POSIES & PATHOGENS

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FROM THE DEPARTMENTAL CHAIRPERSON

After fifteen years at the helm, Stella Coakley gave up her appointment as Department Chair on January 1, 2004 to take a new position as an Associate Dean in the College of Agricultural Sciences. She has left a positive and lasting impression on the department. While she will be missed here, we certainly wish her well in her new job. For fourteen of those fifteen years, Stella was my boss. Now I'm Department Chairperson and Stella is an Associate Dean, and guess what…she's still my boss!

For those of you who don't know me, I was raised on a farm in Nebraska and earned my B.S. from the University of Nebraska in 1976. Yes, I do still bleed Cornhusker Red! I moved to Wisconsin where I earned my Ph.D. with Bob Burris (1980), and then completed a postdoctorate in Germany. In 1982, I became an Assistant Professor of Biochemistry at the University of California-Riverside. In 1990, I moved to OSU as an Associate Professor of Botany and Plant Pathology and Director of the Laboratory for Nitrogen Fixation Research. I filled the position vacated with the retirement of Harold Evans. My administrative experiences at OSU have included seven years as Director of the Molecular and Cellular Biology Graduate Program and one year as Acting Chairperson of Botany and Plant Pathology while Stella was on leave at USDA last year.

My research interests include the nitrogen cycle, genomics, and bioremediation. We study bacteria from the soil that carry out transformations of nitrogen. We now have the complete genome sequence (all 2.8 million base pairs!) of our favorite ammonia-oxidizing bacterium. Our bioremediation efforts involve using bacteria to clean up environmental pollution. Bacteria growing on butane and toluene have captured our attention as bioremediation agents. We have active collaborations with Peter Bottomley, Microbiology, and Lew Semprini, Environmental Engineering.

My wife, Wanda, works at Garfield Elementary School. She's involved in many projects, including the reading recovery program. Our 24-year old daughter, Sarah, completed her English degree at OSU in June 2003. She and her dog, Buddy, are headed to Los Angeles this summer where Sarah will begin a two-year stint in the "Teach for America" program. Our 20-year old son, James, lives in Eugene and has started taking classes at Lane Community College.

If you find yourself in Corvallis or on campus, stop in and say hi. It's always great to meet and catch up with friends of the Department. I look forward to seeing many of you on May 22 at the retirement celebration for Don Armstrong, Mary Powelson, and Don Zobel.

Dan Arp
Professor and Chairperson
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FROM A FORMER DEPARTMENTAL CHAIRPERSON
Stella Melugin Coakley

The time since I formally left the department on December 31, 2003 has flown by at much speed. I could not have imagined (fortunately) how challenging it would be to juggle two ½ time positions. I didn't fully appreciate that each job comes with a full set of meetings and that I'm not able to attend half of each! As it turned out, the Faculty Senate President seems to be very much in demand for all sorts of committees and meetings. The good part is that representing the faculty perspective comes quite naturally for me and only requires that I regularly ground-truth my ideas with the wide variety of faculty that I am representing. One unexpected pleasure has been the opportunity to work frequently with the President of the Associated Students OSU (ASOSU) organization. That individual is at almost all of the venues in which I'm representing the faculty and together we have been able to make progress on several issues of importance to both the faculty and students.

The Associate Dean part of my life is going equally swiftly and my office now looks more like someone is working there although there is yet to be a picture hanging party. I am located in Strand Agricultural Hall and face the M.U. Quad. Equal distance between two coffee shops, I've had to watch how frequently I visit them enroute to the many meetings. The units that I am responsible for include Statistics, Microbiology, Botany and Plant Pathology, and the Branch Stations at Central Oregon and Hermiston. In addition, the Entomology Graduate Program, the Integrated Plant Protection Center, the Molecular and Cellular Graduate Program, and the Center for Gene Research and Biotechnology are also on my list. The three associate deans work closely together and our goal is that units will get the same answers from any of us about policy interpretation and such. In general, I'm enjoying the new tasks and look forward to January 1, 2005 when I will be able to focus on having just one position.

As spring is unfolding, I am finding great comfort in watching my garden bloom. And in watching my granddaughter, now 21 months, grow steadily and swiftly learn to communicate with phrases and actions to fill in where words fail. Moira is an absolute delight for us all and we marvel at the miracle we have in her.

Thank you for the notes and e-mails that have arrived from many of you. Please stay in touch; I am making a transition to a new e-mail address: stella.coakley@oregonstate.edu although the old will continue to work, it is coming loaded with spam to the point that it is time to phase it out. May your spring and summer bring good times for you and yours. May we all remember to celebrate each sunrise and sunset that we are given.

RETIREMENTS

Dr. Donald Armstrong
by Dallice Mills

After 29 years of dedicated instruction, service, and research, **Dr. Donald Armstrong** retired from the Department of Botany Plant Pathology in December of 2002. He continued working on a half-time basis until June of 2003 in his capacity as Associate Chairperson and teaching Plant Physiology, a course that has been dear to him since his arrival on campus. Don earned his undergraduate degree and a Masters Degree in Secondary Education and Biological Science, respectively, from Marshall University in Huntington, WV. He earned his Ph.D. in Botany at the University of Wisconsin, Madison. After postdoctoral study in the Department of Biochemistry at the University of British Columbia in Vancouver, BC, and at the Univ. of Wisconsin, Don joined our Department as an Assistant Professor in 1974. He moved through the ranks becoming Professor of Plant Physiology in 1987. In 1997 he was appointed Associate Chair in the Department with numerous additional responsibilities, including coordinating undergraduate and graduate teaching, preparing various instructional proposals including the Student/Faculty Connection Program, Category II proposals for Botany

Undergraduate Options, and the Preprofessional Teaching Option for Botany undergraduates. Those in the know also are acutely aware that Don has written many, many nomination letters for the awards our faculty, students and staff have received. Most recently, Don has also been a major player in a collaborative research project involving departmental and USDA scientists.

