenfeld lab continues to be very active. **Dr. Kim Halsey** continues to make new discoveries regarding fundamentals of photosynthesis and carbon metabolism and became Assistant Professor in

the Department of Microbiology. **Dr. Toby Westberry** has been working on issues of carbon sequestration in the global oceans and studies of plant physiology using satellite measurements of chlorophyll fluorescence. **Dr. Paul Schrader** (departed 2011) recently published some exciting new research on iron-stress effects on photosynthetic machinery. **Dr. Allen Milligan** has completed new work on protective pathways in photosynthesis under high light and has started a new project developing methods for measuring phytoplankton biomass in the open ocean. **Robert O'Malley** continues to serve the broad science community by providing global assessments of ocean photosynthesis and, this past year, has released new global products of merged land-ocean photosynthesis. **Dr. Mike Behrenfeld** has continued his work on developing a new satellite sensor for advance ocean science.

Len Coop, with the Integrated Plant Protection Center, is continuing to build a website for phenology models, plant disease models, virtual weather data, and many other IPM and invasive pest tools. This work is now supported by grants from USDA-NIFA AFRI, WRIPM, RMA PIPE, CDFA, and other sources. This year he traveled twice to Montana to introduce seed potato growers to these tools for blight control.

The Fowler lab is continuing their research on plant cell growth regulation and development, including a larger project on the genomics of male and female gametophytes in maize. The genomics project is collaborative, and involves four other institutions – the Carnegie Institution for Science at Stanford, Iowa State University, South Dakota State University, and the University of Missouri. Dr. Scott Givan, bioinformatician and co-Principal Investigator on the project, and currently Associate Director of Informatics Research at Missouri, continues to work with them on the maize gametophytes. See the project website (www.maizegametophyte.org). **Caity Smyth** joined the lab for her winter rotation experience. Research Associate **Rex Cole** is focusing on the role of the exocyst complex in plant morphogenesis, with an emphasis on root growth and *Arabidopsis*. **Amy Klocko** joined them in July 2010 as a postdoctoral Research Associate. Her effort is split 50/50 between the Fowler lab and **Valerian Dolja's** lab next door. Her focus is on myosin proteins in *Arabidopsis* (Dolja lab expertise) and their possible interactions with the exocyst (Fowler lab expertise). **Zuzana Vejlupkova** is now a Senior Faculty Research Assistant, as she received a well-deserved promotion in May of 2010! Assistant Research Professor **Maria Ivanchenko** continues her independent research on hormonal regulation of *Arabidopsis* and tomato development. She also contributes to the genomics project, specifically in identifying some insertion sites for new gametophyte mutations. They were pleased to host Tamara Pecenkova, a Postdoctoral Research Associate from the Institute of Experimental Botany, Prague, Czech Republic as part of an ongoing collaboration with Victor Zarsky's research team. In turn the Zarsky lab hosted Amy Klocko in Prague. Thanks go to the many undergraduate students who help in the lab, field and screening thousands of maize seeds.

Fritzi Grevstad continues her research with interests in invasive species ecology, plant-insect interactions, and biological control of weeds. She is developing biological control programs for invasive knotweeds (*Fallopia* spp.) and gorse (*Ulex europaeus*) with support from the USDA Forest Service.



Richard Halse was featured in the **"Story Next Door: A life with Plants"** by **Bennett Hall** for the **Corvallis Gazette Times** in November 2010.

Richard Halse went to college to become a schoolteacher. But after being initiated into the secrets of



plant taxonomy, he decided to become a botanist instead. "I like collecting plants, pressing plants and identifying them," Halse said. "It's sort of like reading a mystery because you've got this plant and you don't know what it is, and you've got to go through all these procedures to figure it out." Now, when someone in Oregon has a plant mystery to unravel, they come to him. Halse is the curator of the Oregon State University Herbarium, home to nearly half a million plant specimens,

including the most complete collection anywhere of plants that are native to this state. Though it's housed on the OSU campus, the herbarium actually comprises three major collections: Oregon State's, with about 225,000 specimens; the University of Oregon's, which has around 200,000; and Willamette University's, which numbers 50,000. "Most of our stuff is from the 1880s," Halse said. "That's when the University of Oregon and Oregon State got started and started their collections." Nineteenth-century naturalists dried and pressed their finds, then mounted them on sheets of paper along with notes on identification. Aside from the use of acid-free paper and Elmer's glue for mounting (Halse buys it by the gallon), the process has changed little since then - in fact, it's been much the same for centuries. "The first herbarium was started in Italy approximately 400 years ago," Halse said, "and those specimens are still around."

The OSU Herbarium's specimens reside in Cordley Hall, stored in more than 200 steel cabinets arranged in a space-saving, library-style system of movable rows. New arrivals are frozen for a week to kill any insects before being added to the collection. Specimens are arranged by their scientific names, sorted by family, genus and species.

"Anybody who is interested in plants, especially in Oregon, this is often the first place they come to find out where it grows, what it looks like, what sort of habitat it grows in and so forth," Halse said. "If you have a plant and you don't know what it is, you can use this facility - we are a public institution - to identify it." The herbarium's users range from students to researchers, gardeners to farmers, even timber cruisers concerned about accidentally killing endangered species. Aside from its comprehensive collection of Oregon and Pacific Northwest plants, the OSU Herbarium also is known for its compilations of lichen and fungi, especially underground fungi. "We have researchers from around the world who deposit specimens here," Halse said. Halse doesn't have a particular favorite in the collection.

"It changes from day to day," he said. "As I find something that's new or interesting, I get focused on that." But he does confess to having a soft spot for the Phacelias - a genus of small, herbaceous plants with close to 200 species. He studied them while working on his doctoral thesis at OSU, even discovering and naming one species - *Phacelia monoensis* - that until then was new to science. "They're just little weeds - well, they're not weeds because they're native species - and they have little yellow flowers," Halse said. "I think they're pretty."

Pankaj Jaiswal's lab held an open house and lab warming party in January 2011 to celebrate the completion of their molecular biology lab construction. The lab is studying abiotic stress tolerance and



Left to right: Pankaj Jaiswal, Sushma Naithani, Rajani Raja and Palitha Dharmawardhana.

plant development in crop plants.

Justin Elser, Rajani Raja, Palitha Dharmawardhana and Pankaj participated in the annotation of the woodland strawberry (*Fragaria vesca*) genome. The group contributed the Gene Ontology based functional assignments, gene family cluster annotations and functional characterization of genes enriched in the fruit and root transcriptomes. Other colleagues from Oregon State University that participated in the publication include, **Sushma Naithani, Nahla Bassil, Aaron Liston, Scott Givan** and members of **Todd Mockler's lab**. The publication is accessible freely from journal [Nature Genetics](#). The genome paper was authored by a team of 70

authors from various national and International organizations.

Tom Kaye continues to lead the Institute for Applied Ecology, a nonprofit organization whose mission is to conserve native species and habitats through restoration, research and education. Much of Tom's research focuses on the theory and practice of endangered species reintroduction. One recent example is testing factors that affect reintroduction success of *Castilleja levisecta* (golden paintbrush), which hasn't been seen in the Willamette Valley since the 1930s – field work that keeps Tom's knees dirty. He and his colleagues are seeing the results of this effort with the plants in full bloom at the Finley Wildlife Refuge. He participated in a National Center for Ecological Analysis and Synthesis working group that reviewed the current use of population models for plant research and explicitly tested the ability of these models to predict population trajectories. Tom's graduate student, **Ian Pflingsten**, who explored the effects of climate change on endangered plants by using long-term demographic data sets to identify significant climatic drivers of population behavior, and forecast population trends in a changing world graduated in December 2012. **Katie Jones**, who began her MS in Fall 2009, determined which factors affect seedling establishment of several endangered prairie plants and nectar sources for endangered butterflies. Katie graduated in June 2012. **Caitlin Lawrence** is Tom's newest graduate student. Tom was promoted to Courtesy Associate Professor in July 2013.

