Department of Plant Pathology
~~" The Pennsylvania State University "~~
2005 Annual Newsletter

Greetings from Happy Valley

And it truly is a happy valley once more with the Orange Bowl win behind us. The skies kind of cleared and we can see blue and white again. As we reflect on the events of 2005, we hope to give you a glimpse of what has been happening in the department.

As most of you know by now, Dr. Leonard Francl, the Head of the department, was diagnosed with cancer and sadly passed away on July 26, 2005. Colleagues, family, and friends remembered and honored Len at a memorial service in early August. An endowment in his name has been established as a lasting tribute to him and his contributions to our department.

During Len's illness it became apparent that he needed an assistant, and after a phone call from the Dean's Office, I became that person. Following Len's passing, the Department "spoke" to the Dean via letters, and upon returning home from the APS meetings in Austin, I was asked by the Dean if I would be willing to assume the duties on a permanent basis.

I am grateful for the overwhelming support and encouragement that I have received during the transition in leadership. It made it easier to accept the responsibility of leadership for the department knowing all of the support that I have.

The College of Ag Sciences has collectively agreed to take a systems approach that is reflected in our strategic plans. The department is involved with new initiatives, including the Environmental and Natural Resources Institute and the college-wide Plant Science Study Group, which is lead by Dave Geiser. What changes their report may have on our department remain to be seen, but we are hopeful that their recommendations will bring the plant science departments closer together.

At the university level, there continue to be funding issues. Despite periodic budget cutbacks, however, we have survived as a vibrant, healthy department because of shared governance, long-term planning, and the commitment to the success of faculty.

It is a privilege to be department head and to come to work each day to work with the excellent quality of faculty, staff, postdocs, and students of this department.

We hope that you enjoy the newsletter and urge you to keep in touch!

With my best wishes,
Barb Christ

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In Memory

Leonard J. Francl, professor and head of the department, died Tuesday, July 26, 2005, in Port Matilda. He was suffering from pancreatic cancer. With the support of Centre Crossing Hospice, Leonard was able to remain at home with his family during his final weeks. Leonard was born October 14, 1949, in Chicago, Illinois, to Florence Meyer and Laddie J. Francl. He attended the University of Arizona in Tucson, where he earned his B.S. with high distinction (1974) and M.S. (1975) in agriculture. He was instructor of agriculture at Southeast Missouri State University in Cape Girardeau, Missouri, from 1976 to 1981. In 1985 he earned his Ph.D. in Plant Pathology at the University of Missouri. He did post-doctoral work at The Ohio State University in Wooster, Ohio (1985-1988) and worked as a research plant pathologist at the USDA Agricultural Research Service in Beltsville, MD (1988-1990). Leonard was a professor at North Dakota State University in Fargo, ND (1990-2001), where he specialized in the epidemiology of wheat diseases and developed the NDSU Small Grains Disease Forecasting System. Leonard was named head of the Plant Pathology Department at Penn State in July 2002. He is survived by his wife, Camille; children Luke, Ember, and Alyssa, and siblings Fred, Tom, Mary, and Anne.

Harold A. Gummo passed away on September 8, 2005. Harold worked as a Biological Technician at the Mushroom Research Center in the Department of Plant Pathology from 1966 until his retirement in 1993. Harold is survived by his wife, Barbara, a son, a daughter, two grandchildren, and a brother and sister. Harold was 65.

Mildred H. Jodon died November 16, 2005, in State College. Millie was a Navy veteran who served as an R.N. at the Naval Hospital at Great Lakes, Illinois, prior to coming to Penn State. Millie earned her B.S. degree and completed an M.S. in Plant Pathology from Penn State, and served as Research Assistant in our department for 18 years, until her retirement in 1985. Millie is survived by her son, Jason, and two sisters.

~~"Dr. James Tammen Honored"~~

Congratulations to **Jim Tammen,** who has been named Professor Emeritus of Plant Pathology at Penn State. Upon the recommendation and urging of his colleagues in the department and college, the University granted him Emeritus status, even though he did not retire from Penn State, in recognition of his distinguished career and his continued long-term involvement in the Department of Plant Pathology. Jim's association with Penn State began in 1956, when he joined the Botany and Plant Pathology Department. In 1963 he became the first head of the newly constituted Plant Pathology Department, and over the ensuing 13 years he provided visionary leadership that elevated the department to national recognition. Jim served as an adjunct professor in the department for the past 17 years.

Jim Tammen with fellow Emeritus Professor T. A. Toussoun, 2005

~~"Faculty News"~~

John Ayers directs the Penn State Pesticide Education Program, which helps ensure proper use of pesticides on the farm and in urban settings. **Janis Marshall**, **Sharon Gripp**, **Kerry Richards**, **Julie Watson**, **Rick Johnson**, **Eric Lorenz**, and **Jimi Gingerich** assist John in this effort. John also serves as codirector of the Northeastern Pest Management Center, a joint effort of Penn State and Cornell Universities. John was named 2006 Member of the Year by the Pennsylvania Agronomic Education Society.

Paul Backman has active programs in biological control and international IPM. The USDA at Fort Detrick MD, has funded a project on biological control of Canada Thistle for the past three years that supported the M.S. program of **Anissa Demers**. A second M.S. student, **Rachel Melnick**, researches cocoa endophytes and disease control that is supported by USDA's international programs group. Recent funding from AID supports sustainable agriculture systems in cacao and plantain in Ecuador, as well as biological control systems in the Andean highlands. **Ermita Hernandez** has begun an M.S. program on biointensive IPM programs for

vegetables that will utilize combinations of disease resistance-inducing micro-organisms and fertilizers that activate plant defense products to reduce dependence on pesticides. Similarly, Anissa Demers (now a Ph.D. student) is integrating multiple strategies to assist PA farmers in producing organic apples.

Biocontrol Lab: Ermita Hernandez, Anissa Demers, Paul Backman, Rachel Melnick

David Beyer **(Ph.D. '96)** has extension and research responsibilities for the mushroom community. Much of his efforts are directed towards the challenges of composting odors, mushroom nutrition and diseases. In the lab and at the Mushroom Research Center, he is assisted by **Vija Wilkinson** and newly recruited **Kimberly Paley**. **Aaron Brown** has become his M.S. graduate student this past fall and will be working in the area of spawn culture maintenance. **John Pecchia,** a 2000 graduate under Drs. **Paul Wuest** and Beyer has returned as Project Associate, working and tutoring under **Tom Rhodes** at the Mushroom Test-Demonstration Facility.

