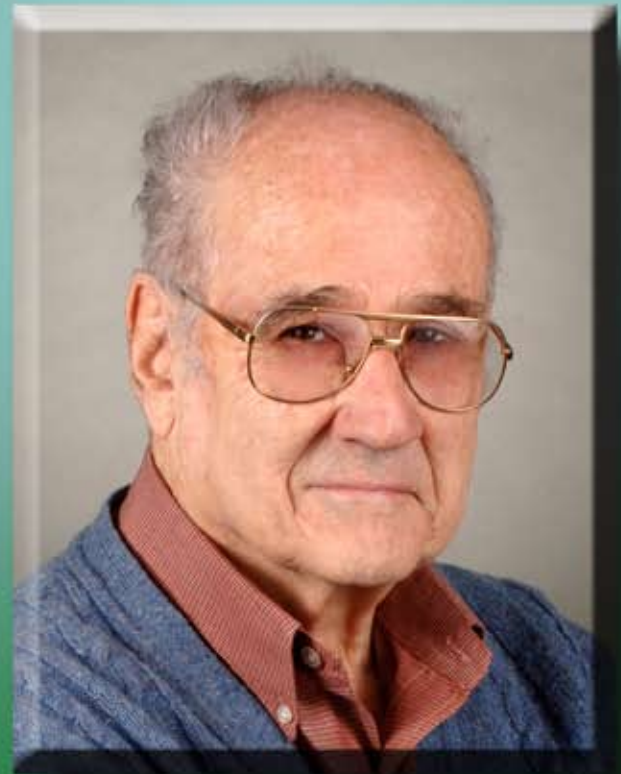




Cornell University
Department of Plant Pathology



H. David Thurston



Milt Zaitlin

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Send feedback and suggestions for future newsletters to Jackie Armstrong (jra7@cornell.edu) or George Hudler (gwh2@cornell.edu).

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GREETINGS FROM THE CHAIR

November 2006



Wow! My third Newsletter as Chair! The years sure do seem to slip by quickly when there's so much going on and so little time to pause to enjoy it. Nonetheless, we've had another great year and my challenge will be to keep my "brief" overview within the confines of this page.

Items in two general categories - facilities and people - top our list of really BIG news for 2006. First is the completion of a bridge between the Plant Science Building and Emerson Hall. In what had to be one of the New York State Construction Funds finest hours, plans were completed and materials were ordered last winter so that when spring arrived, the builders were ready. In less than 6 months, they put a new floor on the existing loading dock that juts out into the driveway between Emerson and Plant Science, converted the new space into two labs and four offices, and added just enough of a bridge to join the two buildings. A later story by Dave Kalb tells you a bit more about the new addition, and the traffic flow between the buildings has already proven to be a real boon to communications between faculty and students in the various Plant Science buildings.

In another notable improvement to the Plant Science halls, Sam Cartinhour – a USDA-ARS employee who is also a Courtesy Prof. with us and who specializes in bioinformatics, saw his new lab – a renovation of the former Beer lab on the fourth floor - finally come on line. The job wasn't done quite as quickly as the aforementioned Loading Dock addition, but the final product was a major transformation of three former labs into a fine workspace for Sam and his team. Several folks in the Department collaborate with Sam now and we expect increased interaction with him as the "Genomics Age" matures.

Our second category for BIG news has to do with people. We were fortunate to attract seven new graduate students to the Department in 2006; from places as distant as Venezuela and British Columbia and as close as the Crop and Soil Science Department in Bradfield Hall. Each one comes to us with a strong background in microbiology and the same passion for discovery that puts some bounce in the veterans' steps as they

traverse our hallowed halls.

Welcoming the next generation was just the start of the year, though. We had at least as much fun celebrating the prestigious awards won by some of our emeritus faculty. Milt Zaitlin received the Award of Distinction from APS for his work on the role of the coat protein in the pathogenicity of tobacco mosaic virus. That's the highest award the Society offers and is held by just a few others in the profession including such legendary figures as E.C. Stakman and J.C. Walker. Milt shared the stage with Dave Thurston who received the APS International Service Award. In Dave's 40+ year career, he became well known throughout the world for his tireless efforts to educate students from Third World countries in how to study plant diseases and thereby improve crop yields. Most recently, he has chosen to focus on recording traditional methods for growing tropical crops with the full expectation that there is some scientific basis for success of long standing but poorly understood farming practices. Four of our graduate students – Maryann Borsick, Megan Dewdney, Angela Nelson and Nicole Russo were also honored with travel awards in Quebec City as were Geneva Department colleagues Helene Dillard (APS Fellow) and Harvey Hoch (MSA, Distinguished Mycologist Award).

Earlier in the year, Gary Bergstrom received the Distinguished Alumnus Award from Purdue University at a gala affair that included a banquet with the dean of the college of agriculture and the president of the university and a special visit with Gary's major professor at Purdue – Ralph Nicholson.

Those are a few of the highlights but you'll read much more about each of these events and many others in the pages that follow. We are especially pleased at how cooperative you have been in responding to our requests for alumni news and hope that you will continue to keep us abreast of your activities.

Best wishes.



APSAWARDS - CONGRATULATIONS!

BY GEORGE HUDLER

Two emeritus professors in the Department, well known for their contributions to science and to agriculture, received prestigious awards from the American Phytopathological Society at the 2006 Annual Meeting in Quebec City, and we are pleased to honor them again on these pages.

AWARD OF DISTINCTION *MILT ZAITLIN*

The Award of Distinction is the highest honor the Society bestows and one presented only on rare occasions to persons who have made truly exceptional contributions to plant pathology.

Milt was born in Mt. Vernon, NY on April 2, 1927 but spent much of his youth in the western U.S. as his family moved first to Arizona and eventually settled in California. There - amidst abundant sun, warm temperatures, and lush vegetation - Milt developed an interest in plants. This he carried with him to college where he earned a B.S. in Plant Pathology from UC Berkeley in 1949. Immediately thereafter, he was employed as a research technician at Caltech where he used plant bioassays to identify the primary components of California smog which were damaging the local vegetation. In 1950, he was attracted to UCLA and the laboratory of Samuel G. Wildman. Wildman had just joined the UCLA faculty in the Department of Botany, and Milt was one of his first students. Wildman and colleague James Bonner, had recently begun to apply new techniques for visualizing and manipulating the contents of cells in macerated spinach leaves, and their work marked the beginnings of contemporary cell biology. Little did he know that this was not the first time that Milt would have a front row seat as a new era of biology dawned. For his own research, Zaitlin perfected a serological assay for detection of two viruses that were causing immense problems for tropical orchid growers. The progress of his work went from lab bench to field application as his assay techniques were used by orchid growers in Hawaii for several years after the initial discovery.

Milt wasn't solely confined to the laboratory while at UCLA, though. He also logged some hours as a teaching assistant in several botany courses. It was there that he spotted a young lass named Marge who immediately captured his fancy and eventually became his wife and mother to their four children.

With a significant contribution to Pacific Island agriculture to his credit, Milt set his sights on bigger game and moved even farther west - to Australia - where he served for four years as a research officer for the CSIRO Division of Plant Industry in Canberra. While many of his peers were making names for

INTERNATIONAL SERVICE AWARD *DAVID THURSTON*

H. David Thurston received the International Service Award to acknowledge his outstanding contributions to plant pathology for work in a country other than their own.

Dave (we're still trying to figure out what that "H" stands for!) was born and raised on the prairies of northwestern South Dakota where the only thing that spoiled his view of the Rocky Mountains was the occasional telephone pole or windmill. Of course, there was also that problem with the curvature of the Earth; a minor obstacle to Dave's way of thinking and one that would never pose a significant obstacle to his quest for the "big picture." Little did anyone know that that hunger for changing lives in far away places would persist for Dave's entire career.

Dave graduated from high school with a mixture of scientific curiosity and love of the land in his blood and those two led him to the University of Minnesota where he got three academic degrees, all in Plant Pathology. He also found time during his graduate years to marry his high school sweetheart, Betty, and together, they raised three boys.