The Foliar Pathology Lab with **Walt Mahaffee**, Andy Albrecht, Tara Neil, and Jessic Keune continue their focus on diseases of grapes. **Patricia Wallace** graduated in June 2010 with a M.S. thesis entitled "Evaluation of the Colonization and Biofilm Production by *Burkholderia pyroccinia* FP62 on Geranium Leaves". She now works for Plant Sciences Inc. They also said goodbye to **Dani Martin**, who took a job with the Forest Service in Morgantown, West Virginia. They have had some nice results over the past few years that will significantly impact the Oregon Wine industry. In collaboration with Patty Skinkis (Horticulture), they have shown that leaf removal from the fruiting zone pulling before bloom, much earlier than current practice, reduces powdery mildew and bunch rot on grape clusters with no impact on fruit quality. They have developed a LAMP-PCR technique to detect presence of *Erysiphe necator* inoculum that managers can perform in office, barn or home with only \$1800 in equipment and be as accurate as qPCR techniques the Mahaffee lab employs. The vineyard managers can save 2.4 fungicide

applications or >\$100/A by waiting to start their fungicide program until airborne inoculum is detected. Their next big adventure is working with some Fluidic Engineers (Rob Stoll and Eric Pardyjak, Utah University) to develop dispersion models for airborne fungal pathogens in perennial canopies.

Bruce McCune's lab continues to work on how lichens fit into various ecosystems, ranging from the tundra and taiga of Denali National Park to the forests of coastal Alaska, shrub steppe of central Oregon, and the mountains of Yosemite National Park. They study three groups of controlling factors: climate, air quality, and disturbance. For example, grad student **Martin Hutten** is measuring gradients in nitrogen deposition and lichen response throughout Yosemite; **Heather Root**, who graduated in September 2011, built a gradient model of lichen communities in relation to climate, based on hundreds of field plots spanning the length of coastal southeast Alaska; and **Peter Nelson** who just completed his PhD in December 2013 linked remote sensing to ground-based data, modeling caribou forage and lichen distribution at Denali. At the same time they develop tools for nonparametric statistical modeling of nonlinear, strongly interactive effects of multiple variables. For example, **Heather Lintz**, who received her PhD in March 2011, focused on how to detect and measure the strength of thresholds in multidimensional species response surfaces. The bird's eye view of a response surface for western hemlock (borrowed from Heather's dissertation) illustrates nonlinear interactions but only weak thresholds. Heather is now Senior Research Assistant Professor in the Oregon Climate Change Research institute at OSU. Postdoc **Sarah Jovan** reached an important milestone when she was hired by the U.S. Forest Service in Portland. You may have seen her on OPB's Oregon Field Guide. She is now the lead scientist for the national program of lichen data that are collected in conjunction with the Forest Inventory and Analysis program, a system of thousands of plots across the United States. BPP has been a long-term cooperater with this program, and the continental scope of these data are allowing them unprecedented ability to answer large scale questions.

Pat's Muir's MS student, **Erin Gray**, defended her thesis at the end of spring term 2011. In her thesis research, entitled "An evaluation of the invasion potential of forage kochia (*Kochia prostrata*) on rangelands in Idaho," she assessed whether this non-native sub-shrub, which is planted widely in the intermountain west as a soil stabilizer, post-fire site rehabilitator, and fire break, stays where it is planted or spreads beyond the planting boundaries. No great surprise to a botanist – it does not respect planting boundaries! Her work was funded by the Idaho Bureau of Land Management and the USGS. Pat's former grad student, **Olivia Duren**, working with Pat as an FRA, has carried out a large-scale assessment of the distribution of vegetation types in an ~ 300,000 ha area of SW OR at the time of European settlement, based on maps created from General Land Office surveyor notes. She assessed the current distribution of those vegetation types on the same landscape, using aerial photographs. She's now determining which vegetation types have increased or decreased in cover, and attempting to model environmental drivers of the various transitions – a work in progress! This work was funded by a grant from the Joint Fire Science Program.

Aaron Liston welcomed post-doc **Shannon Straub** (PhD from Cornell University) and PhD student **Kevin Weitemeir** (MSc from Portland State University) to his lab. Both are working on the *Asclepias syriaca* genome project (milkweedgenome.org) and phylogenomics of the milkweed genus. Computer wizard **Zachary Foster** (undergrad Botany & Microbiology major) and lab angel Laura Mealy (post-bac, Food Science and Technology) make up the rest of the milkweed team. **Matt Parks** completed his PhD in 2011 on pine phylogenomics, and he has also been contributing to their genomic research into strawberry sex chromosome evolution; he took a post-doc position at Griffith University, Australia.

Joyce Loper's group continues to explore the mysteries of plant-associated bacteria. If you visit the second floor of the USDA-ARS Horticultural Crops Lab (and they hope you will), you are likely to find them busy in the lab or glued to our computers pouring over data from their projects on the comparative genomics and secondary metabolism of *Pseudomonas fluorescens*. **Teresa Kidarsa**, a

postdoctoral fellow in the group, has unraveled the mechanisms of co-regulation of two antibiotic biosynthesis pathways in *P. fluorescens*, and **Sierra Hartney** completed her Ph.D. in March 2012 with a dissertation focused on the phylogenetics and function of a group of outer-membrane transport proteins important in iron-nutrition of these bacteria. Ed Davis is heading up their bioinformatic analyses of genomic sequence data. **Lorena Rangel**, completed her MS in September 2012, and discovered that some plant-associated strains of *P. fluorescens* are toxic to insects---the question now is---why? Marcella Henkels and Brenda Shaffer, along with collaborator **Virginia Stockwell**, are busy exploring the biology of *Pseudomonas syringae* and new ways to manage the diseases it causes on small fruit and nursery crops. A talented group of undergraduate researchers supports the group. They have enjoyed visits from many colleagues, as well as frequent treks up Orchard Avenue to attend seminars and visit friends and co-workers in Cordley Hall.

The Oregon Flora Project welcomed **Dr. Stephen Meyers** to its staff in July 2010. Stephen is the



Oregon Flora Project staff (left to right): Stephen Meyers, Linda Hardison, Thea Cook, Jennifer Sackinger, and Katie Mitchell

taxonomic director for the Project and is overseeing the writing of the *Flora of Oregon*. Botany fans won't have to wait for the book to be published to use their plant descriptions and keys, however— they are posting sections of the *Flora* on our website as they are completed

(<http://oregonflora.org/flora.php>).

In January, they released the annotated Checklist of the plants of Oregon—a milestone that creates the taxonomic foundation upon which they are developing the new *Flora of Oregon*. The Checklist,

along with the mapping and photography tools they provide, are available on our website. **John**

Myers was recently hired as Artistic Director to coordinate graphic design and development of the *Flora of Oregon*.

Jay Pscheidt After a major crash of the Plant Disease Control website OSU found a lasting solution and a brand new beautiful website (<http://pnwhandbooks.org/plantdisease/>) was launched in 2012 just after publication of the 2012 printed handbook. **Steve Cluskey**, **John Bassinette** and former graduate student **Stephanie Heckert** (Stephanie graduated March, 2012 and is now FRA in Jay's program) are still great resources and make it all happen for his programs. Steve moved on to become **BPP Field Lab Manager**. Oregon has been dealing with a newly described disease called Thousand Cankers Disease on black walnut. Jay says "For 15 years we have scratched our heads on this one but know now that a little, phloem limited twig beetle has been moving around a fungus and killing trees. Could be a major invasive problem for eastern forests on the scale of chestnut blight! But then, you knew all of this since you have been following us on FaceBook! (<http://www.facebook.com/pages/PNW-Plant-Disease-Management/124973520901136?v=wall>)"



This is the largest black walnut in the world located on Sauvie Island with a DBH of about 8.5 feet (that is Jay standing at the base with his arms outstretched). This tree is doing fine unlike smaller black walnuts suffering from TCD just down the levee.