Don was instrumental in offering a course titled Plant Physiology (Bot 331) that has been a mainstay in our department for years, and a service course for undergraduates from numerous other departments. This course is offered twice yearly and includes a lab that he also organized and is heavily committed to. Over the years he was frequently seen moving from student to student in the lab ensuring that they fully understood their assignments and properly interpreted their results. He could also be seen interacting with the teaching assistants for the course and, yes, even washing the dishes! Everyone, but especially those who have taught at that level, appreciated the dedication and commitment Don provided to Bot 331, and his retirement will leave a large pair of shoes to fill. However, to make the job of the new instructors easier, Don made major revisions to the Laboratory Manual in 1996, and in 2000-2001 he wrote and assembled a formal Teaching Assistant Manual to accompany the laboratory manual. This last effort on his part will surely smooth the transition as the baton is passed to the new player(s).

Don's research focused primarily on the identification and characterization of the regulatory mechanisms and molecular sites controlling cytokinin metabolism and function. Cytokinins are plant hormones that are an absolutely essential ingredient in growth medium for growing plant cells to divide by mitosis. His research involved investigations of the regulation of cytokinin metabolism in tissue culture systems derived from various genotypes of *Phaseolus* (bean), with particular emphasis on the regulatory mechanisms controlling the production and activity of the enzyme cytokinin oxidase. This enzyme is widely distributed in plant tissues where it has an important role in controlling cytokinin levels. His research provided crucial information about the physical, catalytic, and regulatory properties of cytokinin, the regulatory mechanisms controlling the levels of cytokinin oxidase activity in *Phaseolus* callus tissues, a biochemical basis of genetically determined variations in the rates of cytokinin degradation in *Phaseolus* callus tissues, and developmental regulation of cytokinin oxidase activity in *Phaseolus*.

Most recently Don has turned his talents toward solving another interesting research problem. Teamed with **Dallice Mills** (also retired) and Mark Azevedo and Gary Banowetz from the United States Department of Agricultural Research Service, National Forage Seed Production Research Center on Campus Way, Don is doing critical experiments aimed at developing the structure of a natural product dubbed GAF (seed Germination Arrest Factor). GAF is a relatively small molecule that was isolated from a pseudomonad. It has the remarkable property of irreversibly arresting the germination of seed from a large number of monocots, including weeds such as annual bluegrass, jointed goatgrass, cheat grass and wild oats, but not maize, barley and wheat, nor any dicots! Don was the lead author of two recent grants that were funded to develop the structure of this molecule. I kid him about being "Seabiscuit" coming down the stretch, unrelenting in his goal of having the structure of GAF within the first year of his retirement.

Don has provided so much of his time to departmental activities that it is difficult to adequately capture his contributions. Whenever stymied by a question involving student advising, one only needed to call him. He annually served as an undergraduate advisor for 10-15 Biology majors but was knowledgeable about requirements for Botany students as well. He served on virtually every standing departmental committee (many times chairing the committee). He also served on numerous faculty search committees, including committees outside our department. He served on Graduate School Committees, as well as committees of the College of Science, the College of Agricultural Sciences and University

Committees, some of which he chaired. Don is known to the faculty as an outstanding writer and a premier editor. Not surprising that he served 10 years as Associate Editor for the *Journal of Plant Growth and Regulation* and five years on the Editorial Board of *Plant Physiology*. The secret is now out. He was the person many of us turned to for a critical review of our writing.

Given that Don is totally immersed in solving the structure of GAF it is likely we will continue to see him in the halls of Cordley for some time. It seems the more things change, the more they appear to be the same. Don is retired, but he will continue working just as he always has, at least for the foreseeable future.

Mary Powelson
by Ken Johnson and Beth Hoinacki

The Sonoran Desert is where you can spy the rare 'Black-capped Gnatcatcher' *(Polioptila nigriceps)* and the 'Rose-throated Becard' *(Pachyramphus aglaiae*). In close pursuit, you might also spy **Mary** and **Bob Powelson**, the snow birders that are now calling the Sonoran Desert their winter home. Thirty-one years of service to OSU has Mary well prepared for full-time pursuit of her hobby. Chasing down the secret lives of rare birds is much like chasing plant pathogens, except that the birds are bigger! Moreover, much like undergraduates, it is rumored that when these birds are found, Mary has the knack of coaxing them to 'sit tight and listen', at least until a bell rings.

With retirement, Mary Powelson leaves behind a distinguished record: numerous teaching awards including the Award of Merit from the National Association of College Teachers of Agriculture, significant advancements in the cultural management of vegetable diseases, outstanding professional service to the potato industry and to plant pathology, and selection as a fellow of the American Phytopathological Society.

Despite Mary's winter migration, her lab continues to stay busy with emphasis these days on a root rot complex of sweet corn. The results of last season are proving out a hypothesis that Mary has championed with regard to soil-borne pathogens of vegetable crops: water management in the first few weeks of the season can greatly influence the severity of symptom expression as the crop matures.

Over her career, Mary served on 80 graduate committees and directed the thesis research of 13 graduate students: Majorie Kirkland, **Kenneth Johnson**, Jeanne Apple, Mark Nelson, Marlys Cappaert, Suzanne Gaudreault, Shaukat Hussain, Kris Crabtree, Meghan Arbogast, Robin Parks, Ingrid Berlanger, Heather Partipilo, and Beth Hoinacki. What do these students remember about Mary? We submit that in addition to excellent mentoring, the very fine dinners at Mary and Bob's house have not been forgotten.

Also remembering Mary's excellence in teaching are the hundreds of undergrads whom she taught in Introductory Plant Pathology. It is not uncommon to see them stopping by in later years to say hi. Indeed, many have gone on to pursue graduate studies in plant sciences, several right here at OSU!

Although Mary leaves behind the halls of Cordley for other pursuits in her role as grandma, birder, hobbyist and friend, she continues to practice what she preached. The take home message: Work hard. Play hard. No whining.