Barbara Christ continues to serve APS as Intermediate Councilor–at-large in her second year of a three-year term on Council. After the 2006 meetings in Quebec she will serve as senior councilor-at-large. In January, Barb traveled with the grape lab to attend the 4th International Workshop on Grapevine Trunk Diseases and the South African Plant Pathology Society meetings in South Africa. While in South Africa contacts were made with scientists that were hosts during Barb's 1996 trip to SA. In August, Barb was invited by the Dean of the College of Life Sciences, Inner Mongolia University, to present several seminars in China. **Ruofang Zhang** (**Ph.D. '04**), former student of Barb's, arranged this trip. The potato project continues to perform potato variety trials and co-release new potato varieties with the aid of **Mike Peck** as the variety specialist. Other areas of focus for the potato project are developing germplasm with high levels of resistance to one of several diseases, early and late blight, common and powdery scab, and Fusarium dry rot. The third focus is on understanding powdery scab of potatoes. **Chris Burkhart** finished his thesis work on Fusarium dry rot resistance in potato during the summer and graduated in December. After graduation, he joined his family's agrichemical business as a Crop Consultant. **Damitha Wickramasinghe** continues on the potato program and is conducting research on molecular markers associated with late blight resistance. She hopes to finish in the near future. **Xinshun Qu** continued his postdoc and contributed several publications on powdery scab. **Sara May** continues to split her time between a few hours per week in the Plant Disease Clinic and the remainder of her time on the potato program, taking on more leadership on the project as Barb spends her time as department head. **Leslie Long**, who works for both the potato project and the grape project, fills in the gaps for both the lab and field aspects of the potato program. **Chad Moore** continues to assist Mike Peck, both of whom provide field support for the potato program. Mike has increased his leadership role on the field aspects of the potato program. Joining the potato program in 2005 were **Nadav Nitzan,** who is

conducting research on the epidemiology of powdery scab, and **Jose Santa Cruz Hildalgo,** who will focus on early blight resistance.

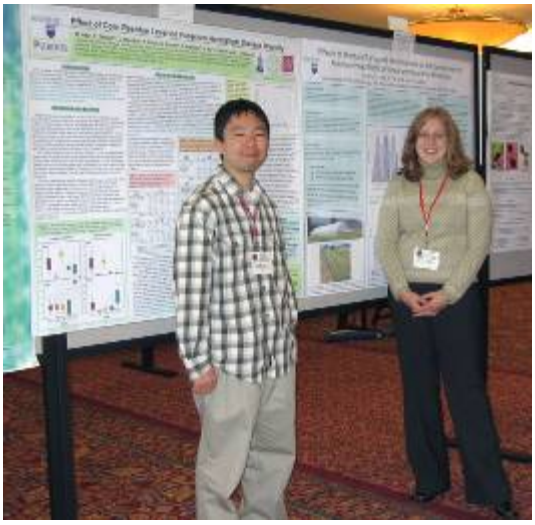
Herb Cole (**Ph.D. '57**) retired on January 31, 2005. Herb received his B.S., M.S., and Ph.D. degrees from Penn State and joined the Department of Plant Pathology as Research Assistant in 1954. Over the next 50+ years he devoted his career to Penn State and to the agricultural industries of the Commonwealth of Pennsylvania. As a faculty member in the Department of Plant Pathology, he was involved in the teaching, research, and extension missions of the University. Herb served in leadership roles as Head of the Department of Plant Pathology and Chair of the University Faculty Senate. From 1999-2005 he served as Assistant to the Director of Cooperative Extension. Family, friends, and colleagues recognized Herb at a retirement celebration on April 7, 2005. He was presented with a Nittany Lion statue, and all gifts in his honor were designated for the Herbert Cole, Jr. Program Support Fund for Cooperative Extension, which Herb established in the College. Herb is now Professor Emeritus of Agricultural Sciences and continues to be an active member of the Department and College.

Don Davis **(Ph.D. '70)** contributes his expertise in forest and shade tree pathology and teaches a popular undergraduate course (Diseases of Forest and Shade Trees) and a graduate course (Plant Disease Diagnosis) with John Peplinski. He currently mentors **Mark Schall** and **Lee Kline**, M.S. candidates.

Mark Schall (on right) at Armillaria Workshop

Erick De Wolf is now in his fifth year on the faculty and continues to develop extension and research programs for field and forage crops here in Pennsylvania. Erick is a leader in a multi-state effort to develop disease forecasting models for Fusarium head blight of wheat. The models are delivered to 23 states east of the Rocky Mountains via an interface that was developed in cooperation with cooperators in the Penn State Institutes for the Environment and the Pennsylvania State Climate Office. Interested parties can see the models at www.wheatscab.psu.edu. Erick now works closely with Scott Isard and together they advise **Nick Dufault**, **Justin Dillon**, **Jeremy Zidek,** and **Maria Velez-Climent** as they work on soybean rust epidemiology.

The Fusarium head blight team includes **Julio Molineros**, and newcomers **Mizuho Nita** and **Katelyn Tilley**. Julio is now in his fourth year as a Ph.D. student and has made great progress in developing the disease prediction models for Fusarium head blight. We anticipate that Julio will complete his degree in December of this year. Mizuho is a postdoc supporting many aspects of the *Fusarium* epidemiology program here at Penn State. Katelyn began her Masters degree this past year, and her work on Fusarium head blight mycotoxin accumulation is co-advised by Drs. De Wolf and Kuldau.



Mizuho Nita and Katelyn Tilley

Dave Geiser has a number of new faces in his lab, with postdocs **Jaime Blair** and **Michele Mansfield** joining projects on *Phytophthora* and *Fusarium*, and **Jeniffer Yanez** working on characterizing spores collected from air samples. Dave and his wife, Sarah, also celebrated the birth of their son, **William Dashiell Geiser,** in November. Before the baby came Dave managed to give seminars at the University of Wisconsin and at the University of Georgia Genetics Department Giles Birthday Symposium, a keynote address at the Mid-Atlantic States Mycology Conference at NC State, and participated in the Fusarium Laboratory Workshop at Kansas State. Fusarium Research Center Research Support Technologist **Jean Juba** is now fully immersed in the molecular realm, generating and analyzing DNA sequences for identifying *Fusarium* cultures.