The **OSU Plant Clinic** has been keeping busy, as usual. They haven't been slack since **Melodie Putnam** arrived 18 years ago! Things have changed quite a bit since then, with molecular diagnostics being used on more and more samples. The Clinic specializes in diagnosis of *Rhodococcus fascians* (= *Corynebacterium fascians*) and *Agrobacterium*, and they receive samples from all over the states for diagnosis. **Maryna Serdani** developed a LAMP assay for *R. fascians* (Loop-mediated isothermal AMPLification) a few years ago, which allows detection of the bacterium in a little over an hour, and combined with the two PCR primers our lab developed previously, work excellently to detect *R. fascians* in even the most recalcitrant sample. If they had more time we could develop even more such assays, but for some reason samples keep pouring in which keeps them pretty occupied.

In other bacterial news, they are currently collaborating with **Joyce Loper** and **Jeff Chang's** group on sequencing the genome of one of our *R. fascians* isolates. This genus has been sadly neglected and to date the genome of this phytopathogen has not been published.

The Clinic has been fortunate to have a wonderful group of people who are the core of the lab. In 2011 the Clinic was in the capable hands of **Maryna Serdani** while Melodie was away for a year on sabbatical. To help her they hired **Kelly Wallis**, who worked with Maryna when they were both in the laboratory of **Bob Spotts** in Hood River. They make a great team. **Gene Newcomb** has been volunteering in the Clinic for at least four hours daily since he retired, which has been a substantial and significant contribution to Clinic operations. Gene takes care of daily data management, invoices, phones, and processing samples, mail, and walk-in traffic. Gene shoulders a huge burden by managing all these for which the Clinic personnel are eternally grateful. **Sue Jepson** is their webmaster and media maven, organizing and summarizing information, sample data, and the thousands of photos taken of samples. These are used to illustrate the on-line PNW Plant Disease Management Handbook, and are also available as an educational tool for those who wish to view symptoms caused by various biotic and abiotic agents. Sue

recently redesigned our website and it looks fabulous! Take a look at <http://plant-clinic.bpp.oregonstate.edu/>. Sue, Maryna, our many undergraduates have all worked hard to help keep the Clinic up to a high standard of excellence. With Kelly Wallis and **Carrie Lewis** (who worked on a *Rhodococcus* project), all was still in great shape after Melodie's sabbatical. **Bill Gerth**, a Faculty Research Assistant for the Department of Fisheries and Wildlife, has recently joined the Clinic as part-time Insect Diagnostician.

Luisa Santamaria's Bilingual Education Program in Plant Health for Nursery Workers is a series of bilingual workshops developed in 2010 with the support of OSU Extension and ODA. Five different



topics about the Biology of *Phytophthora* and the best management practices were delivered from June – November, in English and Spanish. Eighty-two nursery workers representing 14 nurseries participated in these bilingual workshops (see photo left) series at the North Willamette Research & Extension Center in Aurora. There was a total of 10 workshops comprising 50 hours of training with hands-on activities.

During 2010, Luisa also offered four additional workshops, 2 in English and 2 in Spanish, where different aspects of plant disease identification, root-rot problems in ornamentals, and an introduction to pest and plant diseases were covered.

David Sugar, Southern Oregon Research & Extension Center, presented an invited seminar at WSU in Pullman in March of 2011 covering aspects of postharvest pathology and physiology of pears. He was also an invited speaker at the XI International Pear Symposium last November in Neuquén, Argentina, and in April 2011, participated in the 1st International Congress of Postharvest Pathology in Lleida, Spain.

LEADING PLANT RESEARCHER TO LEAD DANFORTH CENTER

Adapted from: StLtoday.com [BY GEORGINA GUSTIN](#) Posted: Saturday, November 6, 2010



Dr. James C. Carrington became the next President of the Danforth Plant Science Center. The center announced that James C. Carrington, a

leading plant researcher who directs the Center for Genome Research and Biocomputing at Oregon State University, will take the helm of the center, with its \$20 million operating budget and 200 employees. Carrington, 50, will take over from Phil Needleman, who has run the center since founding President Roger Beachy left in October 2009 to run the National Institute of Food and Agriculture, a new unit within the U.S. Department of Agriculture. Carrington was

formally introduced at a conference on Friday November 5 at the center. "I've never seen a single candidate who so fits the moment, the ambitions, the place and the science," Needleman told the audience. The center, founded 12 years ago on land donated by neighbor Monsanto, focuses on genetically engineering plants. One of its primary aims is to donate the technology to developing countries where farmers are struggling to feed themselves. A major project has worked to genetically engineer and improve cassava, a staple food in sub-Saharan Africa that is low in nutrients and susceptible to disease and spoilage. With the help of grant money from the Department of Energy, researchers at the center are also working toward developing algae as a biofuel, and on research involving plants that could produce medicinal compounds. "There are big, comprehensive projects," Carrington said. "The research will continue. Science works in incremental advances." Carrington is a top plant researcher,

particularly noted for his work showing how 'small RNA' controls plant characteristics. In 2002, the journal *Science* called his work a "Breakthrough of the Year." A native of Southern Californian, Carrington earned his bachelor's degree from the University of California Riverside and a doctorate in plant pathology from the University of California at Berkeley. In addition to directing the Center for Genome Research and Biocomputing, he was professor in the Department of Botany and Plant Pathology at Oregon State University. Carrington will relocate his lab to the Danforth Center and will likely bring seven researchers and students with him. He sees the potential to hire as many as five new scientists to the center, which is known in the scientific community as one of the premier work places. "I'm leaving a very good job in a place I love, because the opportunity is so good," Carrington will begin the job May 1, for a five-year contract. He will move to St. Louis with his wife, Teri and four children.

The Society of Nematologists Returns to Corvallis for Its 50th Anniversary

The Society of Nematologists 50th Anniversary Meeting (July 17-20, 2011) returned to where it all started, Oregon State University, Corvallis Oregon, the site of the first SON meeting (August 26-29, 1962), for a celebration of our Science and our Society. The Local Arrangements Committee was chaired by Russ Ingham, Professor in Botany and Plant Pathology. Other BPP members who served on the LAC included Kathy Merrifield, Jack Pinkerton, Nadine Wade and Inga Zasada. The scientific program was organized by James LaMondia from the Connecticut Agricultural Experiment Station.

Before the meeting began on Sunday, July 17, a hardy group of cyclists led by Jack Pinkerton, headed out on the "Tour de Todes". A heavy rainstorm, highly atypical for Corvallis in mid-July, did not dampen spirits and all participants got a hat commemorating the event. Most attendees stayed at the Hilton Garden Inn across the street from the CH2M Hill Alumni Conference center and made a dash through the rain to the registration table. Those who stayed farther away at the Holiday Inn were cheerfully shuttled back and forth by Nadine Wade and Gene Newcomb (also from BPP). At the registration table everyone was presented with a SON-orange bag and a T-shirt with an original design by Kathy Merrifield depicting an "Achievement of Arms" for the Society of Nematologists.

According to the latest registration figures, there were 232 meeting registrants that included 147 regular members, 18 non-members, 33 student members, 11 non-member students, and 15 accompanying persons. Average registration since 2005 had been 185, so participation was very good, especially when one considers that most USDA-ARS members were unable to attend due to travel restrictions from budget constraints. Attendees represented 21 countries and 49 (21%) of the registrants were from outside the United States, confirming that this was truly an international meeting.



**The Society of Nematologists 50th Anniversary Meeting
July 17-20, 2011 Corvallis Oregon**



After a teaching workshop in the morning that discussed a proposition to develop a distance education program in nematology, lunch was served and everyone settled in for the start of the plenary session. LAC chair Russ Ingham greeted the group and introduced SON President Parwinder Grewal who welcomed everyone and introduced Sonny Ramaswamy, Dean of the OSU College of Agricultural Sciences who delivered some thought-provoking comments regarding the needs for the future and what agriculture, including nematologists, must do to meet the needs of people and the planet.