Don Zobel's expansive career
by Mark Wilson

Dr. Donald B. Zobel retired in 2003 after 35 years in the Department of Botany and Plant Pathology at Oregon State University. He began his formal training with a BS from North Carolina State University in 1964. At Duke University, he developed his long-term interests in water relations and plant distributions with an MA in 1966 and a PhD in 1968. That year, he left his familiar mid-Appalachian environs to accept an appointment as Assistant Professor at this Pacific Northwest university and for a chance to expand his ideas to new species and new forests.

The trees of northwestern coasts and mountains were quite suitable for investigations in water relations and other autecological studies. For example, the

intriguing Port-Orford-cedar benefited from Dr. Zobel's attentions. As the world expert on this species and its relatives, he influenced both ecological understanding of plant physiological ecology and the management of this narrow endemic. His status in the field is reflected in the several encyclopedias that carry entries on conifers that come from his pen.

Dr. Zobel's research in later years expanded geographically and topically. The eruption of Mount St. Helens provided a unique opportunity to study the recovery of plants from burial by volcanic debris. He showed that ecophysiology and growth form are responsible for unexpected patterns of recovery.

A Fulbright award to Nepal in 1984-85 and an Indo-American Fellowship to India in 1991 helped cement long-term collaborations with colleagues in Tribhuvan University, Kathmandu, and Kumaun University, Naini Tal. The fruits of these collaborations include publications on the role of water relations in the distribution and behavior of Himalayan trees. He has been on the advisory board of the ecological society of the South Asian Association for Regional Cooperation since 1992. He also wrote an ecology text, "A Practical Manual for Ecology," published in Nepal and widely used there in the training of students.

Dr. Zobel has been advisor or co-advisor to 25 Masters students and six Doctoral students at Oregon State and in Nepal and India. Some of his students have gone on to influential positions in resource management agencies, others have risen to high posts in academia. Dr. Zobel has also had profound impacts on students through his classroom teaching. His Plant Autecology course is legendary in being worth every bit of the work it entailed. Other courses in plant ecology, plant geography, plant water relations, and plant geography bore his trademark dedication to giving students sound science, hands-on experience, and fundamental and thorough understanding.

Recent years have seen Dr. Zobel move in still new professional directions. A series of Honors College courses (which he continues to offer in retirement) and a residency at the Sitka Center for Art and Ecology with his wife Priscilla have explored links between ecological science and history, literature, and art.

SAYING GOODBYE TO BONNIE B. HALL
by Stella M. Coakley

I am sorry to share that we lost our patron artist Bonnie Hall on February 18, 2004 as a result of pancreatic cancer. We will greatly miss her. She was very generous with her artwork and her kindness. Bonnie Hall's artwork has been a mainstay of our department since the early 1990s when she undertook her first prints of the native flowers of Witham Hill. Along the way, she designed the department logo that adorns

our website, appears on the green and white ceramic cup sold by the undergraduates, and appeared on a T-shirt sold by the graduate students. The graduate students also used several of her floral prints for T-shirt designs. Many of the floral prints have appeared in "Posies and Pathogens". Over the years, Bonnie contributed many boxes of notecards and matted prints to be sold by the department as a fundraiser for our group travel fund. As a result, we have an endowment fund that grew primarily from the sale of her artwork and which supports group activities for undergraduate and graduate students. Past expenditures have included the fall graduate student trip to the coast (to welcome new graduate students), undergraduate field trips, pizza parties that brought the graduates and undergraduates together to talk about graduate school, and similar activities.

In honor and memory of Bonnie's contributions, this endowment fund is being named **The Bonnie Hall Student Activity Fund** and its earnings will continue to be used to support group activities. New gifts may be made to this fund through the OSU

Foundation and marked for the Bonnie Hall Fund. The following articles will give you an appreciation for the many contributions that Bonnie made to both the campus and the surrounding communities. Fortunately, her artwork will live on and be enjoyed by future generations.

IN MEMORIUM

(from the Corvallis Gazette-Times February 24, 2004)

Bonnie B. Hall

Nov. 18, 1931 – Feb. 18, 2004

Bonnie B. Hall of Corvallis died Wednesday Feb. 18, at her home of pancreatic cancer. She was 72.

She was born in Portland to Edwin and Alice Tracy Birkemeier. She graduated from Milwaukie High School, and received a bachelor's degree in biology from the University of Oregon and a master's degree from the University of California at Berkeley.

She married James Hall on Sept. 25, 1955 in Milwaukie. They lived in San Diego, Ann Arbor Mich., and Seattle until moving to Corvallis in 1963. For 30 years, she worked as a scientific illustrator in the Department of Entomology at Oregon State University. After retiring in 1993, she began a new career as a screen print artist, portraying the native wildflowers of the Pacific Northwest. She showed her prints at art fairs throughout the Northwest.

She was active with the Corvallis Art Guild and was a member of the Board of the Corvallis Arts Center and Corvallis Fall Festival. She was also a member of the Guild of Natural Science Illustrators and belonged to the Native Plant Society of Oregon and the American Society of Botanical Artists. She was a member of the First Congregational Church, Corvallis.

She was active in civic affairs. An early advocate for community recycling, she served on the Corvallis Community Goals Steering Committee in the 1970's, work that led to the city's first comprehensive plan. She recently received the Patron of the Arts Award at the Celebrate Corvallis event in January.

Survivors include her husband; daughters Carolyn Schneider of Freeland, Wash., and Kate Hall of Iowa City, Iowa; and grandchildren Hunter, David and Joanne.

She was buried in the Pioneer Cemetery on Witham Hill on Feb. 21. A memorial service was held at the First Congregational Church in Corvallis at 11 a.m., Friday, March 19.

Memorial contributions can be made to the Corvallis Arts Center, or Native Plant Society of Oregon (NPSO PO. Box 902, Eugene OR 97440).