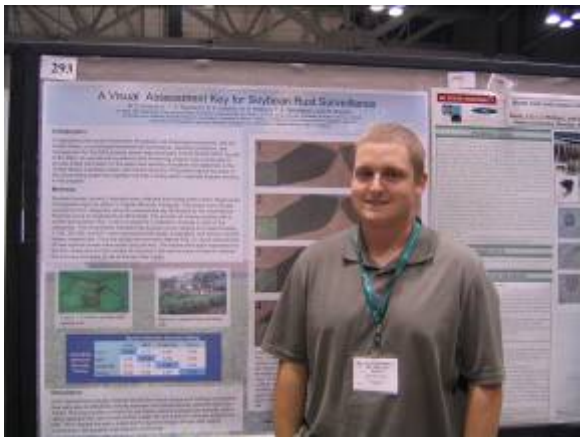
Fred Gildow currently is involved in three program areas involving aphid transmission of Luteoviruses, Plum Pox Potyvirus, and Cucumber Mosaic Virus. The luteovirus project, in collaboration with Diana Cox-Foster (Entomology) and adjunct professor **Stewart Gray** (Cornell University), focuses on the identification of virus-binding proteins in aphids that determine ability of aphids to transmit viruses. Research in collaboration with Bill Schneider and colleagues at the USDA-ARS Biocontainment Laboratory at Frederick, MD, is focused on characterization and microevolution of PPV isolates newly invading the U.S. A study in collaboration with Dr. Shelby Fleischer (Entomology) focuses on recent epidemics of CMV in commercial snap bean fields associated with the newly invasive soybean aphid. **Bill Sackett** continues to provide technical support in electron microscopy and in maintaining a collection of 12 aphid species used for virus transmission research. He also assists in teaching PPATH 405, Microbe-Plant Interactions in Plant Disease and Biological Control. During the last academic year, **Chris Wallis** completed his M.S. thesis on the microevolution of PPV. This year **Kara Maraden** graduated with a Masters degree following two years research on electron microscopy of PPV. Postdoc **Xiaolong Yang**, who had been working the past two years on characterizing aphid proteins associated with vector-specificity, accepted a position with the USDA Mass Spectrometry Lab at Cornell University.

Maria del Mar Jimenez Gasco is starting her second year as Assistant Professor in the Department and has been working on getting her research and teaching started. Her research

focuses on population biology of fungal plant pathogens. Dr. **Gnana Viji** joined the lab as a postdoctoral scholar in June 2005 and is working on the population genetics of the apple scab fungus, *Venturia inaequalis*, using microsatellite markers in a collaborative project with Dr. **Jim Travis**. Dr. **Carla Garzón** joined the lab also as a postdoctoral scholar in January 2006 and will be conducting research on the population biology of *Verticillium dahliae* from multiple hosts. **Ponusa Songtipya** is a Ph.D. candidate in Material Sciences and Engineering and is developing new polymers and nanocomposites with antimicrobial properties for agricultural applications. She is looking at the effect of different materials in fungal growth dynamics. Dr. **Adela Martinez-Cacha**, assistant professor of microbiology and director of the School of Nutrition, Catholic University of San Antonio, Murcia, Spain, spent three months in our lab as a visiting professor. During the summer Maria attended the APS annual meeting and the International *Verticillium* Symposium.

John Halbrendt. For the past six years my lab has worked closely with the Pennsylvania Department of Agriculture and USDA/APHIS on Plum Pox Virus (PPV) eradication. The projects are designed to search for virus reservoirs in wild plants and will continue for at least one more year. By all accounts, the eradication program has been very successful, and only five infected trees were found in 2005. The quarantined zone is shrinking and has already been rescinded in three townships that have remained virus free for three or more consecutive years. My other projects focus on the development of non-chemical management options for plant-parasitic nematodes and nematode transmitted virus. I am particularly interested in the use of rotation crops and green manures to prepare replant sites. This approach is environmentally sound and offers an option for "organic" growers. On the home front, John Derek (5) and Nikki (8) are growing like weeds and both enjoy school very much. Because we live in a rural area we must chauffeur the kids to all their events and the hand writing on the wall tells me this is just the beginning.

***Scott Isard*.** This year, Drs. **Erick DeWolf** and Scott Isard established the Computational Epidemiology and Aerobiology Laboratory (CEAL) within the Department of Plant Pathology. The goal of CEAL is to further our understanding of the spatial and temporal dynamics of plant pathogens and pests that reduce productivity of agricultural systems through teaching, research, and extension activities. Recently, Dr. **Alan MacNab** joined the laboratory. Current themes of our CEAL projects include epidemiology of field crop diseases, aerobiology, disease forecasting, and pest detection. Much of the current emphasis in these areas is focused on soybean rust, a pathogen detected in North America for the first time in November 2004. Wheat scab and diseases of tomato are other important foci of activity. CEAL includes three Masters, three Ph.D., and one post doctoral students as well as one Visiting Scholar. Two additional staff will be added in 2006. The CEAL website (http://www.ceal.psu.edu/) contains detailed information on our mission, students, and research/extension projects.



Nick Dufault, APS Meetings, Austin, TX, 2005

Seogchan Kang initiated three new research projects (funded by USDA-NRI). The goal of the first project (titled "*Phytophthora* database") is to establish an integrated community resource for detecting, monitoring, and managing *Phytophthora* diseases. The second project, titled "comparative genomics of pathogenic *Fusarium* species," aims to study the evolution and organization of the genomes of three pathogenic *Fusarium* species, including *F. oxysporum*, *F. verticilliodes*, and *F. graminearum*, via genome sequencing. Studying genetic mechanisms underpinning race variation in the rice blast fungus *Magnaporthe oryzae* is the goal of the third project. At the 9th International Verticillium Symposium (June 17-21, 2005) at Asilomar, CA, Kang presented a plenary talk (titled "Genetic, Cellular, and Chemical basis of Fusarium Wilt") and was elected to the International Organization Committee for the 10th International Verticillium Symposium. Kang also visited Seoul National University (Korea) and Agricultural University of Athens (Greece) and presented a seminar and several special lectures. For resident education, Kang developed a new course, titled Plant Genomics, with Drs. Majid Foolad (Horticulture), John Carlson (Forestry), and Surinder Chopra (Crop & Soil Sciences), and taught it for the first time in Spring 2005. A new Ph.D. student, **Yang Han** (Genetics), and a postdoctoral associate, **Jaime Blair,** joined Kang's program in 2005. **Chang-Hyun Khang** received his Ph.D. in 2005, as well.