While still working on his Ph.D., Dave was employed for two years by the Rockefeller Foundation in Colombia and following completion of his doctorate, he was chosen to be director of the Instituto Colombiano Agropecuario. Five years later, he became head of the Rockefeller Potato Program and two years after that, director of the Plant Sciences Division of the Colombian Agricultural Institute.

Dave joined the faculty at Cornell in 1967 as a Professor of International Agriculture and Plant Pathology and he continued to hold that title until he retired in 1996.

Although Dr. Thurston was well-versed in the horticultural and pathological aspects of a wide array of tropical crops, his two obvious favorites were potatoes and cassava. He actively recruited graduate students from South America to come to Cornell in hopes that they would both enrich the lives of resident U.S. students while in Ithaca and eventu-

Milt Zaitlin

themselves by identifying and describing new viruses, Milt accepted the much more difficult challenge of trying to determine how viruses replicated within plant cells. This marked, for him, the beginning of what would forever after be a passionate effort to understand the biology of tobacco mosaic virus. Discovery of several unique mutants of TMV gave him the tools he needed for studying particle replication and cell-to-cell movement, and once seemingly irreconcilable questions about the biology of the pathogen began to crumble in his path.

Milt returned to the U.S. as a post-doctoral associate at the University of Missouri for four years, then spent another 13 years at the University of Arizona. In 1973, he finally found a permanent home in Ithaca where he still remains active as an emeritus professor.

For most of his career, Milt and the students under his direction worked on various aspects of the biology of tobacco mosaic virus. They learned how replication in TMV occurs and clearly demonstrated that the virus did not obtain any unique stimulus from its plant hosts in order to make more of its own. They also learned how the pathogen disrupted normal cell function by studying effects of the particles on isolated organelles and they discovered how the particles – long, rigid rods – moved from one cell to another and from one part of a plant to another.

Zaitlin's thirst for new conquests didn't stop when he left the lab, and among other things, he became and remains a serious threat to the fortunes of others when he takes a seat at a poker table. Fortunately for plant pathologists in Ithaca, the stakes are low enough that even on a bad night, Milt's competitors can expect to close the evening with enough money to buy gas for the ride home. However, we have it on good authority that blackjack dealers in Vegas tremble when the Zaitlin brothers (Milt still has a brother in California) join forces each year for a few days on the town.

In recent years, Milt has courageously participated in "town hall meetings" where the merits of GMO crops are being discussed. He is usually pitted against one or more eloquent "organosists" who bring far more emotion than fact to the table and seem to sway the already skeptical crowd with ease. So far, Milt has survived the onslaught of verbal barbs and we hope they don't become any more tangible than that.

Milt's colleagues both at Cornell and throughout the world continue to be challenged – perhaps even rejuvenated – by his wit and wisdom and look forward to more in the years ahead.

Dave Thurston

ally return home to educate others and to make farming in their native lands profitable. He excelled in both areas and the Thurston legacy is destined to remain an influential factor in Latin American agriculture for years to come.

As Dave spent more time working with farmers who practiced "traditional agriculture" in the Tropics, his appreciation for the success of their methods grew. In fact, he saw so many instances of their success that in recent decades he has become one of the few English speaking champions of the "traditional" cause. He wrote several books on the merits of traditional farming techniques and in so doing has stimulated others to conduct the experiments needed to support previously casual observations with hard data.

Among the many fruits of Dave's labors that will forever serve plant pathologists concerned with agriculture in developing nations, two that are particularly noteworthy are his extensive photographic collection, freely available at <http://www.tropag-fieldtrip.cornell.edu/docthurston/smokinhome.html> and the massive literature database that accompanies his book – Sustainable Practices for Plant Disease Management in Traditional Farming Systems.

Those of us who have had the pleasure of knowing Dave by way of our frequent conversations around a cup of coffee or in his office will always remember some of his other unique traits. One is his extraordinary passion for neatness. The pencils on his desk are always neatly sharpened and arranged, his files are always impeccable, and his computer desktop is always enviably well-ordered. If a visitor happens to upset Dave's system or otherwise crosses some ill-defined line, (s)he is likely to receive one or more cards with a not-so-veiled message of incompetence that Dave always seems to have in his wallet. And, of course, there is the all-too-frequent muttering in Spanish- usually regarding some administrative superior - that few of us understand by words but all of us understand by style of delivery.

Congratulations to both Dave and Milt for this time of recognition of their monumental achievements. We are truly lucky to have availed ourselves of their time and talents.

NEWS AND VIEWS

A SPECIAL VISITOR TO THE DEPARTMENT BY JACKIE ARMSTRONG AND GEORGE HUDLER

The Plant Pathology faculty, staff and students were pleasantly distracted by a very special visitor one day this past summer. Much to the surprise of all, a peacock was found perched on the window sill outside the Plant Science Building 3rd floor window which faces North toward Mann Library. The inquisitive bird walked from side to side, staring in the window at



all of us “gawkers” who were staring back at her. It was obvious she was just as interested in us as we were of her! A quick call to our friends at the Laboratory of Ornithology led us to know that this beautiful bird was a “resident” at the estate of Dorothy Park. Mrs. Park and her late husband, Roy H. Park, have been prominent residents of Ithaca for many years. The Park School of Communications at Ithaca College is named after Mr. Park who owned a huge media empire. As far as we know, this was the first attempt by a “member of the family” to sneak a peek into the wonderful world of Plant Pathology. Several hours after its arrival, Mrs. Parks’ gardener arrived to coax the bird into his arms and back to its home.

LETTER OF THANKS TO PROFESSOR KATHIE HODGE

Dr. Hodge,

I wanted to thank you for the prompt and professional assistance that you gave us last month. As you recall, I phoned you with a request to identify a mushroom that had been picked at the same location from which one of my patients had foraged and eaten several mushrooms the night before. You asked us to send over the sample and quickly identified it as *Amanita bisporigera* — the destroying angel. Thanks to your rapid identification, we lost no time in initiating treatment and transferring the gentleman to the care of Peter Abt, MD at the Transplant Center of Strong Memorial Hospital in Rochester. Dr. Abt relayed to me that the patient did well and has had a complete recovery without the need for liver transplantation! Dr. Abt made the point that it was the rapid identification and treatment that made the difference in this man’s recovery and to that end we owe you a debt of gratitude. This community is lucky to have you as a great resource and a good friend.

Thanks sincerely,

Ric Allen

Richard Allen, MD

Attending Staff

Department of Emergency Medicine



H. HALLEN/MICHIGAN STATE UNIVERSITY
AMANITA BISPORIGERA — THE DESTROYING ANGEL

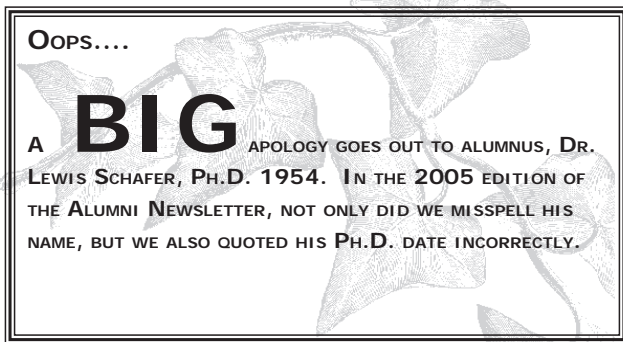
FLYING COWS BY JACKIE ARMSTRONG

Those people who just happened to be looking out the window toward the Mann Library Construction project on April 26th, would have seen Cornellia, the flying cow, on loan from The Department of Food Science's Dairy Store.

Tradition has it that an evergreen is hoisted to the highest point of a construction project for good luck, prosperity and to celebrate the project's safe construction record, and is the "topping off" celebration. Those people with a sense of humor felt that flying Cornellia up wearing an evergreen garland, was the perfect representation of this tradition that marks the placement of the highest roof beam of the renovated building.

About 150 people from nearby buildings joined the staff of Mann Library and Plant Biology to watch the hoisting and indulged in light refreshments on the Ag Quad. A steel beam was signed by students, faculty and staff and was also hoisted during the ceremony.

Renovations in Mann Library building should be complete by summer 2007 and the building re-opened that Fall.