From the NPSO, Corvallis Chapter

Bonnie Hall's self-taught skills in illustration gained in completing her master's thesis on the life history of an aquatic fly, enabled her to obtain a full-time job as an illustrator in the University of Michigan Museum, work that supported the family while Jim was in graduate school.

Bonnie and Jim came to Corvallis in 1963, along with their two daughters. She worked as an illustrator for 30 years in the Department of Entomology at Oregon State University. Much of her drawing was done for Professor Jack Lattin, who had been the teaching assistant in her aquatic entomology course at

Berkeley, one of those in which she and Jim met. Bonnie's illustrations included renditions of insects in pen and ink, carbon dust, and scratchboard.

In 1989, Bonnie was asked to illustrate the Oregon swallowtail butterfly, the state insect, for the centennial of the Department of Entomology. Though she designed the silkscreen print, she did not have the technical skill to produce the final prints, having to rely instead on a local artist friend.

This frustration led her to take a serigraph class from Sandy Zimmer at Linn-Benton Community College in 1991. Bonnie was undergoing chemotherapy for her second breast cancer while creating her first serigraph print in the spring of 1992. Her first print was Flags, a deep blue rendition of *Iris tenax*, which she sketched from plants growing in her own backyard. This first print is now sold out. She did another Flags II in 1998, a paler blue rendition of the same species of Iris. If asked about the color of her flowers in a print, she would say, often with tongue in cheek, "Somewhere out there there's one like this". This would be definitely true of irises! She studied the work of many screenprint artists including Ellen Samms Burtner, Sue Allen, Jim Howland, Earl Newman, Elton Bennett, Donna Jepson-Minyard, Charley Harper and linocut artist Henry Evans.

Bonnie created five botanical serigraph prints in her first year of printing, in 1992. In November 1992 she had a mini exhibit at her home and invited friends to view her renditions of native wildflowers. Upon viewing the beautiful botanical serigraphs, her friends wished to purchase the captivating works of art. Thus began the adventure of printmaking for Bonnie. In this same year Bonnie and Jim joined the Native Plant Society of Oregon.

Bonnie became an ardent supporter of the Native Plant Society of Oregon. She was an active member of the Corvallis Chapter. Both Bonnie and Jim came to local meetings and attended many of the annual meetings held around the state. She was a true scientific illustrator of each of her botanical subjects. She first sketched her plants in the field to capture the true natural form of the plant. Then she visited the Oregon State University herbarium to check on the details of her subject and fashion her notes about each species. She attached a lovely explanation on the back of each of her prints that explains the scientific name of the plant, notes on the habitat, and personal notes about the plant. Her native wildflower prints portray the subject with scientific detail, accuracy, and simplicity. One of her artist friends remarked that she almost always captured the "gesture" of the plant, a critique that pleased her. She was very concerned that her subject should be rendered as closely as possible to how it appears in nature.

In addition to helping the Oregon Flora Project Bonnie created two T-shirts designs for fundraising for the Corvallis Chapter. She also created a number of different T-shirts from her prints for the Entomology Department and the Botany and Plant Pathology Department. Bonnie's last print and one of her finest was Brown's Peony, *Paeonia brownii*. In Bonnie's words (text to accompany the print):

There really is a wild peony in the Pacific Northwest, but only just this one species. It is big and showy, and yet easily overlooked. No wonder the intrepid Scottish plant collector David Douglas considered finding the peony one of the most important events of his travels. Just 20 years after Lewis and Clark wintered on the Pacific Coast, Douglas systematically explored some of the same territory alone, gathering specimens for the Horticultural Society of London. He collected the peony in 1826 in the Blue Mountains and honored it appropriately with the name of Robert Brown, a fellow Scot and eminent British botanist of the time.

I first met Brown's peony along the Little Blitzen River on Steens Mountain where striking dried seedpods flanked the trail in late summer. To see foliage and flowers required other places other years. Look for the deeply incised thick green foliage sheltered under sagebrush and pines on the drier eastern side of the Cascade Range and throughout much of the arid Far West.

One measure of her approach to life is contained in this caption that she wrote to accompany her "Spring Beauties", which she entered in a cancer survivor's art exhibit in the mid 1990s, shortly after her second experience with breast cancer:

Coming face to face with Mortality
Focuses on Life as a Circle.

Could acquired skills be brought round
To extol Nature's priceless treasures?

Begin with this humble harbinger of spring
(A mustard, Family Cruciferae, four petals cross-like)
Bearing its ephemeral little cross at the head of
The jubilant procession of Wildflowers to follow.

Try.
Bonnie Hall
So far a Survivor

Bonnie has left us a beautiful legacy of wildflower prints to remind us of our rich natural heritage Donations in memory of Bonnie can be made to the Native Plant Society. It was her wish that these donations go to the Oregon Flora Project.

ABOUT OUR UNDERGRADUATE STUDENTS

Congratulations to the following students who received a B.S. in Botany in 2003:
Miko Nadel, Jeremy Welty, Joseph Gilbuena, Kellie Chambers, Brianne Davidson, Anthony Mengucci, Jonathan Reed, Andrew Myrtue, John Schenk, Aaron Trippe, Cristel Weitl, Jay Well, Carrie Lewis, Heidi Suna, Brian Fox, Tracy Pope, Heather Carpenter, Desiree Johnson, Jennifer Dutton, Stephani Williams, and Elizabeth Wood.
Welcome back to Carrie Lewis who is now a graduate student with Jennifer Parke, Desiree Johnson who is a graduate student with Joseph Spatafora, and to Jonathan Reed who is working in Valerian Dolja's lab.

THE UNDERGRADUATE BOTANY CLUB
by Bailey Edgley

The Botany Club is having a great year so far. We have been busy. We managed a paid parking lot during a couple football games again this year. It was a lot of fun and a great way to fund our club. We also obtained funds through a generous donation from the Roth Forest Committee.