Gretchen Kuldau. It has been an active year in the Kuldau lab. In September, Ph.D. student **Michele Mansfield** defended her dissertation on mycotoxins and mycotoxigenic fungi in silages. She graduated in December, attending the Graduate School ceremony with Dr. Kuldau. Also in September, the lab welcomed **Katelyn Tilley,** a first-year Masters student who will be co-advised by Dr. Erick De Wolf. Katelyn is a native of Washington, PA, and will be working on disease and mycotoxin development in head blight of wheat. Ph.D. student **Nik Zitomer** attended the joint Mycological Society of America/Japanese Mycological Society meeting in Hilo, HI, and gave a talk on his research on trichothecene production in *Fusarium*. On a personal note Gretchen Kuldau and her husband, Doug Archibald, adopted a beautiful baby girl, Iris Xiaoyi Archibald, in Guangzhou China, in August. Iris is adjusting very well to life in the US and her parents are very happy.

Alan MacNab conducts extension and adaptive research programs related to vegetable disease control. To facilitate improved tomato and blight control in Pennsylvania, environmental data are obtained for 19 sites, and then applied to disease forecasters (TomFAST for early blight, BLITECAST for late blight). Rapid and timely dissemination of results is facilitated through use of a blight phone-message line (1-800-PENN-IPM) and a web site (http://vegdis.cas.psu.edu/). Current research is focused on developing ways to allow use of NWS-based environmental data to drive the forecasters. **Ellen Hay** continues to provide staff support to the forecasting effort. On a personal note, it is a financial relief to have Cindy and both kids (Andy and Lindsey) finally out of school and employed.

Tim McNellis researches plant defense mechanisms to bacteria and teaches "Phytobacteriology" and a popular general education course titled "Plant Stress: It's Not Easy Being Green." **Judy Sinn** is a Senior Research Assistant in the lab, and **Phil Jensen** is a postdoctoral researcher with the program. The graduate students (all Ph.D. candidates) in the lab are **Steven Lee**, **Tzuu-fen Lee**, and **Jianxin Liu**. Dr. McNellis was awarded a major NSF grant in 2004 to work on the

genetics of apple tree disease resistance. Tim was granted tenure and promoted to Associate Professor of Plant Pathology on July 1, 2006.

Gary Moorman has started his 24th year of running around Pennsylvania teaching nurserymen, landscapers, arborists, and greenhouse operators about plant diseases. He has to keep "practicing" plant pathology until he gets it RIGHT! His research involves adapting molecular techniques for "fingerprinting" *Pythium* isolates so that when one is obtained from an infected plant it can be matched with ones obtained from various locations within the greenhouse where crop losses are occurring. In this way, he hopes to be able to determine whether the one causing crop losses came from contaminated soil, irrigation water, or came in on plants purchased from another greenhouse. At this time, Gary is awaiting decisions on funding from three different agencies. If one or more are approved, he will be looking for a postdoc and a grad student to work on the project. During the last year, funding ran out and **Carla Garzon** completed a postdoc on this project. **Jeniffer Yanez** completed a Masters of Agriculture and did numerous microscopic measurements of many *Pythium* structures. Her work and that of Carla's and Gary's has resulted in a manuscript in which it is proposed that a new species of *Pythium* be recognized, *Pythium cryptoirregulare* ("hidden" within *P. irregulare*). Gary taught a new course in 2005 that will be offered each Fall semester, PPATH 300, Horticultural Crop Diseases.

Eva Pell serves the university as Vice President for Research and Dean of the Graduate School. This past August her last graduate student, **Hernan Romero,** was awarded a Ph.D. degree in the Intercollege Graduate Degree Program in Plant Physiology. While Eva no longer is directly engaged in research and teaching it remains her passion. She is trying to influence these arenas both through her work on campus and through work at the national level. This past year she completed terms in two leadership roles as President of the Association of Graduate Schools and as Chair of the Council on Research Policy and Graduate Education.

Pete Romaine just completed another offering of his course in Plant Virology, while he continued his research and extension effort on the white button mushroom. Along with his research assistant, **Carl Schlagnhaufer**, Trichoderma green mold and La France virus disease occupied much of his time. Additionally, Pete continues to work closely with a major drug company in exploring the use of the mushroom as a biofactory for the mass production of human pharmaceuticals.

Dan Royse conducts research on edible mushrooms. Dan is advising two graduate students, **Alma Rodriguez Estrada**, a Ph.D. candidate working on the king oyster mushroom, and **Delphina Mamiro**, a Ph.D. candidate working on production of the button mushroom on non-composted substrate. In April, Dan received an Outstanding Graduate Alumnus Award in The College of Sciences, Eastern Illinois University in celebration of 50 years of graduate education at EIU. This past summer, he co-organized a symposium on the health benefits of mushrooms for the joint meeting of the Mycological Societies of Japan and America meeting in Hilo, HI, and discussed his research at the North American Mushroom Conference in Ottawa, Canada. Dan currently serves as president of the World Society for Mushroom Biology and Mushroom Products based in Shanghai, China.

Judy Sinn **(M.S. '82)** has been working in the lab of Tim McNellis, studying proteins involved in the plant-bacterium interaction. Their current project examines the effect of mutations in the HrpN effector protein of *Erwinia amylovora* on host and non-host protein interactions. The HpN mutants are also being tested for altered virulence and avirulence activities. Judy and Daryl's oldest daughter, Laura, will receive her B.Arch. with high honors from PSU this May, having won numerous awards and scholarships along the way. Son Greg is currently a sophomore at the University of Pittsburgh, and he will be joined at Pitt this coming fall by their youngest daughter, Julia, who graduates from State High in June.

Richard Stevenson **(M.S. '82)**, Senior Research Assistant, supports the air pollution project, working with Don Davis and Dr. **Dennis Decoteau**, who holds a Courtesy Appointment in Plant Pathology. Richard is responsible for the meteorological summaries for the air quality site.

Elwin Stewart. Research in my laboratory has focused on identifying the primary causes of young and old grapevine decline in Pennsylvania. We have found that trunk diseases are a major contributor to vine decline. We have focused our studies on Petri disease (*Phaeomoniella chlamydospora* + *Phaeoacremonium* spp.), crown gall (*Agrobacterium vitis*), and tomato ringspot virus, as they are often associated with decline. One of our goals is to produce vines that are free of crown gall and tomato ringspot virus. **Nancy Wenner** has become our tissue culture expert, which is the method of choice to develop clean vines. Nancy has made significant strides in this regard and we now have shoot tip vines in the greenhouse ready for disease testing. **Barrie Overton** joined the lab two years ago to develop highly sensitive molecular diagnostic tools for Petri disease, crown gall, and tomato ringspot virus. These tools are needed to test the tissue culture-generated vines for our target pathogens. The Petri disease detection protocol has been adopted in South Africa and Australia, so thus far, we feel this part of the program has been a success for us and other researchers. Our project focus has helped synergize the clean vine initiative being supported by the wine grape growers in Pennsylvania. **Leslie Long** is our resident project web master. Check out her work in progress at: www.grape.cas.psu.edu.