SPEAKING OF COWS..... BY JACKIE ARMSTRONG



(*Cornell Chronicle* May '06.) Danielle Hodgins ('08) created a sod cow in front of Morrison Hall on Tower Road as part of her class project for Hort 203. Her sculpture "Misty Sue" was a welcoming display for all to see on campus during the month it was there. When the sod finally died off and the sculpture removed, it was a very sad day indeed.

HOLIDAY DINNER DANCE 2005 AT GENEVA

BY AMY ANDERSON, GENEVA EXPERIMENT STATION

The Ithaca and Geneva Joint Holiday Party was held on Friday, December 9th at the Lakeview Ballroom at the Ramada Inn Geneva Lakfront. There were 108 people in attendance.

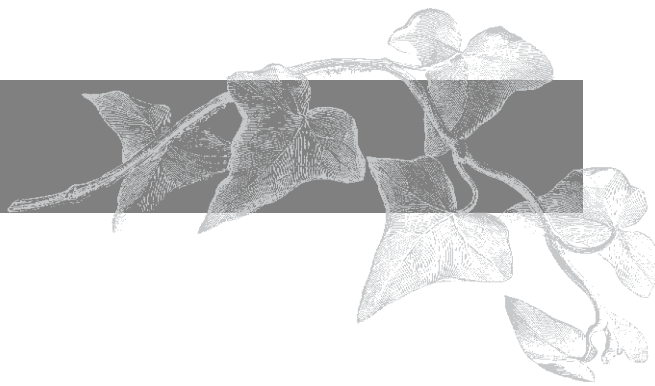
Hors d'ouvres and a cash bar started out the evening, followed by a Mediterranean buffet served in the main ballroom. The buffet included salads, fresh fruit, vegetable sides, antipasto, chicken cacciatore, vegetable mousaka, pork au poivre, rolls and beverages. The chef then provided a pastry display of desserts.

The Departments enjoyed white and red wine from two of the area's finest wineries: Anthony Road and Fox Run.

Music was provided by the group "Unbalanced" which played a variety of 80's, 90's and pop music. The percussionist for the band was one of the Experiment Station's own staff members.

Swarthout Couch bused members of the Ithaca department to Geneva. Many spent the night in rooms especially reserved for the party.

GRADUATE STUDENTS



WELCOMING NEW GRADUATE STUDENTS . . .

AMARA CAMP

B.S. Juniata College, Biology, 2005

Interests in general agriculture, disease diagnosis and plant health. Experience for two summers as intern and technician in plant pathology lab at Ohio State University. Most recently spent a year as volunteer for Grow Pittsburgh working on urban agriculture.

MARIN BREWER

B.S. University of Cincinnati, Biological Sciences, 1998
MS University of Maine Orono, Plant Soil and Environmental Science, 2003

MS research in biological and cultural control of Rhizoctonia diseases; experience for 4.5 years as technician for USDA-ARS lathencurrently employed at Ohio State in Wooster on genetics and QTL mapping of tomato fruit morphology.

Current interests in fungal biology; broad interests in genetics, evolution, ecology and/or systematics of fungi.

DANIEL CLUNE

B.S. SUNY ESF, Environmental and Forest Biology, Syracuse, 2003

MS Cornell University, Soil and Crop Sciences, 2006
MS research at Cornell in CSS on soil microbiology and arbuscular mycorrhizae. He is working with Teresa Pawlowska on genetics and evolution of AM fungi.

BRIAN KING

B.S. Miami University, Oxford, OH, Botany, 2003
MS University of British Columbia, Plant Science, 2006
MS research on entomopathogenic fungi and fungal metabolites with antimicrobial activity. Interests continue in finding novel chemicals in fungi; also molecular biology and systematics of fungi.

Agricultural Engineering degree, Army Polytechnic School, Ecuador 1999

MS, Ohio State University, Plant Pathology, 2006
Undergraduate research in screening for disease resistance in beans; employment as farm manager; internship with International Potato Center in Ecuador on potato late blight control and resistance breeding. MS research on partial resistance to *Phytophthora sojae* in soybeans.

Current interests in genetics and mechanisms of host plant resistance; QTL mapping of resistance.

DEEPTI THETE

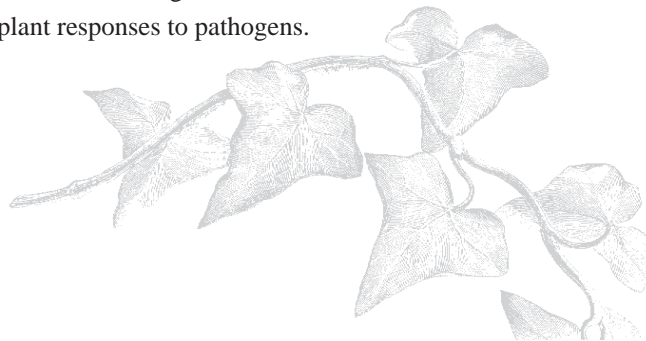
B.Sc. University of Pune, India, Microbiology, 2001
M.Sc. University of Pune, India, Microbiology, 2003
Undergrad interests and lab experience with medical microbiology; MS research on using fungi for bioremediation of wastewater.

Currently Research Support Specialist in Sam Cartinhour's lab with interests in gene regulation in *Pseudomonas syringae*.

ANDRE VELASQUEZ

B.S. Agraria La Molina, Biology, 2002
Research experience for 3.5 years (undergrad research and then as research assistant) in genetic linkage mapping in potatoes at International Potato Center in Lima, especially with respect to markers associated with PLRV resistance.

Interests for grad research in molecular mechanisms of plant responses to pathogens.



NEW STUDENT ORIENTATION

ITHACA VISIT

BY MEGAN ACKERMAN:

On August 21st, we had an orientation in Ithaca for the new graduate students. The seven new students got a chance to meet some of the important non-academic staff in the department, including Dave Kalb, the department photographer Kent Loeffler, the IT department, and some of the administrative staff. They also got a student handbook and were shown their desks. There was an opportunity to socialize with other people in the department over lunch, then we went to the offices of the graduate school before going off to university registration. The orientation concluded with a trip to the Dairy Bar for ice cream.

GENEVA VISIT

BY MICHELLE MOYER:

On Tuesday, August 22nd, the incoming students started the day off bright and early with a trip to Geneva. While there, they enjoyed a special coffee break with the entire department and got a brief introduction to some of the programs. That was followed up with some farm tours and a trip to the Grape Germplasm bank. After a chance to socialize and dine with the Geneva graduate students for lunch, a tour of labs was offered. Students were able to visit the Dillard, Seem/Gadoury, Wilcox, Aldwinkle, Hoch and Smart Lab, with the addition of visiting the Cadle Davidson Lab in USDA. After tours were complete, the students were treated to a picnic down at Seneca Lake State Park.

A NOVEL APPROACH TO PLANT PATHOLOGY OUTREACH

BY STEVE BEER

Graduate student Sara Carpenter is in the advanced stage of developing an innovative outreach project aimed primarily at secondary school biology students in New York State. She is working through the Cornell Institute for Biology Teachers (CITB), specifically with Bob Suran, to bring the program to a group of secondary school science teachers. The teachers will meet on the Cornell campus soon to test the materials and possibly suggest changes to the project for use in classrooms. The project involves the development of two units which introduce students to several important concepts: that bacteria can cause disease in plants; that specific genes are needed for disease-causing ability; that bioinformatics strategies can be used to annotate a genome sequence, and that reverse genetics laboratory tests can be used to assess gene function. The units will allow teachers to provide students with experience in developing hypotheses and collecting and presenting data using virtual experiments.

Sara used a portable DVD camera, borrowed from CALS Instructional Resources, to film the preparation of a pathogenicity/virulence assay of the bacterial plant pathogen, *Erwinia amylovora*, which causes Fire Blight of apples, pears and other rosaceous plants. The film was shot on location in the Beer Research Laboratory in 304 Plant Science Building. It starred another graduate student, Jo Ann Asselin, who carried out preparations of the test on camera. Jo Ann started by

transferring a bacterial culture, growing it and then making a suspension of bacterial cells at a specific concentration, wounding immature pear fruits and introducing precise amounts of the pathogen into the wounds in the fruits.