At the beginning of every school year, there is the Beaver Dam Community Jam where representatives from OSU clubs and organizations have booths in the quad. We borrowed some posters and displays from Natural History Discovery Days materials and gave away divisions of **Dr. Halse's** spider plant. We had a great turnout for staffing the booth and recruited new members. This fall several of us were taking Mycology or Aquatic Botany, both of which have collection assignments. One Saturday, we went on a collecting trip to Newport. The rain was horizontal and it was so windy we could not physically walk down to the beach at Seal Rock State Park. We collected several mushrooms in the wooded area between the parking lot and the beach trail.

Winter term was busy too; we went to Willamette University in Salem to see the Helen Gilkey exhibit. A lot of us are familiar with her collections at the Herbarium, but did not know she did botanical illustration. On several of her pieces, we could see her pen strokes. Her detail with watercolors was amazing. They had a display of her tools and color swatches.

We watched several of David Attenborough's Private Life of Plants videos at

an evening dubbed "plant geek out night". Our secretary and web master, Kathy Van Wormer, volunteered her house and projector. We saw some amazing plants and the non-Botanists were impressed too.

The Botany Club loves community outreach projects, especially Natural History Discovery Days, formerly known as Museum Days. We had a great turnout of help from undergrad and grad students. Our moldy fruit and microscopes, and our fruit or vegetable table were a smashing success. We can't wait to do it again in the spring.

Every year, we go on a Spring Break trip. This year, we went to Yosemite National Park. After fourteen hours, two vans and nine people set up camp in the dark. When we woke up the next morning, everyone jumped because we had no idea that the rocks would be so tall or so close. We lucked out on weather; it was warm and sunny for the time of year. We went on some awesome hikes to Mirror Lake, Vernal Falls and Nevada Falls. We joked about climbing Half Dome, but decided to save that for the next trip. Upon returning, we were welcomed back to Corvallis by pouring rain.

This spring term, we have some exciting events planned. We will go on a Memorial Day weekend trip, either to Fossil or to the Siskiyous. We are going to have a booth at the Spring Garden Festival again and there is going to be a Botany Club and Chemistry Club softball team. We have had a lot of fun this year and spring term will go by fast. We have elections in June and although the club is losing a lot of graduating members, we think it will attract many new members next year.

ABOUT OUR GRADUATE STUDENTS
by John Syring

The 2003-04 academic year started off for us graduate students with our annual trip to the beach house, courtesy of Stella Coakley. The moon over Highway 101, a late night dip in the ocean, and a crab feast (we caught 11…okay we caught 5) were some of the highlights. This trip was to welcome our new students into the department and to build and strengthen the bonds between all students…new and old. We were delighted to receive nine new students this fall into BPP.

This years Graduate Student Association representatives includes **John Syring** (President), **Nate Miller** (Vice President/ Videographer), **Susan Crow** (Treasurer), and **Brian Knauss** (Marketing Manager). Together we organized the production and sales of pint glasses for the support of the GSA. The design was *Humulus lupulus* (hops) drawn by **Nate Miller** (Ocamb). Creative marketing and high-pressure sales resulted in a sell-out. Along with monies from our involvement in Museum days (organized by **Kristen Skinner** (Ciuffetti)) we raised $900 for the graduate student travel funds!

Last year these GSA funds were used in part to award travel grants to **Ioannis Tzanetakis** (Martin), **Kentaro Hosako** (Spatafora), **Anne Halgren** (Martin), **Kwang Chul Oh** (Lomax), **Rachael Andrie** (Ciuffetti), and **Kirsten Arthur** (Fowler). This spring we plan on offering a similar number of awards.

We are honored to announce the graduations of **Ioannis Tzanetakis** (PhD), **John Bienapfl** (MS; Ocamb), **Djibo Zanzot** (MS; Parke), **Jose Henriquez** (PhD; Sugar), **Kate Worster** (MS; Mundt), **Brie-Anne McKernan** (MS; Meinke), and **Steven Bekedam** (MS; Pyke). Thanks for giving the rest of us hope!

Among those winning awards this year were **Rachael Andrie** and **Paul Severns** (Wilson/Liston) who won the 2003 Oregon Sports Lottery Scholarship, **Kirstin Arthur** (MCB**)** and **Ioannis Tzanetakis** (MCB) who were awared the Anita Summers Travel Award, **Brian Knaus** (Liston/Cronn) who received the 2004 Hardman Award for Native Plant Research, **Annie Halgren** who received the Virology Travel Award, **Steven Meyers** (Genetics) who received the 2004 Moldenke Fund for Plant Systematics, and **Beth Lawrence** (Kaye) who received the 2004 Bonnie C. Templeton Award for Plant Systematics. Congratulations to these fine folks.

Among those attending conferences were **Desiree Johnson**, **Kentaro Hosaka**, and **Gi-Ho Sung**, members of the Spatafora lab, who went to Knoxville for the Deep Hyphae Mycological Conference; **Erin Martin** and **Emily Holt**, both in the McCune lab, traveled to Ellensburg, WA to present at the Northwest Science Conference; and **Annie Halgren** presented at both the APS meeting in

Charlotte, NC and the Small Fruit Pest and Disease Conference in Oxnard, CA.

In Early March we hosted the prospective students for Fall 2004. Nine students came to visit in total and the current graduate students gave them a tour of campus, took them out to a fine local dinner, hosted a wine and poster session, and took them out to the Oregon Coast for a day of soaking up the unexpectedly nice weather. It was a great class of recruits and we hope to see many of them next year.

On the sports side of things, the BPP basketball team (0-1 in PacTen play) is still playing on a weekly basis at McAlexander field house; team captain **Nate Miller** has promised a strong 2004/05 showing. This spring **Beth Lawrence** is organizing BPP intramural soccer, time to get outdoors and enjoy the weather. All are welcome, please come support BPP sports!