Jim Travis is located at the Fruit Research and Extension Center in Biglerville. This past year he completed 25 years in the department with responsibilities in tree fruit and grape extension and research. Dr. Travis is currently leading efforts in apples and grapes to conduct research in support of organic production and educate growers on the technical and practical aspects of organic production. In addition to numerous applied orchard research trials, Jim is working cooperatively with Dr. **Tim McNellis** on a National Science Foundation plant genomics research grant to reduce apple susceptibility to fire blight, *Erwinia amylovora*, and apple scab, *Venturia inaequalis*. In addition, Dr. **Maria Jimenez Gasco** and Dr. Travis are cooperating on research to describe the genetic diversity of the apple scab fungus in Pennsylvania, focusing on

Jim Travis (center) with growers at Organic Apple Demo Orchard, PSU FREC, Biglerville

fungicide resistance and strains resistant to the disease resistant apple cultivars that are widely used in organic apple production systems. Jim is currently co-advising one Ph.D. graduate student, **Anissa Demers**. Anissa's research focus is the biological control of several pathogens of apple.

Wakar Uddin leads the turfgrass pathology program. Wakar's research focuses on epidemiology and management of gray leaf spot and anthracnose basal rot diseases, and population biology of *Magnaporthe grisea* and *Colletotrichum graminicola*. He teaches two resident courses and one of the few Internet plant pathology courses. Wakar also operates a turfgrass disease clinic. **Bangya Ma** and **Upeksha Nanayakkara** are Ph.D. students, and Jeff Kern is a M.S. student in his laboratory.

Nancy Wenner **(M.S. '87)** is working on the clean vine wine grape project, assisting Elwin Stewart. Currently, she is developing a tissue culture protocol for growing grapes from heat-treated meristem tips. The project hopes Pennsylvania growers will adopt such clean propagation methods to produce disease free vines. Nancy received a Tag-Along travel award from the College of Ag Sciences International Office to attend the 4th International Workshop on Grapevine Trunk Diseases in Stellenbosch, South Africa, January 2005. She attended the meeting with Elwin Stewart and Barrie Overton.

~~"2005 Service Awards"~~

Service Award honorees in 2005 were **Gretchen Kuldau** and **Brian Dombroski** (5 years), **David Beyer** (15 years), and **Becky Peplinski** (35 years).

Awards Ceremony, January 27, 2006
l-r seated—Gretchen Kuldau, Barb Christ, Becky Peplinski; standing--Brian Dombroski, Delphina Mamiro, Anissa Demers, David Beyer, Teresa Shirk, Jean-Philippe Marelli, Alma Rodriguez Estrada

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~~"Staff News"~~

Randy Dreibelbis continued as manager of the Plant Pathology Farm at Rock Springs, and during 2005 he chaired the Rock Springs Farm Managers group. **Tim Grove,** research technician, handles Erick De Wolf's field program and also pitches in to provide back-up support to Randy in managing the farm. **Annalisa Arriati** joined the department as a member of the CEAL group last spring, working with Erick De Wolf and Scott Isard. **Roxanne Lease** manages the departmental greenhouse on campus and is actively involved as coordinator of research tours for Ag Progress Days. **John Pecchia** (**Ph.D. '00**) returned to Plant Pathology in May to take a position as Project Associate, working with David Beyer. **Kim Paley** also joined David Beyer's program in 2005. **Vija Wilkinson** continues in the mushroom program as well. Vija maintains the Mushroom Spawn Lab website (http://mushroomspawn.cas.psu.edu/). In 2005 Vija arranged a tour of the MTDF for Plant Pathology staff, and, along with **Tom Rhodes**, continued to make significant contributions to the annual Mushroom Short Course. Tom manages both the Mushroom Research Center and the Mushroom Test-Demonstration Facility, and provides numerous tours of the MTDF to various groups. **Henry Shawley**, **Douglas Keith**, and **Joseph Martain** serve as biological technicians at the Mushroom Research Center and the MTDF.

The office group underwent some changes as **Susanne Hart**, staff assistant for the graduate program, accepted a promotion in the Veterinary Science department and left Plant Pathology in May 2005, after a combined 15 years in the department. We welcomed **Jennifer Coslo** in June as our new staff assistant for the graduate program. Jennifer transferred to Plant Pathology from the College of Ag Sciences Development Office. **Jodi Shaw** married Willis Reed in a lovely summer wedding. Jodi continues as the department bookkeeper and serves as our departmental United Way coordinator. **Rita Smith** chaired our department social committee and, as a member of the Outreach Committee, was actively involved in the departmental youth display at Ag Progress Days. **Becky Peplinski** reached a milestone 35 years of service in 2005 and is very much enjoying putting this newsletter together for the alumni and friends of the department. **Marsha Tate** is our librarian and lends her expertise not only to the Hildebrandt Library but also to the department website. **Teresa Shirk**, Coordinator of Facilities, Services, and Safety for Buckhout Lab, was named winner of the 2005 Staff Laureate Award for Customer Service. This award, given by the College of Agricultural Sciences, recognized the exceptional positive impact that Teresa has in the department, college, and university.

John Peplinski (M.S. '72) continued as Coordinator of the Plant Disease Clinic and represents Penn State as a member of the North East Plant Diagnostic Network (NEPDN). In March, he and others from the National Plant Diagnostic Network (NPDN) attended a Soybean Rust Workshop at Fort Detrick, MD. **Sara May** (**M.Agr. '03**) assists in the Clinic and serves on the NPDN Diagnostics Subcommittee. Sara serves in a staff leadership role as Chair of the College of Ag Sciences Staff Advisory Committee to the Dean. Sara, as well as **Mike Peck** and **Chad Moore**, who assist in Barb Christ's potato program, attended the Mid-Atlantic Fruit and Vegetable Day in Hershey in February.

Brian Dombroski, research technician in Gretchen Kuldau's lab, marked five years in the department in 2005. **Jean Juba**, **Bill Sackett,** and **Mike Soika** continued in their roles as Sr.