The inoculated fruit were incubated in a special chamber developed by Plant Pathology Department Photography Kent Loeffler, who also arranged for hundreds of digital time-lapse photographs to be taken during the 7-day incubation period. When viewed over the course of less than a minute, the images reveal startling disease progression; the inoculated wounds of the pears darken, the area of necrotic tissue enlarges and soon characteristic bacterial ooze issues from the wounds.

In addition to the basic disease progression caused by the wild-type bacterial strain, Sara and Kent also recorded the activity of mutants of the pathogen and the same mutants complemented with cloned genes corresponding to those mutated. Thus, "molecular Koch's postulates" were tested and illustrated during the time-lapse incubation period.

Students may choose particular segments of the time-lapse DVD that involve one of three different specific genes. After putting forth hypotheses based on information about gene function obtained from bioinformatics databases, the student can choose a specific gene mutation and monitor the appearance of pears fruits inoculated with that mutant, and in

continued on page 17...Novel Approach



FACULTY

NEWS

GARY BERGSTROM

The past year was a year for recognition by Gary's alma maters. In March, Gary received the 2006 Distinguished Agricultural Alumnus Award from the Purdue University College of Agriculture, the highest award bestowed on Purdue alums. Bergstrom earned two degrees from Purdue, a B.S. in microbiology and an M.S. in botany and plant pathology. The award was presented by Dean of Agriculture Randy Woodson and Purdue President Martin Jischke. Gary was cited for significant accomplishments in research and education on the epidemiology and management of field crop diseases, his capable mentoring of graduate students, and his national leadership and service to plant pathology and agriculture. Bergstrom met with faculty, staff, and students in the Department of Botany and Plant Pathology and presented a departmental seminar entitled, "On the trail of cereal killers..." A reception was given in his honor at the home of Professor Ralph Nicholson, Gary's M.S. advisor and mentor in plant pathology.

In May, Gary returned to the University of Kentucky where he earned his Ph.D. in plant pathology. Gary was one of six alums of the UK Department of Plant Pathology invited to share their career experiences with graduate students and postdoctoral scientists at a department retreat.

Gary was the principal organizer, on behalf of APS and cooperating organizations, of the National Soybean Rust Symposium in Nashville in November 2005. The Symposium was hugely successful with attendance at over 350 and a good balance of registrants from academia, government, and industry, and very good participation by graduate students and young professionals. He continues to be active in national and New York programs to reduce the impact of soybean rust on agriculture.

Gary gave invited presentations on the "Aerobiology and regional epidemiology of *Gibberella zeae*" at the Fourth Canadian Workshop on Fusarium Head Blight in Ottawa in November and at the Corn Pathology Meetings in Chicago in December.

David Schmale III finished his Ph.D. (The aerobiol-

ogy and population genetic structure of *Gibberella zeae*) with Gary in December and began his new position as assistant professor of mycotoxicology and fungal plant pathology at Virginia Tech in March. Michelle Cilia Reeve joined Gary's lab in fall 2005 as a postdoctoral research associate and has been conducting research on alternative vectors of *wheat spindle streak mosaic* with Gary and Stewart Gray. Michael Wunsch continues as a Ph.D. student in the Bergstrom Lab working on the detection and biology of *Phoma sclerotioides* and *Fusarium oxysporum* f.sp. *loti* in forage legumes. Stan Kawamoto continues as a part-time researcher in the lab working on biological control of wheat scab with *Bacillus*.

Bergstrom rotated into leadership of Cornell's State-wide Program Work Team on Integrated Field Crop, Pest, and Soil Management. His current priority is working with the New York Farm Viability Institute and the New York Corn Growers Association to organize focus groups with field crop growers around the state in order to identify barriers to the field crop industry and priorities for targeted research and education programs.

ALAN COLLMER

The work in Alan Collmer's lab has continued to focus on the functional genomics of *Pseudomonas syringae*. One of the highlights of the year was a trip by several members of the lab to the MPMI Meetings in Merida on the Yucatan peninsula (in December, finally, after two hurricane delays and a change of cities). However, the biggest news from current and recent members of the lab involves the making of NEW GENOMES. Specifically, Hye-Sook Oh produced a new genome named Luna, Clemencia Rojas (now in St. Louis) produced a Juan Felipe genome, and Emilia López (back in Madrid) produced TWO named Ana and Maria. Based on chubby cheek and cuteness phenotypes, these all appear to be very high-quality genomes. Congratulations to Hye-Sook, Clemencia, and Emilia (and their respective collaborators Kyu-Soon, John, and Javier) on these successful experiments.

BILL FRY

I was Senior Associate Dean in the college again for 2005-2006. In that capacity I have responsibility for facilities, faculty issues (promotions, searches, grievances of various sorts, etc), sponsored research, HR and some other miscellaneous things. These responsibilities limited my physical presence in Plant Science Bldg. In terms of things plant pathological, members of my lab made good progress.

Jorge Andrade-Piedra graduated and his thesis Ph.D. publications appeared during the year. Jorge improved the late blight simulator to more accurately represent the cycle of pathogenesis and to more accurately portray characteristics of the *Phytophthora infestans* population that is now dominant worldwide. Margot Beckett's Ph. D. publications also appeared during the year. She determined that strains of *P. infestans* currently present in the USA can be pathogens of petunias and calibrachoa. This is important because petunias and calibrachoa are sometimes grown in greenhouses with tomatoes (another host of *P. infestans*).

Hilary Mayton completed her Ph.D. in the employee degree program. Hilary demonstrated the potential of oospores to survive in upstate NY conditions for at least 18 months. She searched for antagonists of *P. infestans* in soils from central Mexico, but did not find any. She did find QTLs for resistance to *P. infestans* in a tetraploid potato mapping population from Walter de Jong's program.

Margot is currently at Mesa State College in Colorado; Jorge is with the International Potato Center, and Hilary is in a postdoctoral program in the Plant Breeding and Genetics department at Cornell.

Current lab members are Guohong Cai (postdoctoral associate), Kevin Myers (technician), Paola Duque (grad student). The group just moved into a new lab in a new addition over the loading dock.

GEORGE HUDLER

Since our last report, we have been a busy and productive lot with considerable progress on understanding issues related to both biology and management of our Number One Nemesis – *Phytophthora*-caused bleeding cankers of European beech. We now know that two species of *Phytophthora* – *P. citricola* and *P. cactorum* commonly cause the cankers and that there are at least two other species that are occasional inhabitants of necrotic bark. Repeated observations by us and cooperators throughout the Northeast lead us to believe that the organisms are, indeed, primary pathogens, worthy of continued study from all angles. One disturbing observation is that now that

we know what to look for, we find the disease in about 40% of the European beech that we examine in any given location. Not all 40% are destined to die soon but if untreated, they will surely have significantly shorter lives than uninfected trees. We also know now that many of the dominant broadleaved tree species in the eastern hardwood forest—except oaks—are susceptible to the pathogens, though none so much so as European beech. The good news is that combinations of mulch under trees to reduce foot and lawnmower traffic, combined with bi-annual bark drenches with phosphorus acid, seem to slow canker growth. At least our observations to date are convincing enough for us to recommend the treatments to tree care professionals who otherwise have little alternative but to let diseased trees go.

For fun, graduate student Angela Nelson and post-doc Jerry Weiland both traveled to Virginia to learn additional molecular techniques for working with *Phytophthora* and we hosted a visit by colleague Yilmaz Balci, a staff member and ace *Phytophthora*-baitologist from West Virginia University. And, we all had a delightful week in Quebec City at the 2006 APS meeting – Jerry and Angela both making excellent presentations on their research and Hudler doing his best to cheer them on from the sidelines when not hobnobbing with Cornell alums. Angela, by the way, received a generous travel award from APS to make the trip; a proud moment for us all.

DICK KORF

As Emeritus Professor of Mycology, who attended my 60th Cornell reunion this summer, I have changed my lifestyle and gave up my 6-month winters in Florida to stay henceforth in cold, grey Ithaca. I think I might even get some mycological projects off the back burner as a guest in Kathie Hodge's lab.