Finally, this spring we are planning an evening barbeque (date to be announced) at Avery Park. We will be grilling, recounting lab-tales, and kicking the soccer ball around. Please make sure to join us before everyone goes their separate ways for the field season…

RECENT THESIS TITLES

Steven Gisler (M.S. with Robert Meinke) "Reproductive isolation and interspecific hybridization in the threatened species, *Sidalcea nelsoniana*."

Kristen Harrison (M.S. with David Pyke) "Litter decay processes and soil Nitrogen availability in native Cheatgrass-dominated arid rangelands."

Jose Henriquez (Ph.D. with David Sugar and Robert Spotts) "Studies on the Etiology and Epidemiology of Bulls Eye Rot of pears."

Elizabeth Hoinacki (Ph.D. with Mary Powelson) "Sweet corn decline syndrome in Oregon's Willamette Valley."

Brianna Lindh (Ph.D. with Pat Muir) "Understory herb and shrub responses to root trenching, pre-commercial thinning, and canopy closure in Douglas-fir forests of the western Cascades, Oregon."

Carolyn Menke (M.S. with Pat Muir) "Relationships of exotic species and wildlife to the threatened plant *Silene spaldingii*."

Kimberly Roberts (M.S. with Bob Meinke) "Conservation biology of *Perideridia erythrorhiza* (Apiaceae): experimental reintroduction and life history.

Todd Temple (M.S. with Ken Johnson) "Effect of Iron on biological control of fire blight by *Pseudomonas fluorescens* A 506."

OUR ADMINISTRATIVE SUPPORT STAFF
by Misty Labahn

We have had a few changes in the administrative support staff since the last issue. Most recently, **April Dring** was hired as our new receptionist. Among the many duties of greeting and helping anyone who walks in the front office, April also handles the student payroll. **Edith Birky** has been promoted to personnel specialist and is still handling travel arrangements and processing travel reimbursements. **Robin Carda** left us in August to pursue a new challenge in the Administration building. Once again **Itsue Pfund** has been promoted to her own office in Cordley 2066A. **Blaine Baker** has had a few changes in his job duties and is now purchasing and paying bills. **Misty Labahn** is still learning her job with the help of Itsue. Last but not least **Dianne** is still here with a smile….

FROM THE ELECTRON MICROSCOPE FACILITY
By Al Soeldner

On an annual cycle faculty receive a request from the University to up-date a document intended to serve as a promotional and justification-of-service piece our administrators can refer to when they are speaking with government officials or institutional stakeholders. Among the informational items this document contains are our assessments of the potential economic and social consequences of our work and our evaluations about those parts of Oregon, the United States, or the world that are, or may be, affected by the outcomes of our work.

As part of my own assessments supplied to this document I reply that economic and

social benefits from services of the Electron Microscope Facility are realized indirectly through OSU research and Extension, outside companies, and government agencies that use the Facility. I then point out that given that a few, or thousands, of acres of an agriculturally important crop, a single chicken or a flock of poultry (e.g. the recent outbreak of the poultry flu virus), a sick cow or a whole herd of dairy or meat animals, a single package or truckloads of contaminated food product, a failed material or a malfunctioning production process can be worth from several thousand to several million dollars, the contributions of the EM Facility's diagnostic imaging and analytical services are of incalculable value, and that in addition, the Facility also plays a vital role in the development of new products and processes that bring substantial profits to many (hopefully, Oregon) businesses.

An unfolding event taking place with the Facility dramatically supports these claims. Nearly five years ago an industrial collaborator brought in small samples of a medical product being pioneered by an Oregon business. **Dr. Michael Nesson** prepared slices of the samples and did some microscopy and x-ray energy spectrometry related to the product's structure. The time devoted to the project was minimal, about four hours, and the client's invoice for our services was equally modest, even at the rates charged to off-campus recipients of our work. Once completed, the project faded from our attention.

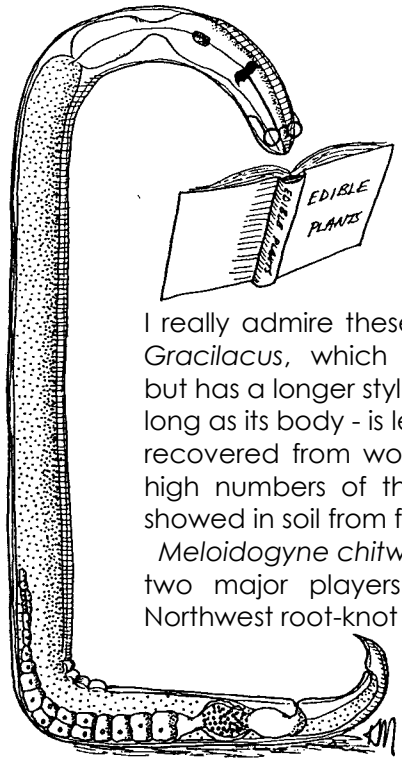
Now, several years later, Dr. Nesson has recently been summoned to provide documentation and testimony regarding the work done in the Facility on this product. It seems an international producer of medical materials, once associated with our Facility's client, has marketed a version of the product that appears to violate patents. The pending litigation, not surprisingly, involves significant legal issues as well as appreciable money. The case has enough importance that Oregon Justice Department personnel are contributing a review of the role and involvement of Dr. Nesson and the Facility in the discovery and possible litigative processes.

At the time of this contribution the legal process is in its early stages. Nevertheless, the story clearly reinforces the assessments that the Facility has useful roles in the development of products and processes that bring benefits to the world, and that contributions of the Facility's imaging and analytical services in fact do have demonstrable, far-reaching economic and social value.