Research Support Technologists. Jean manages the lab in the Fusarium Research Center and is involved in generating and analyzing DNA sequences for identifying *Fusarium* cultures. Bill Sackett works with Fred Gildow, assisting with electron microscopy, maintaining aphids, and helping with PPATH 405. Mike Soika provided support for the turf pathology program under the direction of Wakar Uddin. **Jo Rytter** works with Jim Travis and coordinates the Fruit Pathology website http://www.ppath.cas.psu.edu/EXTENSION/FRUITPATH/fruitpath.html.

~~"Post-Doc and Graduate Student News"~~

New post-docs in 2005 included **Nadav Nitzan**, who joined Barb Christ's program in May. Nadav received his Ph.D. in Plant Pathology from Washington State University. **Jaime Blair** received her Ph.D. in Biology from Penn State in 2005 and is working with Seogchan Kang and David Geiser. In September, **Mizuho Nita** joined the Computational Epidemiology and Aerobiology Lab (CEAL) group in the department, working with Scott Isard and Erick De Wolf. Mizuho received his Ph.D. in Plant Pathology from The Ohio State University. **Gnana Viji** joined Maria del Mar Jimenez Gasco's lab in June; Viji holds a Ph.D. from the University of Madras, India.

The department welcomed ten new graduate students in 2005. **Yang Han** entered the Genetics graduate program under the direction of S. Kang, and **Jeremy Zidek** began a degree program in Ecology under S. Isard's direction. New students in the Plant Pathology graduate program included **Mark Schall** (D. Davis, advisor), **Ermita Hernandez** (P. Backman, advisor), **Aaron Brown** (D. Beyer advisor), **Jose Santa Cruz Hildago** (B. Christ advisor), **Jeffrey Kern** (W. Uddin advisor), **Steven Lee** (T. McNellis advisor), **Katelyn Tilley** (G. Kuldau and E. De Wolf, advisors), and **Maria Velez-Climent** (S. Isard, advisor).

2005-06 Scholarship Awards

Anissa Demers and **Rachel Melnick**—Henry W. Popp Award
Alma Rodriguez Estrada—L. F. Lambert Spawn Co. Award in Memory of James P. Roberts
Jean-Philippe Marelli—Lester P. Nichols Memorial Award
Delphina Mamiro—Arthur Gaspari Memorial Scholarship
Victor Fluke (undergraduate)—Harold J. Miller Memorial Award

Departmental Graduate Student Travel Awards were made to **Hye-Seon Kim** to visit the Delaware Biotechnology Institute for training on confocal microscopy; **Rachel Melnick** to travel to Pichilinque, Ecuador, to isolate bacterial endophytes from *T. cacao*; **Alma Rodriguez Estrada** to conduct research at INRA-MYCSA and INRA-United de Recherches Zoologie in Villenave D'Ornon, France; and to **Maria Velez-Climent** to conduct experiments at the USDA/ARS in Ft. Detrick, MD. **Rachel Melnick** received the APS Potomac Division Travel Award and **Bangya Ma** and **Christopher Burkhart** received travel awards from the College of Ag Sciences to attend the 2005 APS meetings in Austin, TX. College of Ag Sciences travel awards were also made to **Delphina Mamiro**, who traveled to the 5th International Conference on Mushroom Biology and Mushroom Products in Shanghai, China; and **Nik Zitomer**, who attended the 2005 Mycological Society of America meetings in Hilo, HI.

J. P Marelli received a College of Ag Sciences Doctoral Candidate Competitive Grant for his proposal entitled "Development of a Model System to Study the Pathogenicity Mechanisms Underpinning Witches' Broom Disease of *Theobroma cacao*." **Nik Zitomer** received a third-place award for his poster in the Health and Life Sciences Division of the 2005 university-wide Graduate Exhibition. Nik received a third-place award in the Biological Sciences Division and **Anissa Demers** received a second-place award in the Environmental and Natural Sciences Division at the 2005 Gamma Sigma Delta Research Exhibition.

The Plant Pathology Graduate Student Association (PPA), which was founded in 2004-05, held a PSU Plant Pathology polo shirt sale in 2005. The students hope to extend the next polo shirt sale to our friends and alumni!

~~"Congratulations to Our 2005 Graduates"~~

Christopher Burkhart – M.S. in Plant Pathology (B. Christ, advisor)
"Genetic Resistance to Fusarium Dry Rot in a Diploid Hybrid, *Solanum phureja-S. Stenotomum*, Populations, and the Relative Virulence of Various *Fusarium* Species Isolates on Potato"

Anissa Demers – M.S. in Plant Pathology (P. Backman, advisor)
"Biological Control of Canada Thistle Using the Rust *Puccinia punctiformis*"

Chang-Hyun Khang – Ph.D. in Plant Pathology (S. Kang, advisor)
"Molecular Characterization of the MgMEP Avirulence Gene Family in the Blast Fungus *Magnaporthe grisea*"

Michele Mansfield – Ph.D. in Plant Pathology (G. Kuldau, advisor)
"Fungi and Mycotoxins in Fresh and Ensiled Maize and the Effects of Agronomic Practices, Weather Conditions and Silage Characteristics on Toxin Contamination"

Kara Maraden – M.Agr. in Plant Pathology (F. Gildow, advisor)

Teodora Orendovici – Ph.D. in Ecology (J. Skelly and D. Davis, advisors)
"The Response of Black Cherry and Hybrid Poplar to Ozone under Varying Environmental Conditions"

Alma Rodriguez Estrada – M.S. in Plant Pathology (D. Royse, advisor)
"Influence of Substrate Composition and Mushroom Strains on Productivity and Susceptibility of *Pleurotus eryngii* to Bacterial Blotch Disease"

Hernan Romero – Ph.D. in Plant Physiology (E. Pell, advisor)
"On the Role of the Enzyme Peptide Methionine Sulfoxide Reductase in the Response of Arabidopsis Plants to Oxidative Stress"

Jeniffer Yanez - M.Agr. in Plant Pathology (G. Moorman, advisor)

~~"~~

~~"News from Alumni and Friends"~~

Marcos Camara **(Ph.D. '99**) sends his greetings from Universidade Federal Rural de Pernambuco –UFRPE,) where he is enjoying the tropical climate and teaching an undergraduate course in Plant Pathology, Mycology and Molecular Plant Pathology for Masters and Ph.D. students. "My research is focused mainly on tropical crops like melons (epidemiology of Crater rot - caused by *Myrothecium roridum*), population structure of Papaya anthracnose (*Coletotrichum gloeosporoides* "complex") and I am starting a project on *Botryosphaeria* on mango." Marcos also mentioned that the work on *Botryosphaeria* would eventually be extended to include wine grapes. He also is actively engaged in advising students through advanced degree programs.