MEG MCGRATH

I was invited to speak on "Communicating air quality-plant effects science to the public and user sector" at the Third International Conference on Plants & Environmental Pollution held in Lucknow, India. Submitted papers were selected for oral presentation at the Third International Cucurbit Conference (Managing Cucurbit Powdery Mildew and Fungicide Resistance) and at Cucurbitaceae 2006 (Occurrence of Fungicide Resistance in *Podosphaera xanthii* and Impact on Controlling Cucurbit Powdery Mildew in New York). I also made 8 presentations at extension meetings throughout the northeast. I served as the expert in plant pathology for the Advanced Training in Organic Crop Production, which consisted of a series of workshops funded by NE-SARE. A chapter on 'Managing

plant diseases with crop rotation' was completed for the Rotation Planning Manual, which is geared for organic vegetable and grain producers in the northeastern US. I am finishing a 3-year term as Councilor for the Northeastern Division of APS and a 3-year term as Senior Editor for *Plant Disease*.

REBECCA NELSON

Rebecca Nelson's research group focuses on the analysis of quantitative disease resistance in corn. The group currently includes Dr. Judy Kolkman (lab manager); Chia-lin Chung, Lin-si Hsieh and Santiago Mideros (graduate students in Plant Pathology); Jesse Poland (graduate student in Plant Breeding and Genetics); and Joy Longfellow and Ellie Walsh (undergraduates). Dr. Randy Wisser recently completed his PhD in Plant Breeding and Genetics and has started a post-doc at NCSU. Their collaborators include groups at Cornell, North Carolina State University (NCSU), Colorado State University, the Kenyan Agricultural Research Institute, the International Rice Research Institute in the Philippines, and the Indonesian national rice research program. A research update can be found at http://www.generationcp.org/arm/ARM06/day_3/Nelson.pdf (the work was conducted with support of The Generation Challenge Program, The Rockefeller Foundation, the USDA and others). Rebecca's group moved into their new laboratory in September and they are thrilled with their beautiful new facilities. A quarterly update on Rebecca's work as director of The McKnight Foundation Collaborative Crop Research Program can be found at <http://mcknight.ccrp.cornell.edu/participants/reports.html>.

TERESA PAWLOWSKA

This past year was full of exciting events in the Pawlowska lab. We moved to our brand new lab space in 412 Bradfield Hall. We hosted Kequan Pei, a visiting scientist from the Chinese Academy of Sciences in Beijing, who joined us for a year to study the role of arbuscular mycorrhizal (AM) fungi in plant invasions. Recently, we attracted Dan Clune, a new graduate student interested in understanding the role of common mycorrhizal networks in nutrient fluxes between grasses and legumes. Kara Pivarski is getting ready for her first field season of collecting *Gigaspora* samples from coastal dunes to study bacterial endosymbionts of AM fungi. Several research projects in the lab are drawing to conclusion. Henk den Bakker and Meghan Walsh gathered data that support exclusively clonal reproduction in modern Glomeromycota. Jean-Luc Jany developed a cytological approach to observe spore development in the AM fungi, and discovered that spore

nuclear populations are created by an influx of nuclei from the surrounding mycelium, which could explain the long-term evolutionary survival of Glomeromycota in the absence of sexual recombination. None of these projects would have been possible without Rima Shamieh, our unfailing fungal culturing expert. We also had help from Kristen Tauer, an Ithaca High School senior, who explored with us methods to study diversity of Glomeromycota. And, we had a great cause for a celebration: Meghan and Henk got married last month. Congratulations!

KEITH PERRY

My research program has three current emphases: the development of a virus and multipathogen detection system for solanaceous crops, plant virus vector transmission, and potato viruses. Perhaps the biggest change has been the initiation of the diagnostics project (cooperatively with Chris Smart in Geneva and Amy Charkowski at Madison). My lab has developed a macroarray detection system for potato viruses and this is being expanded to detect most all known viruses of solanaceous crops. This work is being done by a research associate, Dr. Bright Agindotan. Work on cucumber mosaic virus and vector transmission has slowed following the departure of, Jeremy Thompson. Jeremy took a position as a staff scientist in Italy outside Venice at the ICGEB Biosafety Outstation Ca' Tron. Some of the work on potato viruses is on *potato virus Y* and is being done by a finishing graduate student, Phil Baldauf. Phil is working jointly with Stewart Gray and myself. Through my past five years here, the operation of the laboratory has been held together by the stellar oversight of Laura Miller whose tenure as a Cornell employee is approaching 30 years! We've also had the pleasure of working with 15 undergraduate student workers in the lab in 2005-2006.

My other major responsibility is the oversight of the Uihlein Farm and the Foundation seed program. We have seen two new certified seed growers start up this past year, bringing the total in NYS to eleven. In 2005, Dennis Lawrence officially retired, but his continued presence working half time has ensured the smooth operation of the field production. He is working with the longer-term field assistant Larry Strack, and the more recent hire, Dennis Lawrence Jr. After many years at the farm, Burt Williams retired from the field program and Dennis Jr. has taken over his responsibilities. Dennis Sr. is training Larry and Dennis Jr. in all aspects of the field operation. Barry Melching has the primary responsibility for the lab and greenhouse operation, but over the past five years has coordinated all the activities at the Farm. He recently

announced his intention to retire in June, 2007, so we will be looking for a new Farm supervisor or manager. Fortunately, the tissue culture and greenhouse program will be able to rely on the continuing expertise and contributions of Cheryl Craft. Cheryl has a new sprout in her life, young Lena Marie born in February 2006. Since spring 2005, a new employee Bethany Donnelly has provided a great boost in keeping up with the tissue culture and greenhouse work, but is unfortunately now out on medical leave. And lastly, we greatly appreciate the continuing part time employees Chris Plank and Kathy Moody who contribute in a multitude of ways to the success of the Uihlien Farm.

On the home front, Ronan Francis Lindeberg Perry (age 8) started third grade and Julian Lindeberg Perry (age 5) started kindergarten, a major landmark! Their mother, Magdalen Lindeberg, is now working three quarter time with Alan Collmer. As mentioned in a past year, the boys are pretty high energy and Magdalen savors those relatively quiet hours at work.

WAYNE SINCLAIR

I was in Michigan in May and October, 2006, giving a seminar on ash yellows at the University of Michigan, Ann Arbor, and giving an invited presentation on ash decline in eastern North America at the North Central Forest Pest Workshop at the University's Biological Station at Pellston.

TOM ZITTER

Tom Zitter currently serves APS as an acquisitions editor for APS Press. He is also currently involved in the revision and editorship of the Compendium of Tomato Diseases to be released by APS Press in 2007. 2005 saw the completion of the Cucurbit Disease Identification Guide, as an addition to the Vegetable MD web site maintained in the department. This addition will be followed by the Tomato Disease Identification Guide to be launched later in 2006. The Vegetable MD web site continues to be a popular resource tool for vegetable enthusiasts around the world, with over 1 million hits recorded in 2005. The addition of several articles in Spanish has extended the readership into additional foreign countries.

In July 2006, Tom served on the organizing committee for the First International Tomato Congress held in Guadalajara, Mexico July 19-21. This Congress was sponsored by Meister Media Worldwide, which publishes a series of vegetable production magazines including the American Vegetable Grower and Productores de Hortalizas. Zitter spoke to the 550 attendees on his research covering late blight and early

blight of tomato and the use of genetic resistance for control. His tomato work in cooperation with Martha Mutschler of the Department of Plant Breeding and Genetics was also presented at the 20th annual Tomato Disease Workshop held in Wooster, OH in October 20, 2005.

In September 2006, Zitter attended the Cucurbitaceae 2006 meeting held in Asheville, NC, Sept. 18-21. He presented a paper on bacterial diseases affecting cucurbit in the US and abroad.

Helen Griffiths joined the program in 2005 as a research associate concentrating on diseases affecting potato, include *Phytophthora* tuber blight, pink rot and black dot.