The audience was then thoroughly delighted as Jonathan Eisenback entered the hall dressed as Nathan Cobb, the father of Nematology, and delivered his (Cobb's) memoirs of how his life had led him to be a prominent figure in the developing discipline of nematology. He was followed by George Poinar who discussed the evolutionary history of nematodes and Richard Sikora who presented examples of how SON had impacted nematology worldwide. The plenary session ended with John Webster discussing where the society may go from here.

The group was then treated to fine food and drink in a welcome reception that lasted the rest of the evening. As a pleasant surprise to many, mingling within the crowd was **Harold Jensen**, Local Arrangements Chair and host at the very first SON meeting in 1962.

The next 2½ days were packed with scientific presentations and socializing. The program was represented by 189 abstracts spread among oral sessions in 12 symposia and 8 contributed paper sessions, and 73 posters. Students were well represented accounting for 19 of the posters and two additional oral sessions (16 competitors). The content of the program was very diverse addressing a number of topics concerning plant-parasitic nematodes, entomopathogenic nematodes, free-living

nematodes, freshwater and marine nematodes, and the ecology and molecular biology of many of the above.

Monday evening was capped by another social during time set aside for observing posters. Students were given their own area for a student social. On Tuesday students were treated during lunch to the second "Lunch with Legends", an informal gathering restricted to students and a student-selected group of accomplished nematologists. This year the "legends" included Robin Giblin-Davis, Virginia Ferris, Terry Niblack, Weimin Ye, and Seymour Van Gundy. Sessions ended early on Tuesday afternoon to provide ample time for committee meetings, an approach that appeared to be very successful. Directly after the committee meetings the group photo was taken and then it was on to a social (sponsored by DuPont and MANA) followed by a BBQ on perhaps the nicest evening of the summer thus far. The evening concluded with another poster-viewing session and examining items on display for the Cobb Foundation silent auction while consuming the anniversary cake.

The meeting wrapped up Wednesday evening with a social (sponsored by Monsanto), conclusion of the silent auction, and the awards banquet. During the banquet several nematological societies from around the world congratulated SON on its 50th anniversary. Robin Huettel and Tom powers were honored as new Fellows of the Society and Ed McGawely delivered a nice presentation on the history of SON. The meeting resolutions were given by Ernie Bernard. In closing remarks Russ Ingham announced that since the 1st and 50th meetings in Corvallis had been such a success, that he would reserve the Oregon State University Conference Center for the 100th anniversary meeting as well.

by Russ Ingham

BPP STAFF NEWS

Carleen Nutt joined the BPP family in September, 2012 as our Human Resources Specialist. Carleen's most recent work experience was at GoWireless, Inc., however, she had worked for OSU from 1975-1980. Carleen is a great addition to BPP!!!

Blaine Baker continues to do an outstanding job for BPP and OSU from purchasing equipment to mopping wet floors after extreme weather events and everything in between! Like bring Dianne her vanilla latte every day!!

Dianne Simpson continues to "hang in there" and looks forward to retirement "one of these days".

BPP FIELD LAB NEWS

Aaron Henderson

Aaron Henderson, Farm Manager for BPP, accepted a position as Associate Pastor at his church. Aaron took over the farm management when Lew Tate retired in 1998. Beginning Dec. 2010, Aaron worked part time at the farm while the search was undertaken for his replacement.

Steve Cluskey

Long-time Senior Faculty Research Assistant with Jay Pscheidt has accepted the Farm Manager position for the BPP Field Lab in May 2011. We welcome Steve in his new position and wish him every success.

FROM A FORMER CHAIRPERSON/DEPARTMENT HEAD

Once again the year has flown, each year moving more swiftly than the last---a trick of time, I think, in which each year is a smaller portion of one's total life. Perhaps that is the cause of the time rush, or perhaps it is simply the abundance of tasks and competing interests that make each day too short. In any case, it is good to

have a chance to greet you again and to celebrate with the department the many successes enjoyed by our students, faculty, and staff. I continue to enjoy my work as an associate dean---providing assistance for the many units under my watch is gratifying. I have the pleasure of working with many wonderful colleagues across the university

both in Corvallis and across the state (seven of the branch station locations are on my list). Several of my assignments are marine related and include the Marine Mammal Institute and the Coastal Oregon Marine Experiment Station located in Newport, the Seafood Laboratory in Astoria, and the Department of Fisheries and Wildlife. I also get to work with Food Science and Technology on campus and the Food Innovation Center (a partnership with the Oregon Department of Agriculture) in Portland. For sure, the variety of programs provide lots of opportunities to learn about new research and ways to extend it nationally and internationally. Botany and Plant Pathology remains on my list and that is wonderful too.

It has been great having Dan Arp as Dean of the College of Agricultural Sciences since May 2012. I was department head when he was hired in Botany and Plant Pathology in 1990 and as you may recall, he followed me as department head

when I moved to the College as associate dean. He served as Dean of the Honors College from 2008 until the Provost asked him to take on the much larger and complex job that our college entails. Dan is providing new energy and direction for our many efforts which I greatly appreciate.

Our family is well and a bit further flung than in some year's past. We celebrate having the joy of six grandchildren. Our daughters are in Portland, OR, Annandale, VA and San Diego, CA which means we are doing a fair amount of travelling between locales. If you come to campus, please let me know---my office phone remains 541-737-5264 and my e-mail:

stella.coakley@oregonstate.edu. I enjoy your visits and calls. Wishing you the best for the year ahead.

by Stella Melugin Coakley

CHILDREN OF FRIENDS VISIT BPP

Richard Halse and **Mamatha Hanumappa** hosted a group of children aged between 3 and 13 years from the Bal-Vihar ("childrens' garden"), a Sunday school run by some families living in Corvallis but originally hailing from India. The children were given an overview of the OSU Herbarium and enjoyed learning about the work that goes on there. They were then taken into one of the BPP laboratories where they looked at pre-stained slides of corn root and shoot, learned about the importance of light in plant growth and development by comparing light-grown and etiolated tomato seedlings and observed how water is taken up by celery stems.



There were a lot of questions about why and how plants are preserved and about how we do research in the greenhouse. The final feed-back was that it was a very "cool, informative and interesting" visit.

UNDERGRADUATE STUDENT NEWS

BPP CLUB

The OSU Botany Club has undergone a very encouraging resurgence in the past year. In the Fall term, we carried out plant hikes and mushroom forays to the north side of Mary's Peak west of Corvallis. Over winter break, students journeyed south to the painted hills of California's Death Valley. In February we toured the greenhouse of a Corvallis resident who

cultivates an array of exotic and native plants, including many orchids. We have increased fundraising efforts and visibility through participation in the OSU Agricultural Executive Council, through merchandise sales, and through public plant sales. Plans are in the works to collaborate with the OSU Organic Grower's Club for the 2nd Annual Hoo-Haa event in April. Also in

April is a foray to the Glide Wildflower Show, with camping and botanizing in the surrounding Umpqua country. We look forward to encouraging more student involvement in botany-related science and policy issues, as well

as increasing our recreational activities and our visibility in the community!

*by Rob Smith, Projects Coordinator,
BPP Club 2010-2011*

Congratulations to the following students who received a **B.S. in Botany 2010-2013:**

Jonathan Halama
Charity Deatherage
Lori Deskins
Amanda Ohrn
Ian Hunter
Julie Nist
Sean Elseth
Robert Smith
Matt Groberg
Bryce Johnson
Stephanie Vandruff
Bailey Roe
Christina Wessler
Katrina Isch
Devin Stucki

Julia McGonigle
Gina Bono
Anna Bonnete
Daniel Miller
Emily Beezup
Andrew Corkery
Jared Streich
Elisa Alphandary
Bryan Christian
Nathan Nolte
Erin Conley
Ashley Ottombrino
Rheannon Arvidson
Kenny Wu
Melissa Jackson

Zachary Foster
Jacki Young
Zachariah Weinstein
Brad Mead
Valerie Fraser
Jamie Coggins
Nikolas Gianopulos
Dylan Beorchia
Lin Gu
Samuel Moore
Rose Clarke
Meghan Hemingway
Leah Platt
Chris Gorman

GRADUATE STUDENT NEWS 2010-2011

The BPP graduate students have enjoyed another exciting year filled with important academic breakthroughs, entertaining social activities and educational community outreach. We kick off the school year with our annual **Beach weekend** in Lincoln City, Oregon. We take the opportunity each fall to get away for a couple days, welcome the new grads to the department, reconnect with our peers and, perhaps most importantly, enjoy a fantastic feast made from grad-gathered local mushrooms.