FROM THE NEMATODE TESTING SERVICE
The Year 2003 in Nematodes
by Kathy Merrifield

The 942 soil and plant samples received in the Nematode Testing Service during 2003 kept Faculty Research Assistant **Nadine Wade** busy coordinating lab work for our incomparable work-study students, **Brye Bishop** and **Rosa Wampler**. Nadine also extracted many samples herself. All three perform miracles on a routine basis. I'm continually amazed at both the amount and the quality of work that Nadine, Brye, and Rosa pump out - and this is only PART of Nadine's job. She's also the Lab Manager for Professor **Russell E. Ingham's** nematology research program and handles the more challenging counting tasks, such as differentiating between live and dead worms. As always, the nematode year was thrilling. Golf course samples often head the list of interesting specimens, and they performed again this year with high numbers of spiral, root-knot, ring, and stubby-root nematodes (that is, *Helicotylenchus* sp., *Meloidogyne naasi, Mesocriconema* sp., and *Paratrichodorus allius*) piercing and sucking their way through millions of tiny *Poa* and *Agrostis* plants.

Lesion nematodes were well represented in many crops. Among the highlights were high numbers of *Pratylenchus thornei* on peppermint and *P. crenatus* on both orchard grass and apples. Pin nematodes (*Paratylenchus*; the one in our area probably a probably undescribed species) are often the companions of lesion nematodes. Up to 17,000 *Paratylenchus* sp. per 100 g soil showed up in one peppermint sample. Wow - talk about laboring in crowded conditions....



I really admire these heroically social worms. *Gracilacus*, which resembles *Paratylenchus* but has a longer stylet - up to nearly half as long as its body - is less common and is usually recovered from woody plants. Accordingly, high numbers of these delicate little worms showed in soil from filberts.

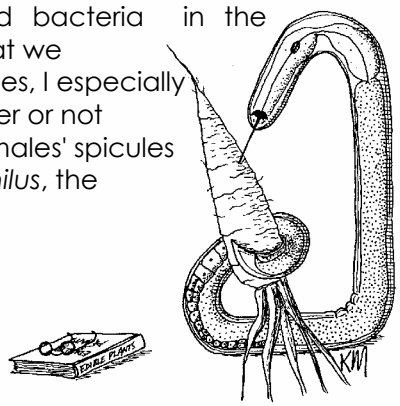
Meloidogyne chitwoodi and *M. hapla*, the two major players in the cast of Pacific Northwest root-knot nematodes, starred in several dramas, mostly involving potatoes in supporting roles. Other good characters exist for separation of juveniles of these two species besides the old standard, the configuration of the hypodermis in the tail region. I've been concentrating on comparing stylet knob shape, lip shape, and various body measurements between the two in order to be on the lookout for the unexpected rather than assuming that only these two plus *M. naasi* (mostly on grasses) are the only species in our area. *Meloidogyne arenaria* and perhaps *M. javanica* wormed their way into the lab this year, again via potatoes, providing yet more invaluable fodder for comparison. The very same potatoes hosted sheath nematodes - *Hemicycliophora* sp. - which I always love to see. As if that weren't enough, even more sheath nematodes were recovered from soil around apples. Features of this genus are so extremely cool at 630X, the thrill is nearly unimaginable.

Wine grapes provided copious supplies of large worms for our enjoyment. (Actually we do try to save all these examples for use in lab classes, or just for when someone develops a sudden need for nematodes. It happens all the time.) Although *Xiphinema americanum*, the most common dagger nematode in the area, paved the bottom of the counting dish in several samples, many other grape samples were relatively free of nematode parasites. Don't worry - the wine still tastes great, from what I can figure out through objective replicated sampling.

A nice little population of sugarbeet cyst nematode (*Heterodera schachtii*) recovered from turnip soil samples was a pleasant diversion. Friendly cysts from an experimental sugarbeet received as an example for Professor Russ Ingham's classes have become successful cultures on table beet and turnip in our greenhouse collection.

Garlic cloves were evaluated for the presence of *Ditylenchus*, the stem-and-bulb nematode and source of the famous Nematode Wool. None were recovered, a great disappointment since I had planned on some serious knitting. Nematodes in our samples get cold during refrigeration. Nematode wool suits would help alleviate their discomfort, but not this year, I guess. However, the garlic exercise was a perfect lesson on the effect of garlic mites, teeny weeny arthropods associated with a nice little bulb rot assemblage in which fungi and bacteria support populations of *Aphelenchus* and *Cephalobus*.

Always intriguing are populations of *Aphelenchoides* and *Ditylenchus* recovered in root extractions, as some were from peppermint. So far, these taxa in roots have not been associated with disease symptoms, even though they are suspected of feeding on root hairs. I just don't see how sucking on a root hair is any different than sucking on any other part of a root. Of course, nematode damage depends on what is injected into the root as well as what is removed, so maybe these probable root-ivores are suckers only and not injectors. Speaking of unusual things recovered from plant parts, conifer xylem evaluated for the presence of pinewood nematode (*Bursaphelenchus xylophilus*) has yielded fungivores (various aphelenchids) and bacteriovores (mostly cephalobids) supported by fungi and bacteria in the vascular system. Now that we have exhaustive references, I especially enjoy determining whether or not the aphelenchids' adult males' spicules fit the criteria for *B. xylophilus*, the pinewood nematode.



So far, none have. In writing the yet-unfinished 2003 Nematode Testing Service Annual Report, I haven't decided whether or not this scintillating document will contain coupons. In previous years, an offer for a free coffee drink of the claimant's choice at The Beanery or a free slice of pizza at the local Monroe Street pizza parlor, if detected before June 30, have been included as incentives to actually look through all the pages. I don't know what potential readers' problem is. I can't imagine anything more exciting that reading about the year in nematodes. But then, my imagination often needs help.

FROM THE PLANT CLINIC
by Melodie Putnam

Not having experienced nearly the excitement **Kathy Merrifield** has with her nematodes, I'll just limit my comments to a few odd bits of news regarding the Plant Clinic.