FALL STAFF RETREAT

DAWN DAILEY O'BRIEN

On October 28, 2005, 11 support staff from Ithaca's Plant Pathology Department went on a day long retreat that included lunch at the beautiful Belhurst Castle on the shores of Seneca Lake in Geneva. This second annual Staff Retreat was the department's way of saying thank you for all



the hard work and dedication the staff shows throughout the year. We were joined by four of our esteemed colleagues from the Geneva's Plant Pathology Department from the NY State Agricultural Experiment Station. After our delicious lunch at Belhurst Castle we toured Geneva's Plant Pathology department. Many of us had never even been to the Experiment Station before, so this was a great opportunity to see a place we hear about a lot!

DEPARTMENTAL FACILITIES

FINALLY! THE CONNECTION TO BRADFIELD IS COMPLETE!

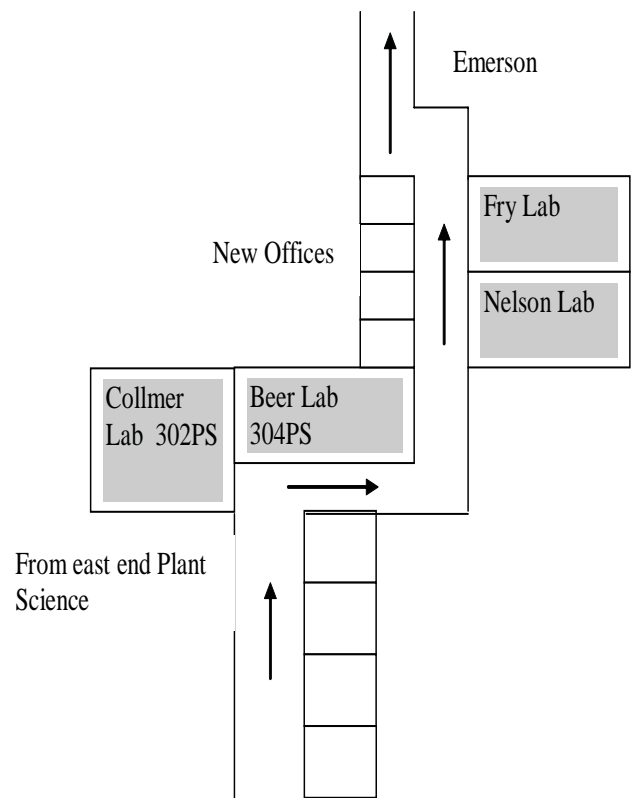
by David Kalb



The Department just celebrated the ribbon cutting ceremony that officially opened the corridor connecting Emerson and Bradfield 2nd floor with Plant Science 3rd floor. This long awaited connection not only allows for quick and covered walking from Bradfield to Plant Science via Emerson, but it gives us access to the large freight elevator in Emerson to move large equipment into our department. We all hope to see increased interaction between personnel in the various connected departments, especially with Plant Breeding and Plant Biology.

At the ribbon cutting were Dean Susan Henry, the chairs of the various connected Departments in Plant Science, Emerson Hall and Bradfield Hall as well as a host of students, faculty and staff. Bagels, coffee cake and beverages made for a festive coffee break. In fact, a permanent feature of the connection is an approx. 15 ft square of corridor with large glass windows facing north and south. One overlooks the drive into Bradfield with views of Bradfield and the PS greenhouses, and through the oaks to the athletic fields on Tower Road. The other set of windows provide a view of the courtyard of the intersection of Mann, Emerson and PS, currently the home of the “Gimme Coffee-airstream-trailer-coffee-shop”. This windowed area of the corridor has been outfitted with tables and chairs and a small sofa for reading, talking and those 5 min breaks in the sunlight that we all need now and then. We thank Rebecca Nelson for buying the nice furniture for this spot.

The best feature of this new connection is the new labs and office spaces that came with it! Unlike the first-envisioned, glass covered walkway between PS and Emerson, the task was accomplished by building another full level on the 2 story loading dock and making the connection with a corridor through the new space. The result is two, 1300sq ft laboratories with all the modern conveniences of AC, 220 power, fume hoods, and WINDOWS and 4 offices on the north side of the corridor. This is especially nice for the folks coming from Bradfield as one of the new inhabitants of this brand new lab space is none other than Bill Fry and his lab personnel and students. The occupants of the second lab are Rebecca Nelson and company, whose lab work was previously accomplished in Biotech, then Dimock lab for a few months, then 341PS and then 353PS. She is very glad to finally have a place to call home!



PLANT PATHOLOGY PHOTO LAB NEWS

BY KENT LOEFFLER

Greetings from the Plant Path Photo Lab. It's been an exciting year in the photo lab, that is if photography excites you. We've become 100% digital, upgraded camera and computer equipment, and converted both darkrooms into dedicated time-lapse studios. I'm also happy to report that the humongous construction crane that has hovered ominously over the Photo Lab for the past year (part of the Mann Library renovation project) has finally been removed without any accidents involving 2 ton girders.

First, for any gear heads out there, we recently purchased a Nikon D2X digital SLR camera and assorted lenses, bellows, and speedlights. The camera is unbelievable, but its hefty price tag (\$5K for body) makes it a bit extravagant unless you are using the camera constantly under trying conditions. The lab's older Fuji S2 has been pressed into duty making time-lapse movies, but more on that later. As for computers, we've upgraded to a Mac G5 and a high end Dell with dual processors to handle the huge files that the D2X creates.

It's always fun to learn totally new processes and I was thrilled this year when Ted Kinsman visited from Rochester and taught me his technique for making digital time lapse movies. Ted used to work here at Cornell, but moved to Rochester about 15 years ago and teaches at RIT as well as running his own Scientific Photography business (<http://www.sciencephotography.com/>). His time-lapse movies pop up on TV in such productions as *The Bachelor*, *Six Feet Under*, and *Weeds*. The technique is simple but requires some special equipment and software. Luckily, we had almost all the equipment already and only needed to purchase Adobe After Effects to get the ball rolling. In a nutshell: you need a laptop with software that will control a digital camera and act as an intervalometer, a digital camera hooked to the computer, an electronic flash hooked to the camera, an interesting specimen, and a room where no-one will disturb the set up for days or weeks. Adobe After Effects is used to combine the hundreds of JPEGs into either a QuickTime Movie or Windows Media Video. So far, the results have been pretty spectacular and you can view some of the movies on the Photo Lab Web Site (<http://www.ppath.cornell.edu/PhotoLab/>).

This coming year looks to be busy and productive. Projects include the digitizing of the George Atkinson Photo Archives (10,000+ images of fungi) and also continuing with the Plant Pathology Photo Archives (60,000+ images). These images can be accessed through the Cornell Plant Pathology

Herbarium Web Site (<http://odell.mannlib.cornell.edu/cupp/catalog/>). We are also planning to start teaching a Photoshop for Scientists Workshop this fall. Three computer work stations have been cobbled together for this effort which will be open to students and staff of the department. Finally, I hope to experiment with more of the incredible imaging software available on the market. For anyone interested, I recently purchased an amazing bit of magic called Helicon Focus Pro (http://heliconfilter.com/pages/focus_overview.html) which creates one sharp image from a stack of images with shallow depth of field. Anyone out there doing macrophotography or microscopy should check this software out.



"DESCRIPTION OF DICKEYA GEN. NOV.

BY ALAN COLLMER

Dickeya (*Dickeya*. N.L. fem. n. *Dickeya* after the American phytopathologist Robert S. Dickey, for his contribution to research on the *Erwinia chrysanthemi* complex)."

This quote and the initial recommendation is in: Samson, R., Legendre, J.B., Christen, R., Fischer-Le Saux, M., Achouak, W., and Gardan, L. 2005. Transfer of *Pectobacterium chrysanthemi* (Burkholder et al. 1953) Brenner et al. 1973 and *Brenneria paradisiaca* to the genus *Dickeya* gen. nov. as *Dickeya chrysanthemi* comb. nov. and *Dickeya paradisiaca* comb. nov. and delineation of four novel species, *Dickeya dadantii* sp. nov., *Dickeya dianthicola* sp. nov., *Dickeya dieffenbachiae* sp. nov. and *Dickeya zae* sp. nov. *Int. J. Syst. Evol. Microbiol.* 55: 1415-1427.