We hosted a couple of tables at both the fall and spring **Discovery Days** where we shared the joy of lichens, fungi and native plants with elementary school students and members of the public. Inspiring young minds to scientific investigation is extremely rewarding and many grads commented that they felt reinvigorated after spending an hour with these inquisitive kids (photos above and left).

In honor of the 100th anniversary of the Department of Botany and Plant Pathology, the Graduate Student Association (GSA) released a new t-shirt with the BPP wordle design. We have also released a cider glass with a design that highlights the fungal disease, apple scab and re-released the popular pint glass featuring the hops plant. All three items have been very popular with students and faculty ensuring that the **travel fund** administered by the GSA remains flush.

One of the strengths of our department is the diversity of research being conducted by our faculty and graduate students. Here is what a few of us have been up to this year:



Katie Gallagher (Thorpe lab), won the Portland Garden Club Katherine R. Pamplin's Fellowship for her proposal "Are introduced populations of the endangered *Erigeron decumbens* recruitment limited?" She studied this species to learn its recruitment rates and what ecosystem factors might influence them and completed her MS in September 2012.

Tyler Gordon (Pfender lab) has continued his work on a stem rust overwintering survival model and the effects of a mycoparasite on overwintering populations. He presented a poster with his research at the Oregon University System sustainability conference in Corvallis and then completed his MS in September 2011.

Erin Gray, (Muir lab), finished up her MS research on the invasion potential of *Kochia prostrata* (forage kochia), a non-native species that has been introduced throughout western rangelands for soil stabilization, forage, and its ability to compete with exotic annual plant species. She conducted field work throughout southwestern Idaho and presented a poster of her work at the Society for Range Management meeting in Billings, Montana. Erin graduated June 2011.

Sierra L. Hartney, (Loper lab) published some of her PhD thesis research in BioMetals with the title: TonB-dependent outer-membrane proteins and siderophore utilization in *Pseudomonas fluorescens* Pf-5. She presented a talks on her research at the Phyllosphere 2010: 9th International Symposium on the Microbiology of Aerial Plant Surfaces meeting and 10th US-Japan Seminar 2010: Genome-Enabled Integration of Research in Plant Pathogen Systems. Both meetings were held in Corvallis Oregon on the OSU campus. Sierra graduated March 2011.

Katie Jones (Kaye lab), completed her research on ecological drivers of rare plant establishment in upland prairie systems. Some of her research was been supported by a Portland Garden Club Fellowship and by an amazing group of undergraduate volunteers. She presented a poster of findings at the Ecological Society of America meeting in Austin. Katie graduated June 2012.



Alija Mujic (Spatafora lab) is investigating the evolutionary biology of ectomycorrhizal symbiosis using a study system that extends around the northern half of the Pacific Rim. Last summer, Alija traveled to Japan under an NSF EAPSI fellowship where he worked with **Dr. Kentaro Hosaka** (BPP alumnus) at the Japanese Museum of Nature and Science. While in Japan, Alija discovered a new species of ectomycorrhizal fungus associated with the rare and threatened Japanese Douglas Fir; he will present the ramifications of this discovery this summer at the annual meeting of the Mycological Society

of America in Fairbanks, Alaska. Before traveling to Alaska, Alija will be engaged in field work in the mountains of Southern California's Los Angeles, Riverside and San Diego Counties.

Peter Nelson (McCune lab) identified lichens he collected from Denali National Park and Preserve, and worked with vegetation data he collected to map caribou forage resources using satellite imagery. He also studied lichen specimens from Alaska, Russia and China to revise a species complex in the genus *Parmelina*. He contibuted to several collaborative publications including a paper describing new lichen records for Alaska, an article on community phylogenetics and a study on the molecular phylogeny of the lichen genus *Polychidium*. Peter and collaborators have also produced two lichen posters, one for Denali National Park and the other for the Validivian temperate rainforest, as well as a virtual tour of lichens and mosses of Denali; all three are available to the public.

Matthew Parks, (Liston Lab), received funding from an Oregon Lottery scholarship. Collaborating with **Richard Cronn's** lab, Matt sequenced chloroplast genomes for almost all of the world's pine species, clarifying evolutionary relationships within the genus *Pinus*. Results were presented at several meetings, including Botany 2010 and Evolution 2010, Plant and Animal Genomes 2011, and Matt was an invited

speaker for the Illumina Users Symposium (spring 2010). With Dr. Liston and Dr. Cronn, Matt published an article on primers they developed for amplification of a highly divergent chloroplast locus (*ycf1*) in the pine family, and is preparing a manuscript on the evaluation and mitigation of phylogenetic noise in their plastome-scale dataset. Matt defended his PhD Summer 2011.

Ian Pflingsten (Kaye lab) presented a poster about his research on forecasting the effects of climate change on rare plant populations at the 2010 Ecological Society of America conference in Pittsburg; he was awarded a GSA travel grant to attend this conference. Ian also presented a talk on the same topic at the 2011 OSU Biology Graduate Student Symposium. Ian graduated December 2012.

Diego Quito, (Martin lab) published the full sequence of Raspberry latent virus (RpLV) the first reovirus isolated from raspberries, and is now working on the vector and epidemiology of RpLV. Diego collaborated on a paper on the biology and genetic organization of a new viti-virus from Alaskan *Ribes* species, previously fully sequenced. Research was presented (3 posters and one oral) at the American Phytopathological Society Meeting in Hawaii. Diego was awarded the Larry Moore Graduate Research Award for 2011 and graduated December 2011.

Laura Sims (Hansen lab) switched from a Masters to a PhD program in Botany and Plant Pathology. Her research entails examining and characterizing *Phytophthora* in Western Oregon Riparian Ecosystems.

Kat Sweeney (Stone lab) worked on the classification of Hypersensitivity Responses (HR) in five-needle white pines affected with the white pine blister rust fungus *Cronartium ribicola*. She received the 2011 Anita Summers travel grant and will be using it to attend the Mycological Society of America meeting in Fairbanks, AK, present a poster of her work. Kat graduated December 2013.

Caity Smyth (Fowler lab), began her PhD program at OSU with rotations in a couple BPP labs. She decided to Dr. Fowler's lab to conduct her research into pollen tubes.

Kevin Weitemier M.S. (Liston lab) continues his PhD research. He and Dr. Liston are using genomic techniques to investigate the milkweed genus, *Asclepias*. Kevin has characterized differences among copies of DNA that encode for ribosomes, shedding light on how these regions evolve and how they can be used when reconstructing plant phylogenies. He has presented this work at both regional and international conferences. He has also been involved with the online science mentoring group PlantingScience.org, and served as a judge at a regional science fair.

by Katie Jones, GSA President

RECENT THESIS TITLES BOTANY AND PLANT PATHOLOGY

Bomberger, Rachel	MS	Ocamb	12/13/2013	Presence and pathogenicity of <i>Fusarium</i> and <i>Verticillium</i> species in commercial red radish (<i>Raphanus sativus</i>) seed production in the Willamette Valley of Oregon.
Sweeney, Katarina	MS	Stone	12/13/2013	Histological comparisons of needle tissues of four species of white pine infected with <i>Cronartium ribicola</i> .
Groberg, Matt	MS	Meinke	12/13/2013	An experimental reintroduction of <i>Pleuropogon oregonus</i> , a rare wetland grass native to Oregon.
Nelson, Peter	PhD	McCune	12/13/2013	Lichen communities and caribou habitat in Denali National Park and Preserve, Alaska, USA.
Navarro, Sarah	PhD	Hansen	9/6/2013	Pathogenicity of <i>Phytophthora</i> species from Oregon waterways.
Raizen, Nathaniel	MS	Grunwald	6/15/2013	Fungal Endophyte Diversity in Foliage of Native and Cultivated <i>Rhododendron</i> Species Determined by Culturing, ITS Sequencing, and Pyrosequencing.