Fields Cobb **(Ph.D. '63).** Octavia and I continue to enjoy retirement in northern Idaho although we both have slowed a lot. Son Dave and family are still at Priest Lake about an hour's drive from us. Son Steve and wife are at Council, ID, and daughter Cynthia is still in Snohomish, WA. They are about six hours away, so we see our children several times each year. We wish everyone a very good 2006.

Alex Enyedi **(Ph.D.' 91).** Greetings from Kalamazoo, Michigan. Here's a quick update for 2005: On January 1, 2005 I was promoted to the position of Associate Dean (for Research) in the College of Arts & Sciences here at Western Michigan University. I stepped down as Chair of the Biological Sciences department after 3.5 years on the job. As the associate dean, my main responsibilities include increasing research and scholarly activity/output in the College, elevating the level of external funding that comes to the College, student/faculty recognition/achievement awards and personnel issues. The past year went by quickly and I'm enjoying my new job! alex.enyedi@wmich.edu.

Weimin Gao **(Ph.D. '01)** sends greetings from Brookhaven National Laboratory in Upton, NY where he works in the Department of Environmental Sciences (wgao@bnl.gov).

Michael Goodin **(Ph.D. '95)** sends his greetings and hello. Michael attended a professional meeting at Penn State during the summer of 2005 and stopped in to say hello. He is currently an Assistant Professor in the Department of Plant Pathology at the University of Kentucky in Lexington.

Kelly Ivors **(Ph.D. '02)** writes**, "**I started an assistant professor and extension specialist position in the Department of Plant Pathology at North Carolina State University in July 2004. I continue to do research and collaborate with many of the Penn State faculty including Seogchan Kang and David Geiser."

Diane Karasevicz **(M.S. '87).** Diane sent a quick update, noting that her daughter April has a love of birds. "She was a Bald Eagle for Halloween one year, and a swan another year. "We have lots of feeders at our place (near Ithaca, NY). We have also found a dead hawk and male scarlet tanager on our property (donated to Cornell Lab of Ornithology and the local science center). Our son, Trevor, is also fond of birds. He took some turkey wings to his nature program a few weeks ago (Uncle Kevin hunted the bird, which we had for Thanksgiving)."

Bill Kleiner **(M.S. '88)**, County Extension Director in Adams County, PA, has been selected to serve as Leadership Administrative Fellow with Penn State Extension from October 1, 2005-September 30, 2006.

Larry Madden **(Ph.D. '80)** received the E.C. Stakman Award from the Department of Plant Pathology, University of Minnesota, in October 2005, in recognition of his teaching, research, and service to the discipline of plant pathology.

Dr. Wally Marasas, former adjunct professor in our department and collaborator in the Fusarium Research Center, was named a Fellow of the American Phytopathological Society in 2005. Congratulations!

Barb Christ and Wally Marasas
in South Africa, 2005

Gene Milus **(B.S. '75).** Gene, a professor of Plant Pathology at the University of Arkansas, will be going on a sabbatical to Denmark from March through August 2006. He will be working on the phenotypic and molecular diversity of *Puccinia striiformis* (wheat stripe rust pathogen) with Mogens Hovmller and Annemarie Justesen at the Danish Institute of Agricultural Sciences at Flakkebjerg. His wife (Marci), son (Lee, 14) and daughter (Cat, 12) will join him for the summer.

Ameena Nalim **(Ph.D. '04).** Ameena worked as a Postdoc in David Geiser's lab during the summers of 2004 and 2005 while continuing to teach at the American University of Sharjah in the fall and spring of both years. She and her family are planning their relocation to the United States this summer.

Payungsak Rauyaree ("M") **(Ph.D. '03).** After leaving Penn State in 2003, "M" started his career at the Thailand Department of Agriculture working in the Director General's Office on administration and research policy planning. Starting in 2004, he received funding to begin research on resistance and pathogenicity of rice blast. Recently he also began working on cassava plant improvement using biotechnology. "M" has been involved in several international meetings and workshops on Biosafety and genetically modified organisms (GMOs). Since then he has served as a national expert involved in developing reports and presentations in Thailand, Japan, and Indonesia. Recently, "M" received a promotion as an Agricultural Research Officer, while continuing his main work on Rice improvement using molecular and genomic tools. "M" states that "I deeply miss Penn State . . . and everyone."

Leon Ressler **(B.S. '75).** Leon sends greetings to the Department and friends. He is currently Director of Lancaster County Extension in Lancaster, PA. (LRessler@psu.edu)

Matt Royer **(Ph.D. '82)** visited the department in June of 2005 to meet with faculty and USDA personnel regarding the soybean rust initiative.

John Skelly **(Ph.D. ' 64).** John and Linda Skelly now reside at 5316 Wyndemere Circle near the "thriving metropolis" of Mineral, Virginia, in a new home built by their son John as contractor within a Lake Anna community. Our other "kids" have contributed their time and talents as needed. Linda has taken a year-long course in medical transcription and loves her part-time position from our home while working for a nearby medical office affiliated with the University of Virginia John is preparing to teach a short course on forest pathology in Zaragoza, Spain, in February, 2006, and both John and Linda are working on hosting the 38th Air Pollution Workshop to be held April 9-13 in Charlottesville, VA. John is also involved as a consultant with a new NASA project in "teaching-teachers" about ozone air pollution and effects to plants. We both have become active within our Home Owner Association and the Belmont Ruritan and Women's clubs, respectively. We enjoy many visits with our four families involving our 13 grandchildren who are likewise enjoying boating and swimming in our 17 mile long Lake Anna! We love to follow our Nittany Lions football with most games telecast even into these remote areas of central Virginia! Come see us!!! Best wishes to all,

Jim Spadafora **(Ph.D. '86)** sends greetings from himself and his family.

Chris Wallis **(M.S. '04)** is currently working on a Ph.D. in Plant Pathology at The Ohio State University in Columbus. His current research involves describing the chemistry of response to infection in Austrian pine trees by an aggressive pathogen, *Sphaeropsis sapinea*, and a less aggressive pathogen, *Diplodia scrobiculata*. He is also working on resin chemistry changes in pine trees in response to fungal infection, and systemically induced resistance mechanisms. He states that he is really enthusiastic about chemical ecology and hopes to pursue research in this area involving woody plants. Currently, Chris is president of the OSU Plant Pathology graduate student organization. He also appreciated visiting with all of his old PSU classmates last year while participating in an Epidemiology course video-linked with Penn State. If all goes according to plan, he hopes to graduate in June, 2007. As for family life, baby Rosemary is now 11 months old, and her older sister is almost three years old. Both keep Michelle and Chris quite busy at home.