The community does not necessarily follow such recommendations. However, at a meeting in Dundee last week the "Erwinia" community decided on the switch. *E. amylovora* stays the same. But the soft-rotters change. *E. carotovora* becomes *Pectobacterium carotovorum* and *P. atrosepticum*, etc. *E. chrysanthemi* 3937, the sequenced strain, now become *Dickeya dadantii*. Other species of *Dickeya* were also generated by this change. I learned this at the International Conference on Phytopathogenic Bacteria in Edinburgh earlier this week. Now I have to figure out how to properly pronounce these names, as well as reprogramming my brain to use them.

NORTHEAST PLANT DIAGNOSTIC NETWORK BY KAREN L. SNOVER-CLIFT

We have completed our fourth year as a member of the National Plant Disease Network (NPDN) and as the regional center for the Northeast, known as the Northeast Plant Diagnostic Network (NEPDN). As you may remember from our introduction and updates in past newsletters, the network was established to enhance national agricultural security by quickly detecting introduced pests and pathogens. The network allows Land Grant University diagnosticians and faculty, State Agriculture and Markets personnel, and first detectors to efficiently communicate information, images, and methods of detection throughout the system in a timely manner.

A number of faculty and staff work with the program. Our Chair, Dr. George Hudler holds the position of Director of the NEPDN. Karen L. Snover-Clift serves as the Associate Director of the NEPDN and Chair of the National Diagnostics Subcommittee and the National Database Subcommittee. Other members of the NEPDN Regional Center team include Karen Scott as the Information Technology Specialist, Mary McKellar as the Education and Training Coordinator, Sandra Jensen-Tracy as our Clinic's Lead Diagnostician, and Patty Clement as our Survey Coordinator and Data Entry Technician. The Northeast Region is comprised of the following 12 land grant universities: University of Connecticut, University of Delaware, University of Maine, University of Maryland, University of Massachusetts, University of New Hampshire, Rutgers University, Cornell University, Pennsylvania State University, University of Rhode Island, University of Vermont, and West Virginia University.

It has been an exciting year. We continue to receive samples associated with the discovery of *Phytophthora ramorum*, the causal agent of Sudden Oak Death/ Ramorum Blight, in a production nursery in Los Angeles County, California. The Plant Disease Diagnostic Clinic (PDDC) processed thousands of samples from New York State and from many Northeastern States through a US Forest Service surveying. Additionally the PDDC acting as the NEPDN Regional Center, supported all our NEPDN members by providing DNA extractions and molecular testing for anyone not capable of performing these techniques. We are continuing the search for *Phakopsora pachyrhizi*, the causal agent of Soybean Rust. This year we are working with Gary Bergstrom and his sentinel plot program to determine if the pathogen has moved into New York State. So far, no confirmed cases! As mentioned in more detail in another article of this publication, Plum Pox Virus (PPV) was detected

for the first time and our laboratory members and temporary summer staff felt the pressure of a dramatic increase in the number of samples to be processed through the Clinic. Once PPV was identified we were asked to increase sample testing from 10,000 samples to 74,500 samples for this season!

A major accomplishment for this year is our approval as a Provisional Approved Laboratory for *P. ramorum* testing. This approval allows us to perform the molecular testing for *P. ramorum* here in our laboratory instead of sending every sample to the Federal laboratory in Beltsville, Maryland. Achieving this status was not an easy task. First we applied for consideration by writing a letter of intent and sending detailed schematics of our laboratory and workspace areas. Next we were inspected by a group of 3 USDA scientists who were looking to determine if the space available would meet the guidelines they had established. And lastly, three of our staff were challenged with panels of 20 samples that needed to be processed using USDA/APHIS/PPQ/CPHST validated multiplex and nested PCR protocols. Patty Clement, Mary McKellar and Karen Snover-Clift all passed with flying colors and received certification to perform the testing in our laboratory.

As we enter our 5th year, we are confident in our ability to train others on the potential risks, to perform the testing required to quickly identify the pests and pathogens of concern and as needed, to communicate all this information to the responders in the system. We have come a long way thanks to the support and funding opportunities given to us through the National Plant Diagnostic Network.

PLANT DISEASE DIAGNOSTIC CLINIC UPDATE.

BY KAREN L. SNOVER-CLIFT
AND SANDRA JENSEN-TRACY

The 2006 season has been very busy in the Plant Disease Diagnostic Clinic. As usual, we have received samples from a wide array of sources including homeowners, commercial growers, and consultants in all fields of plant production. Although the majority of the samples we receive are still woody ornamentals, we also examine vegetables, fruit, turfgrass samples from golf courses as well as home lawns, and a variety of annual, perennial and forage crops.

In many cases, the woody ornamentals we are receiving show little evidence of disease, but after conferring with the homeowners, growers, landscapers, arborists, etc, we find that the effects of last summer's drought are being felt across a broad

area. The very wet 2004 season seems to have been stressful especially when followed by the mid-summer drought of 2005. Although many trees appear to have survived both, when the temperatures hit the 90's this season, and transpiration exceeded uptake of water from damaged root systems, browning and loss of needles on conifers really took off. Samples with "drought" like symptoms started pouring in. Trees at the centers of rows or surrounded by other trees where no irrigation was used in 2005 were hit the hardest as these had the most competition; in many cases, death of trees in such locations was reported. We are still (in September) receiving samples reported to have begun showing symptoms back in July. The symptoms on conifers can be confusing to Clients and it has been extremely challenging trying to convince them that their tree can effectively be dead but still have green needles!

This year, it seems that with the exception of anthracnose diseases, many of the other woody ornamentals submitted to the Clinic have had abiotic problems. After drought, over-watering seems to be the next biggest problem we have been seeing in 2006. Although this season has been relatively wet, we still receive samples where clients report that the specimen is "watered daily" where usually the affected plant is one that prefers a well-drained site. We are finding more and more that lawn and tree care professionals are looking to us for a "second opinion" so that they can try to convince their clients to reduce irrigation. Too often, the nearby trees and shrubs suffer the effects of frequent irrigation used to keep lawns looking lush.

One area where we are seeing some real disease has been with turfgrass samples. Early in the season, many turf samples showed yellowing of leaves with little evidence of a pathogen, and various abiotic problems such as too much or too little water, were usually determined to be the most likely problem. Later on however, as temperatures increased, we started seeing some real disease. No surprise, anthracnose and Pythium root and crown rots were the most prevalent problems. A potential new disease on turf "Waitea Patch" surfaced in California this year (identified by a Cornellian, Dr. Frank Wong) and was quickly recognized across the country. Numerous names have been suggested for this new disease including Yellow Patch and Brown Ring Patch, but Waitea Patch is emerging as the most recognized common name. *Waitea circinata* var. *circinata* is recognized as the cause of the disease, but a *Rhizoctonia* sp. is the anamorph. We had a few samples early in the season that fit the description of that disease, and we were able to isolate or microscopically view mycelium fitting the basic description of the anamorph. Once a discussion began between turfgrass professionals, it was obvious that they had been seeing symptoms

of this disease for a number of years but could not distinguish it from other diseases at the time.

We still get many diagnostic requests via e-mail and/or phone calls. This has been a great growing season for development of the powdery mildews. This season, e-mail and phone "diagnosis" of Powdery Mildews may finally have surpassed the identification of Tarspot of Maple as the most readily diagnosed sight-unseen disease!

PLUM POX VIRUS FOUND IN NEW YORK STATE FOR THE FIRST TIME.

BY KAREN L. SNOVER-CLIFT

For the first time in New York State (NYS), the Plum Pox Virus (PPV) was detected by the Cornell University Plant Disease Diagnostic Clinic in samples of two plum (*Prunus domestica*) trees in Niagara County, NY during laboratory testing for the NYS Department of Agriculture & Market's (NYSDAM) National Survey. The trees and surrounding area were re-sampled immediately. Eight samples were collected from the originally positive trees and 53 samples were collected from the surrounding area. Seven of the eight samples from the original trees tested positive. All the surrounding area samples tested negative, no virus found. All samples were tested using ELISA and real-time PCR— validated and approved testing methods. Subsequent analysis by staff at the USDA-APHIS-PPQ-CPHST laboratory in Beltsville, MD confirmed that we had found the "D" strain, the same found in Canada and Pennsylvania.