Phatale, Palavi	PhD	Michael Freitag	3/22/2013	Studies on the Centromere-Specific Histone, CenH3, of <i>Neurospora crassa</i> and Related Ascomycetes.
Holman, Thomas	MS	Lynda Ciuffetti	12/7/2012	<i>Pyrenophora tritici-repentis</i> : Investigation of Factors that Contribute to Pathogenicity
Pfingsten, Ian	MS	Tom Kaye	12/7/2012	Using Local Climate to Explain Temporal Variation in Rare Plant Populations.
Shay, Sarah	MS	Jennifer Parke	12/7/2012	Viability and Infective Potential of <i>Phytophthora pini</i> Zoospores in a Recirculating Irrigation System.
Gallagher, Katherine	MS	Andrea Thorpe	9/7/2012	Recruitment Predictors of an Endangered Prairie Species: A Case Study of <i>Erigeron decumbens</i>
Rangel, Lorena	MS	Joyce Loper	9/7/2012	Genomics-enabled Exploration of Insect Toxicity in the <i>Pseudomonas fluorescens</i> Group.
Stamm, Elizabeth	MS	Jennifer Parke	6/17/2012	The Effects of <i>Phytophthora ramorum</i> Stem Inoculation on Aspects of Tanoak Physiology and Xylem Function in Saplings and Seedlings.
Jones, Katherine	MS	Tom Kaye	6/17/2012	Factors Affecting Establishment and Germination of Upland Prairie Species of Conservation Concern in the Willamette Valley, Oregon.
Hesse, Cedar	PhD	Joey Spatafora	6/17/2012	Characterization of Fungal and Bacterial Communities Associated with Mat-forming Ectomycorrhizal Fungi from Old-growth Stands in the H.J. Andrews Experimental Forest.
Heckert, Stephanie	MS	Jay Pscheidt	3/23/2012	Ascospore Viability and Dispersal from Pruned Branches Infected with <i>Anisogramma anomala</i> .
Hartney, Sierra	PhD	Joyce Loper	3/23/2012	TonB-dependent Outer-membrane Proteins of <i>Pseudomonas fluorescens</i> : Diverse and Redundant Roles in Iron Acquisition.
Peterson, Ebba	PhD	Everett Hansen	3/23/2012	The Epidemiology of Sudden Oak Death in Oregon Forests.
Gordon, Tyler	MS	Bill Pfender	12/9/2011	Overwintering Survival of Stem Rust on Perennial Ryegrass: Construction of a Simulation Model, and Effects of the Mycoparasite <i>Sphaerellopsis filum</i> .
Quito, Diego	PhD	Bob Martin	12/9/2011	Impact of Raspberry bushy dwarf virus, Raspberry leaf mottle virus, and Raspberry latent virus on Plant Growth and Fruit Crumbliness in Red Raspberry (<i>Rubus idaeus</i> L.) 'Meeker'.
Wijayratne, Upekala	PhD	David Pyke/Pat Muir	12/9/2011	Seed and Seedling Ecology of <i>Artemisia tridentata</i> in a Restoration Context.

Hubbard, Andrew	MS	Ken Johnson	9/2/2011	Evaluation of Kasugamycin-use Strategies Designed to Delay Development of Resistance in <i>Erwinia amylovora</i> .
Root, Heather	PhD	Bruce McCune	9/2/2011	Cryptogam Communities in Forest and Steppe Ecosystems of Oregon, USA.
Parks, Matthew	PhD	Aaron Liston/Richard Cronn	9/2/2011	Plastome Phylogenomics in the Genus <i>Pinus</i> Using Massively Parallel Sequencing Technology.
Taylor, Clare	MS	Nik Grunwald	9/2/2011	Comparative Epidemiology of <i>Phytophthora</i> Diseases of <i>Rhododendron</i> .
Gray, Erin	MS	Pat Muir	6/11/2011	An Evaluation of the Invasion Potential of <i>Kochia prostrata</i> (forage kochia) in Southwestern Idaho, USA
Kepler, Ryan	PhD	Joey Spatafora	3/18/2011	Advances in Molecular Systematics of Clavicipitaceous Fungi (Sordariomycetes: Hypocreales).
Lintz, Heather	PhD	Bruce McCune	3/18/2011	Ecological Thresholds, Climate Extremes, and Tree Species' Distributions across the Pacific Coastal United States.
Martin, Elizabeth	PhD	Bob Meinke	12/10/2010	Reproduction, Demography, and Habitat Characterization of <i>Astragalus peckii</i> (Fabaceae), a Rare Central Oregon Endemic.
Cerruti, Natasha	PhD	Cindy Ocamb	9/3/2010	Examinations of <i>Fusarium sambucinum</i> on <i>Humulus lupulus</i> and Co-infection with Hop stunt viroid in Commercial Hop Fields.
Wallace, Patricia	MS	Walt Mahaffee	9/3/2010	Evaluation of the Colonization and Biofilm Production by <i>Burkholderia pyrocinia</i> FP62 on Geranium Leaves.
Mitchell, Melanie	MS	Dave Gent	9/3/2010	Addressing the Relationship Between <i>Pseudoperonospora cubensis</i> and <i>P. humuli</i> using Phylogenetic Analyses and Host Specificity Assays.
Frentress, Jason	MS	Kate Lajtha	9/3/2010	Stream DOC, Nitrate, Chloride and SUVA Response to Land Use during Winter Baseflow Conditions in Sub-basins of the Willamette River Basin, OR.

RECENT THESIS TITLES INTERDISCIPLINARY PROGRAMS WITH BPP MAJOR PROFESSORS

Gilbert, Brian	PhD	Tom Wolpert	MCB	2012	Characterization of the Response Mediated by the Plant Disease Susceptibility gene <i>LOV1</i> .
Leytem, Alicia	MS	Jennifer Parke	SS	2012	Response of Striga-susceptible and Striga-resistant sorghum genotypes to soil phosphorus and colonization by an arbuscular mycorrhizal fungus
Thomas, William	PhD	Jeff Chang	MCB	2012	Identification and Characterization of Type III Effector Proteins in Plant-Associated Bacteria

Kimbrel, Jeffrey	PhD	Jeff Chang	MCB	2012	Genome-enabled Discovery and Characterization of Type III Effector-encoding Genes of Plant Symbiotic Bacteria
Fox, Sam	PhD	Todd Mockler	MCB	2011	Transcriptomic Analysis using High-throughput Sequencing and DNA Microarrays
Woods, Joanna	M.ag	Dave Gent	CSS/Ent	2011	Tactics for Enhancing Conservation Biological Control of Twospotted Spider Mites, <i>Tetranychus urticae</i> Koch, in Pacific Northwest Hop Yards
Cuperus, Josh	PhD	Jim Carrington	MCB	2011	Processing and Functional Diversity of Plant MicroRNA
Fahlgren, Noah	PhD	Jim Carrington	MCB	2011	Origins and Evolution of Plant MicroRNA Genes

AWARDS, HONORS AND PROMOTIONS

Faculty and Staff

Lynda M. Ciuffetti , 2014 Purdue University College of Agriculture Distinguished Agriculture Alumni Award