The Clinic has been flourishing lately, thanks in part to the addition of **Lynn Royce**. Lynn is the person who, for the past eight years, has been providing identification of insects and mites (and spiders, snails, slugs, and miscellaneous unknown creatures/items discovered in the home, yard, or hay bale) for the Entomology Department. Their demise was our gain, when Lynn joined the Botany and Plant Pathology Department last year. Lynn's particular expertise is related to mites, especially those that attack bees. She also has considerable expertise in, knowledge of, and love for honeybees.

We tried once before to merge the Insect ID service with the Plant Clinic, but the timing was off, so we are very pleased that Lynn is now with us. We currently offer "one stop shopping" (so to speak) for solving plant related problems. Lynn also brings a wider perspective, working with the veterinary and medical professions, providing identifications of ticks and other parasites found on animals and people. Lynn makes around 600-700 identifications per year, answers just about the same number of inquiries via the phone, plus does Master Gardener training, gives informational talks to various groups, and generally sees to state wide extended education regarding identification, life history, and management of problem arthropods and other invertebrates.

In other news, the Plant Clinic has expanded its responsibilities to include providing diagnostic support for Washington, Idaho, and Alaska, in addition to Oregon, as part of the newly established National Plant Diagnostic Network (see related article below). This was possible due to an infusion of funds to the Clinic from the Cooperative State Research, Education and Extension Service. The funds are being used to establish (and at least partially staff) a molecular diagnostics lab for detection of targeted organisms of national and regional interest (for more about the NPDN, visit the web page at http://npdn.ppath.cornell.edu/Mission.htm).

So things have been hopping lately. Sadly, we haven't had the pleasure of examining anal rings of female nematodes, but we do manage to carry on.

OSU PLANT CLINIC WILL HELP COMBAT BIOTERRORISM
From OSU News and Communication Services 8/27/03
by Peg Herring

The plant disease detectives at Oregon State University will soon be sleuthing for homeland security. OSU's Plant Clinic has been designated as part of a new nationwide network to safeguard America's food supply.

The clinic will provide rapid identification of specific plant pathogens, insects and weeds that may pose significant threats to western agriculture. "Right now, in the United States, our food supply is plentiful, inexpensive and safe," said **Melodie Putnam**, chief diagnostician at OSU's Plant Clinic. "But there is a lot to do to keep it that way Last year, as part of the response to events of Sept. 11, 2001, the U.S. Department of Agriculture focused efforts on keeping America's agricultural production safe from bioterrorist attack. The result has been to connect diagnostic labs across the nation into a network for surveillance and rapid

detection of pests and diseases that may be intentionally introduced into food crops.

OSU's Plant Clinic is one of three resource laboratories designated for the western region. Western agriculture provides the United States with much of its food, including large-scale commodity crops such as wheat and potatoes and hundreds of specialty crops from pineapples to hazelnuts. It is also a region with large population centers and big international ports where food is shipped around the world.

"If we had to create this level of expertise from scratch, we couldn't afford the time or the cost," said Putnam. "This new effort to combat bioterrorism is based on knowledge and experience that has been building in this lab for the last 50 years."

Since 1954, OSU's Plant Clinic has offered diagnostic services to growers and gardeners. Over the years, people have sent in tens of thousands of samples in the form of shriveled vegetables, black-mottled twigs or entire trees. The lab's detectives have diagnosed problems, prescribed remedies and recorded trends in plant pest and disease outbreaks.

"In the 10 years that I've been at the lab, I've examined about 15,000 samples and identified over 350 taxa of plant disease pathogens," said Putnam.

Normally, when she receives a sample of an infected plant, Putnam says she is looking for anything and everything. Traditional methods of plant disease detective work have given her a broad understanding of the pathogens that sometimes occur in the fields and orchards of Oregon.

Now with new tools in her lab, Putnam will also look for a few very specific pathogens, those that do not occur naturally and can cause devastating diseases to food crops. These may be foreign diseases for which the main food crops have no immunity or particularly virulent strains that can spread rapidly through the food supply. For this detective work, Putnam will help develop molecular tests to rapidly identify some of the most potentially destructive plant pathogens. She will also work with growers to help them be alert to particular symptoms they might see in the field or orchard.

"The new aspect of our work is the surveillance of deliberately introduced epidemics and a reporting system that is integrated nationally for rapid response," said Putnam.

Awards and Promotions

Dr. Daniel J. Arp
OSU Distinguished Professor
Dr. Christopher Mundt
Fellow of the American Association for the Advancement of Science
Dr. Dan Arp
F.A. Gilfillan Award for Distinguished Scholarship in Science
Dr. Joseph Spatafora
Fred Horne Award for Excellence in Teaching Science
Dr. John Fowler
Loyd Carter Award for Excellence in Graduate Teaching
Dr. Lynda Ciuffetti
Elizabeth P. Ritchie Distinguished Professor Award
Dr. Jeffrey K. Stone
Fellow of the Mycological Society of America
Dr. Richard Halse, Dr. Jay Pscheidt and Dr. Lynn Royce
James and Mildred Oldfield/E.R. Jackman Team Award for Natural History Discovery Days (Museum Days)
Edith Birky
College of Agricultural Sciences Classified Employee Award

Dr. Aaron Liston was promoted to **Professor** effective July 2003.

Dr. William Pfender was promoted to **Professor (Courtesy)** effective July 2003.

About Our Alumni
by Ken Chambers

Dr. Ronald J. Tyrl, Ph.D. 1970 (Systematics), was awarded a 2004 Medal for Excellence by the Oklahoma Foundation for Excellence, in the category of College and University Teaching. Ron will join other award winners at a reception at the Tulsa Convention Center on May 22, 2004, hosted by The Honorable

David L. Boren, Chairman of the Foundation. Ron is a professor of botany at Oklahoma State University, Stillwater. His interests are in the flora of Oklahoma, especially the grasses, and in poisonous plants. He recently co-authored a book on the poisonous plants of North America.

THANKS are due to **Sue Jepson** for collecting the information layout, editing and handling the mailing list, **Tom Allen** for the logo, and **Ken Chambers** for the name.

OREGON STATE UNIVERSITY

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