Cosima Wiese **(Ph.D. '01) and** ***Manuel Ospina-Giraldo*** **(Ph.D. '98).** Cosima and I are doing fine, working a lot. Cosima is still at Misericordia College where she is teaching introductory biology, plant biology, and a capstone seminar course; she is also coordinating a mentoring seminar for new faculty. Cosima is also part of the organizing committee of the air pollution workshop that will take place next year in Mexico. Time has flown and she will be up for tenure in the fall of 2006. I continue working at Wilkes University, where I've taught Genetics, Plant Pathology, and Mycology. The last two courses had never been taught here before so it's been a significant challenge. This summer I was doing research as a visiting scientist at my former institution, the US Dept. of Agriculture in Beltsville, MD.

Greg Watson **(M.S. '82)** and ***Eileen Watson*** **(Ph.D. '82).** From the Watson front things are doing well. Eileen has switched roles within Syngenta; she is now the NAFTA Head of Business Development. Greg now leads the State Regulatory Affairs and Federal Label Support Team within Syngenta. This group registers products with the states after federal EPA approval, and works with the states on Section 18 and 24(c) registrations. Kemper, our oldest son, will be 15 in January 2006; he is a freshman in high school. He made the JV soccer team and plays on a classic level club soccer team that travels in NC and to tournaments outside of NC. Banning is 12 now and in 7th grade. We are hopeful that he will get his black belt in karate in 2006. In 2005 Eileen's family had a family reunion, and her father died just about a month after the reunion. On a brighter note, we went to several concerts with the kids, spent some time at the beach, and worked on our 30-year landscape project called "our yard."

Inigo Zabalgogeazcoa **(Ph.D. '92)**. Inigo is doing well in Salamanca, Spain. He currently is a scientist with the Consejo Superior de Investigaciones Cientificas, a national scientific research organization. His research focuses on fungal epiphytes in plants, especially wild grasses. In orchard grass (*Dactylis glomerata*) he and his students have identified 62 genera of fungal endophytes. Unable to forget his Ph.D. studies at Penn State working in virology, his most recent student is completing her thesis on a ds-RNA virus infecting the fungal epiphyte *Epichloe festucae*. In addition, each year Inigo teaches Plant Pathology to fourth year students at the University of Salamanca, one of the oldest universities in Europe. Although founded in 1218, Inigo admitted that they have purchased some new furniture for the classroom. Inigo's wife, Cristine (Ph.D. '02), who he bumped into at Penn State, is now a Professor of Economics at the University of Salamanca and doing very well. They both are busy with work, with renovating their newly purchased 300-year-old fixer-upper stone cottage in Montemayor del Rio, and enjoying chasing after their two beautiful children, Irene (9) and little Inigo (4). (izabalgo@usal.es)

Jacquie (Smith) van der Waal sends greetings and best wishes from South Africa. Jacquie spent Fall Semester 1998 in our department as a visiting student in the potato program while working on her Ph.D. at the University of Pretoria. Jacquie currently is in charge of her own potato research program at the University of Pretoria.

2005 Holiday Party

Alan MacNab, Herb Cole, Jim Bloom, Jim Tammen, Barb Christ

Mary Merrill, Felix Lukezic

Marie Leath and Ken Leath

Xinshun Qu, Barrie Overton, Alan MacNab

Leslie Long, Sara May, Annie Mahoney

Sook-Young Park, Yang Han

Seogchan Kang, Erick De Wolf, Dave Geiser with baby Dash (in carrier), Camille Francl, Carla Garzon with baby Isabel, Sarah Rich

Seated: Teresa Shirk, Vija Wilkinson
Standing: Gary Moorman, Jim Travis, Richard Stevenson, Alan MacNab

Annalisa Ariatti, Scott Isard, Lois Schisler, Lee Schisler

Jean Bloom, Elwin Stewart, Herb Cole

Gnana Viji, Fran Moorman

Judy Sinn, Heidi De Wolf, Julio Molineros, Nick Dufault, Tim McNellis

~~"Endowments"~~

We thank the family, colleagues, and alumni who have contributed to the endowed funds in the Department of Plant Pathology. Your gifts provide support to the teaching, research, and extension/outreach missions of the department. We were especially gratified by your donations in 2005 to the Leonard J. Francl Memorial Endowment, and also wish to recognize Mary Merrill, whose generosity enabled the William Merrill, Jr. Memorial Endowment to become fully endowed in 2005. Also in 2005, Herb Cole established the Herbert Cole, Jr., Program Support Fund for Cooperative Extension, which will support Cooperative Extension activities throughout the College of Ag Sciences.

Leonard J. Francl Memorial Endowment in Plant Pathology

The Francl endowment has been created to provide support for activities promoting the study of plant disease epidemiology. This endowment was established in 2005 to honor the memory of Dr. Leonard Francl, who served as head of the Plant Pathology Department between 2002 and 2005.

William Merrill, Jr. Memorial Endowment

The Merrill Endowment was created to enhance teaching resources and/or student programs in the field of Plant Pathology. The endowment honors the memory of Dr. William Merrill, Jr., who served on the faculty from 1965 to 1999. Bill Merrill passed away January 29, 2003.

Albert Hildebrandt Botany Library Endowment

Arthur Gaspari Memorial Scholarship Fund

Harold J. Miller Memorial Endowment

Henry W. Popp Graduate Assistantship

James Oscar Watts Memorial Potato Research Endowment for Plant Pathology

L. F. Lambert Spawn Company Endowed Scholarship in Memory of James P. Roberts

Lester P. Nichols Memorial Award

Mushroom Industry Endowment for Penn State

Plant Pathology Graduate Studies Enhancement Fund

Richard R. Nelson Memorial Lectures Endowment

If you would like to contribute to any of our endowments, please send your gifts in care of the Department of Plant Pathology, 212 Buckhout Lab, University Park, PA 16802. Please make checks payable to The Pennsylvania State University, and please be sure to specify which endowment you wish to support.

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Editors' Note. We hope you enjoyed the 2005 edition of the Penn State Plant Pathology Newsletter. Please keep in touch! Send your news and notes for the 2006 edition to bpeplinski@psu.edu). We'd also appreciate your help in keeping our mailing list up to date. If your address changes, please let us know by e-mail or postal mail to 212 Buckhout Laboratory, University Park, PA 16802. *Becky Peplinski & Fred Gildow, editors.*

This publication is available in alternative media on request.

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