Brett Tyler, 2013 Friendship Award of China

Bruce McCune, 2013 OSU Alumni Association Distinguished Professor

Blaine Baker, 2013 OSU Exemplary Employee Award

Pankaj Jaiswal, 2013 Phi Kappa Phi Emerging Scholar

Philip B. Hamm, 2012 Roy G. Arnold, Agricultural Research Foundation Leadership Award

Christopher Sullivan, 2012 OSU Professional Faculty Exemplary Employee Award

Kenneth B. Johnson, 2012 R.M. Wade Award for Excellence in Teaching/Registry of Distinguished teacher

Maryna Serdani , 2012 CAS Agricultural Research Foundation Research Assistant Award

Jeffrey Chang, 2012 Phi Kappa Phi Emerging Scholar

Len Coop, Hans Luh, and members of the IPPC - The International IPM Award, 2012

Kenneth B. Johnson, 2012 Fellow of the American Phytopathological Society

Lynda M. Ciuffetti, 2011 Fellow of American Association for the Advancement of Science

Donald J. Armstrong, 2011 Diamond Pioneer Award

Daniel J. Arp, 2011 D. Curtis Mumford Faculty Service Award

Jeffrey Stone, 2011 Distinguished Professor Award, Agricultural Executive Council, College of Agricultural Sciences

Lynda M. Ciuffetti, 2011 Fellow of the American Phytopathological Society

Lynda M. Ciuffetti, 2010 OSU F.E. Price/Agricultural Research Foundation Award for Excellence in Research

Lynda M. Ciuffetti, 2010 OSU Alumni Association Distinguished Professor Award

Thomas J. Wolpert, 2011 Fellow of the American Phytopathological Society

Valerian Dolja, 2011 American Phytopathological Society, Ruth Allen Award

Nadine Wade, 2010 OSU Agricultural Research Foundation, Faculty Research Assistant Award

Philip B. Hamm, 2010 Potato Association of America, Researcher of the Year Award

Todd Mockler, 2010 OSU Promising Scholar Award

Jeffrey Chang, 2010 OSU Faculty Teaching Excellence Award

Dianne Simpson, 2010 OSU Exemplary Employee Award

Thomas Kaye, Promotion to Associate Professor (Courtesy), July 2013
Luis Sayavedra-Soto, Promotion to Professor (Senior Research), July 2012
Niklaus Grunwald, Promotion to Professor (Courtesy), July 2012
Jeffrey Chang, Promotion to Associate Professor with Indefinite Tenure, Sep 2012
Michael Behrenfeld, Granted Indefinite Tenure, July 2011
David Gent, Promotion to Associate Professor (Courtesy), July 2011

Students

- *Undergraduates*

Joseph Schmidt, 2013 Ernest and Pauline Jaworski Scholarship for Summer Experiences for Underserved Undergraduates in Plant Science
Jamie Coggins, 2013 Outstanding Senior Award
Kayleigh Cannady, 2013 Charles and Helen Fulton Memorial Scholarship
Katherine Benson, 2013 Charles and Helen Fulton Memorial Scholarship
Eric Larson, 2013 Thomas C. Moore Memorial Scholarship
Jeannie Klein, 2013 Thomas C. Moore Memorial Scholarship
Elizabeth McWilliams, 2013 Jean Siddall Memorial Scholarship
Jessica Tran, 2012 Ernest and Pauline Jaworski Scholarship for Summer Experiences for Underserved Undergraduates in Plant Science
Michele Tan, 2012 Ernest and Pauline Jaworski Scholarship for Summer Experiences for Underserved Undergraduates in Plant Science
Kori May, 2012 Thomas C. Moore Memorial Scholarship
Jesse Davis, 2012 Thomas C. Moore Memorial Scholarship
Leah Platt, 2012 Charles and Helen Fulton Memorial Scholarship
Eric Larson, 2012 Charles and Helen Fulton Memorial Scholarship
Brad Mead, 2012 Outstanding Senior Award
Rheannon Arvidson, 2012 Outstanding Senior Award
Shannon Fraser, 2012 Jean Siddall Memorial Scholarship
Robert Smith, 2011 Outstanding Senior Award
Bridget Chipman, 2011 Outstanding Senior Award
Bridget Chipman, 2011 Thomas C. Moore Memorial Scholarship
Shannon Fraser, 2011 Jean Siddall Memorial Scholarship
Eric Larsen, 2011 Charles and Helen Fulton Memorial Scholarship
Rheannon Arvidson, 2010 Charles and Helen Fulton Memorial Scholarship
Kindra Amoss, 2011 Thomas C. Moore Memorial Scholarship
Katelyn Banta, 2011 Thomas C. Moore Memorial Scholarship
Jackie Young, 2011 Thomas C. Moore Memorial Scholarship
Sarah Layoun received the 2011 Ernest and Pauline Jaworski Scholarship for Summer Experiences for Underserved Undergraduates in Plant Science
Andrew Corkery, 2011 DeLoach Work Scholarship, and 2011 URISC Award

- *Graduates*

Joseph Hulbert, 2013 Larry Moore Award for Graduate Education in Plant Pathology
Brian Atkinson, 2013 Moldenke Fund for Plant Systematics
Kevin Weitemier, 2013 Bonnie C. Templeton Endowment
Alija Mujic, 2012 Leslie and Vera Gottlieb Research Fund in Plant Evolutionary Biology
Kevin Weitemier, 2012 Moldenke Award for Plant Systematics
Sierra Wolfenbarger, 2012 Larry Moore Award for Graduate Education in Plant Pathology
Lea Condon, Matt Groberg and Caitlin Lawrence received 2012 Portland Garden Club Scholarships from the Katherine R. Pamplin Fund
Katie Jones, received an Oregon Sports Lottery Scholarship

Erin Gray Sanders, Wade Holman, Jeff Kimbrel, Kat Sweeney, Bill Thomas and Samantha Colby Sierra Hartney, Katie Jones, Katie Gallagher, Laura Sims, Alisha (Owensby) Quandt, Alija Mujic, Susan Thies, Matthew Geniza, Alfredo Diaz Lara, Kevin Weitemier, Sierra Wolfenbarger, Daniel Farber and Caitly Smyth received Anita Summers Graduate Student Travel Awards
Katie Gallagher and Elizabeth Stamm received 2011 Portland Garden Club Scholarships from the Katherine R. Pamplin Fund
Diego Quito, received the 2011 Larry Moore Award for Graduate Education in Plant Pathology
Kevin Weitemier, 2011 Moldenke Award for Plant Systematics

HIRAM LAREW ESTABLISHES GLOBAL EXPERIENCES FUND

Hiram Larew, BPP alum and 2010 CAS Legacy Award recipient (see p. XX), has established a new fund in the College of Agricultural Sciences to support students and faculty gaining global experiences related to food and agriculture. Administered by the OSU Foundation, this fund is intended to broaden international perspectives in the College's teaching, extension and research programs. Dr. Larew has served in the science, policy and management of the US Government's agricultural science programs, and in particular from 1987-1998, the US Agency for International Development, and since 1998 as Director of International Programs at the US Department of Agriculture. His involvement in creating innovative partnerships between American universities, business, governments and charitable organization to assist countries around the world has revealed the increasing importance that students and faculty be aware and involved in global agriculture. It is intended that other donors will contribute to this fund to enable regular annual competitive awards to be made to enhance the College's impact in this area. More information can be found at <http://agsci.oregonstate.edu/international/global-agriculture>; there is also a link for donors to make additional gifts.

IN MEMORIUM

Leslie D. Gottlieb, 75, of Ashland, Ore., passed away Tuesday, January 31, 2012 from the complications of pancreatic cancer. Leslie David Gottlieb was born in New York City in 1936. Following a Bachelor of Arts degree from Cornell University in 1957, he earned a Master's degree from Oregon State University in 1965, where he studied hybridization between species of manzanita in southwestern Oregon. 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 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. Gottlieb researched a broad array of subjects including plant speciation, polyploidy, biochemical evolution of isozymes and molecular genetics. He will be long remembered as a pioneer and strong advocate for 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*. He also wrote the Flora of North America treatment of *Stephanomeria*.

Gottlieb published more than 120 research papers and received a number of awards including a John Simon Guggenheim Fellowship (1975), Fellow of the American Association for the Advancement of Science (1985), Alumni Association Fellow of Oregon State University (1993), and the Botanical Society of America Merit Award (2000) and Centennial Fellow Award (2006).

In 2004, Leslie and his wife Vera Ford Gottlieb retired from UC Davis to Ashland, Oregon. He was active in the Native Plant Society of Oregon, and served as the Chair of the Rare and Endangered Plants Committee. Leslie is especially remembered in the Department of Botany and Plant Pathology for the support he and Vera provide for our

graduate students conducting research in the area of Plant Evolutionary Biology.

Charles M. Leach Oct. 28, 1924 - April 7, 2011

Charles (Chuck) M. Leach died peacefully at home in Corvallis.



His beloved wife of 61 years, Jean, passed away this year, September 2013; he is survived by his children; and granddaughters. He was an avid hiker, runner, kayaker and artist; co-founder of the Willamette Canoe and Kayak Club; long-term

member of the Corvallis Park Board; and emeritus professor of botany at Oregon State University. Dr. Leach was born in Sacramento, California. He received his B.S. in 1949, and a B. Agr. in 1950 from the The Queen's University of Belfast in Northern Ireland. He received his Ph.D. degree from Oregon State University in 1956, under the direction of Lew Roth. His thesis addressed the fungi on clover seed. From 1951 to 1957 he was an Instructor-Research Assistant in the Department of Botany and Plant Pathology at Oregon State University. He joined the faculty of BPP in 1957 as an Assistant Professor and was promoted to full Professor in 1966. Dr. Leach earned an international reputation for his work on the physiology of reproduction, especially the role of light, and including mechanisms of spore discharge and dispersal, in selected plant pathogenic fungi. During sabbatical leaves he visited universities and research institutes in

England and New Zealand and contributed substantially to the international stature of the department through his research. He taught several courses including introductory classes and graduate courses in plant pathology and was one of the Department's most effective, respected and dedicated teachers during his tenure. He maintained the highest expectations of his students, and they rose to the challenge. For many, BOT 550 was both the most difficult and the most stimulating class on their program. Departmental coffee time was regularly enlivened by the mostly good-natured verbal jousting between Chuck and more conservative faculty, and he brought his clear thinking and academic rigor to bear at faculty meetings as well. Dr. Leach retired in 1987. At his retirement dinner we celebrated his many contributions with humor. His many "inventions" of special apparatus to aid his work on fungus physiology were demonstrated in slightly enhanced form as rivaling the work of Rube Goldberg himself. His temperature gradient plate was copied in labs around the world, and the original versions continued to be used in several labs in the department long after his retirement. Dr. Leach was nominated to the Diamond Pioneer Agricultural Career Achievement Registry by the College of Agricultural Sciences in 2003. After retirement Dr. Leach continued to reside in Corvallis and enjoyed hiking, canoeing, traveling and painting. He was a talented and well known artist in the community. He continued to benefit the programs at OSU by his generous donation of artwork that was used to support graduate student travel and the department seminar fund.

by Dianne Simpson and Everett Hansen

THANK YOU DONORS

The following individuals and organizations generously supported the Department with donations received between March 2010 and November 2013. Those who wish to remain confidential are not listed.

Thomas and Donna Allen
Edward Alverson and Angela Ruzicka
James and Deanna Anderson
Warren and Sandra Arnold
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Gordon Wogan and Patricia Hatfield
Dennis and Betty Woodland
Barry and Ella May Wulff
Jo Ann Yeager
Stanford and Susan Young
Donald and Priscilla Zobel

ALUMNI NEWS

Hiram Larew of Upper Marlboro, MD., received the **2010 CAS Legacy Award** for career lifetime achievement. Dr. Larew works for the U.S. Department of Agriculture as director of the Center for International Programs at the National Institute of Food and Agriculture. He oversees programs in sustainable development in Asia and Africa and guides Extension and food aid research projects in Iraq. He also is a published poet and was a 2006 nominee for the Pushcart Prize. Dr. Larew earned his master's degree in botany from OSU in 1977 with **Fred Rickson**, and a doctorate in entomology with **Peter McEvoy** from the university in 1981.



From left to right: Jim and Stella Coakley, Liz (Hiram Larew's sister) and Hiram Larew, Peter McEvoy, Dianne Simpson, and Lynda Ciuffetti

Judy Jernstedt For her overarching professional service with the Botanical Society of America, Dr. Jernstedt was presented with the **College of Agricultural Sciences Distinguished Alumni Award in the category of Leader in 2011**. She was Treasurer of the Society from 1992 to 1998; she



was then elected as President in 2001, and has been Editor-in-Chief of its award-winning monthly journal, the *American Journal of Botany*, since 2005. She is the first female at the helm of this journal in its now 100-year history and has truly shown extraordinary leadership in this role, which she will hold until 2015. During Dr. Jernstedt's tenure, this publication received international recognition as one of the top 10 most influential journals in biology and medicine over last 100 years. Dr. Jernstedt earned her BS in Botany from OSU in 1973, followed by MS and PhD degrees from UC Davis where she is currently Professor.

Douglas Ripley

James Douglas (Doug) Ripley completed his Ph.D. in plant ecology in 1984 with major professor **William Chilcote**. Dr. Ripley has had a distinguished career in research, teaching, and natural resource management and was honored with the **2012 College of Agricultural Sciences Legacy Award** to recognize his lifetime achievement.



Dr. Ripley's career is notable in how it demonstrates the value of "continuous learning" through a combination of formal and informal educational opportunities. Dr. Ripley served as an Air Force Disaster Preparedness Officer at multiple international and national bases. He then became an Assistant Professor in Biology at the US Air Force Academy in Colorado. He had a long career teaching numerous courses in the full spectrum of biology the US Air Force Academy. In addition, he conducted a long-term ecological research project on the Academy Reservation. Dr. Ripley's civilian career with the Air

Force culminated as Conservation Program Manager for the Environmental Division of the Air National Guard overseeing the management of natural and cultural resources conservation at Units throughout the US and US territories. His direct contributions extended far beyond the communities in which military programs are located to a wide variety of ecological settings.

Since 2004, Dr. Ripley has worked as an independent environmental consultant for a variety of environmental programs.



Our new poster in action at Ag Day on the MU Quad in 2013

Alumni – please keep sending your news we love to hear from you

We have a new website address and a new look please visit us at

<http://bpp.oregonstate.edu>

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 honor and 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, Dallice I. Mills Seminar Fund, Mary L. Powelson Fund, Alfred H. Soeldner Fund, Donald B. Zobel Fund, William Chilcote Memorial Fund, William C. Denison Memorial Fund, Harold Evans Memorial Fund, MacSwan Memorial Fund, F. McWhorter Memorial Fund, E. Otto Memorial Fund, Mark T. Patterson Fund, Harry K. Phinney Memorial Fund, James Sandeno Memorial Fund,** and the **Roy A. Young 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.

Georgia Mason Herbarium Fund provides funds for a student worker to participate in the day-to-day operating activities of the Herbarium and its programs.

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.



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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:

- Where need is greatest
- Student support (research and travel)
- Bonnie B. Hall Student Activity Fund
- Bill and LaRea Johnston Fund for Undergraduate Education
- Oregon Flora Endowment
- Bonnie C. Templeton Endowment Fund
- Larry Moore Endowment Fund
- Thomas C. Moore Memorial Endowment
- Posies and Pathogens Newsletter
- Anita Summers Graduate Student Travel Fund
- Leslie and Vera Gottlieb Research Fund in Plant Evolutionary Biology
- Botany and Plant Pathology Endowment in Honor and Memory of Alumni and Friends in name of _____

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THANK YOU FOR YOUR SUPPORT