On August 21st tree in a second location in Niagara County tested positive for PPV. This year's survey effort will increase to include an additional 64,500 samples to the originally planned 10,000 samples already processed. A one mile area around the positive finds will be surveyed and all host trees sampled and sent to the Cornell laboratory. There are plans to possibly survey a 5 mile radius if sample collection teams are available. The collections will continue until frost hits the area. An eradication effort is in the planning stages. Just prior (August 11th) to this second find in NYS, the pathogen was identified in southwestern Michigan as part of the National Survey. That find was also on Plum and also the "D" strain of the virus.

Plum Pox, also known as Sharka, is a viral disease of stone fruit trees such as plum, peach, and apricot. It has been a devastating disease in Europe since the early 1900s, where it was first reported in Bulgaria, then spread throughout Europe. In recent years the disease has spread to the Americas, first be-

ing found in Chile in 1992, in the orchards of Adams County, Pennsylvania, in 1999, and in Ontario and Nova Scotia, Canada in 2000. Strain D is not known to infect Cherry and it cannot be transmitted through infected fruit.

INFORMATION TECHNOLOGIES BY **KEN SANDLAN**

The formation of the Plant Science Information Technologies (PSIT) service area was finished this past year. This group provides computer support for four organizations: Plant Pathology, Plant Biology, Horticulture, and Cornell Plantations. Ken Sandlan, originally from Plant Pathology serves as the IT Manager for the service area. Jase Baese, from Horticulture, serves as the Senior Client Support Specialist and is responsible for implementing many of the new technologies and strategies put in place during the last year.

Dominic Lipari, Maria Hungerford, and Levi Adams all serve as client support specialists. Dominic started in Plant Pathology in a temporary position three years ago and was the person mainly responsible for incorporating Plant Biology into the new service area. He has picked up the additional duty as the 'Emergency responder' for off-hour catastrophes. When networks or servers go down, he is the first on site and performs an initial evaluation of the situation. He then either repairs the problem or contacts Ken and/or Jase for further consultation. Maria came to us from the Roberts Hall service area and functions as an expert on both PC and Macintosh desktops. She is also responsible for Web server maintenance and helps clients develop web-sql database interfaces. Levi's introduction to the world of IT support was in the commercial arena where he functioned as the IT department for a local printing company. Levi's primary duty is to support the servers and networks of the wide flung Plantations area under the supervision of Jase Baese. He brings expertise in UNIX and Macintosh platforms as well as the PC desktop and Window's server operating systems. He and Jase recently finished bringing Plantations into the fold of PSIT.

The Plant Science IT service area is unique in being the most wide ranging of 7 in the College, consisting of 19 subnets and over 800 workstations/servers/printers. Clients are housed from one side of the campus to the other as well as in far flung installations such as the Herbarium at Emerson Power facility near Ithaca College, Freeville Farm, Blue Grass Lane next to the Golf Course, and the various Cornell Plantations facilities. The maintenance of such a diverse group is only possible due

to the implementation of several new IT initiatives. CAL-SNET, the college wide network domain allows us to automate housekeeping procedures such as patching operating systems and maintain up to date anti-virus files. Automatic connection protocols (DHCP and DNS) reduces the complexity of issuing IP addresses, allowing laptop users to move freely between buildings and allows the issuance of Guest accounts for visitors. They also increase security through quarantine procedures which detect compromised machines and remove them from the network before they can do extensive damage. Most important is the development of an on-line Help system which allows efficient dispersal of client requests among the various support specialists. Such automated procedures allow a higher ratio of clients to support personal, saving the College considerable funds in reduced salary costs.

continued from page 8...Novel Approach

comparison, the wild-type strain (positive control) and buffer (negative control). The action of the mutant containing the defective gene and the same mutant complemented with an intact version of the gene also can be observed. The students are urged to make observations of disease progress at several intervals during incubation, and they may pause the presentation at any point during incubation to facilitate more detailed observations of the inoculated fruits.

A third graduate student, Ana Maria Bocsanczy, participated in the project also by contributing to the development of materials that illustrate the function of specific nucleotide sequences in producing gene products that are active in the bacterium's ability to cause Fire Blight. A bioinformatics exercise was developed to convey the concepts of locating specific segments of DNA that are likely to result in RNA that can be translated into protein.

Although others have contributed to the project, Sara's contribution cannot be overemphasized. She conceived the project as a virtual exercise for secondary school students, whose access to real-life plant pathological experimental materials is quite limited. She outlined the experiments, wrote and narrated the action, which she personally filmed, edited and then dubbed; she even provided piano accompaniment for the closing segments.

The outreach material discussed was developed especially for use in secondary schools; however, it may also be useful to introduce concepts of bacterial pathogenesis of plants, disease development and bioinformatics to other audiences. These may well include undergraduate and graduate students interested in the plant sciences and microbiology, and Cornell



ALUMNI NEWS

George C. Kent, Emerits Professor

(Submitted by his son, George E. Kent)

George continues to live in Kendal at Ithaca. Because he needs more supervision and help than he had required until recently, two weeks ago it was decided that he should move from the assisted living part of Kendal to the skilled nursing section. Please pass on to those who keep the address listings for the department and the college of agriculture and life sciences that his address should be changed to 515 Savage Farm Drive, Ithaca NY 14850 (only the number changed - from 909 to 515).

Dad celebrated his 96th birthday on July 28, with some of his children, grandchildren, and great-grandchildren present. He is not quite totally blind, so has finally given up trying to read his mail (we have arranged for a woman to help him with that twice a month). He is still generally optimistic despite slowly increasing limitations.

We read parts of the periodic department newsletters to him, and he appreciates the continuing contact. Thank you for keeping in touch with him.

Donald Pfister, Ph.D. 1971

After 20 years, more less, as director of the Harvard University Herbaria, I have passed on the responsibility for the more than 5 million specimens in our collection. I teach mycology and plant related courses and have an active complement of students working on various topics in fungal systematics.

James L. Starr, Ph.D. 1976

I have been on the faculty at Texas A&M for 25 years, working mostly on nematodes affecting cotton and peanut. In 2006, I was honored to be elected a Fellow of APS. I will be in New Zealand from Aug 06 till Mar 07, where I will be a visiting scientist at the Grasslands Research Centre in Palmerston North, NZ. Marylou and I have three grown children and two grandchildren.

Michael Sulzinski, Ph.D. 1984

After graduation from the laboratory of Milton Zaitlin, Michael Sulzinski (Ph.D., 1984) worked for six years in the pharmaceutical industry on DNA-based diagnostics for human virus infections. In 1990, he joined the faculty on the Department of Biology at the University of Scranton (Pennsylvania), where he teaches undergraduate courses in virology, infectious disease and microbiology. In 2001,

he was promoted to full professor at Scranton, and he also has a private consulting practice in microbiology/virology.

Paul Tooley, 1982-85 Postdoc

Since 1985, I have been working for USDA-ARS here at Ft. Detrick, MD where I went upon leaving Cornell in 1985. I am working on sudden oak death caused by *Phytophthora ramorum*, and heading a project on emerging oomycete diseases. We have specialized containment facilities and greenhouses here in which we work on emerging diseases, many of which are not yet in the US. My son Scott who was born in Ithaca in 1983 is now a junior at the University of Maryland-College Park majoring in Philosophy. I also have two younger children (Sean and Eva, ages 10 and 8) who keep us pretty busy. It's great to see 'old' Cornellians at the APS meetings and Quebec City was a good one!

Frances Trail, Ph.D. 1991

Dear friends, I am still living in Michigan and working at MSU on *Fusarium* Head blight, which has taken over the majority of my program. Bill and I live on a small farm in Mason where he has a Native Plant Nursery and restoration business. Our daughter, Ruby, is seven. This fall I will be spending in the UM Medical School in Ann Arbor on sabbatical. I am looking forward to acquiring some new sills and taking a break from my current obligations. Besides, the famous Ringer Mann's Deli is in Ann Arbor.

Arnold T. Tschanz, Ph.D. 1978

After getting my PhD in 1978, our family spent 10 years in Taiwan. I was the Head of Plant Pathology at the Asian Vegetable Research and Development Center. My research was primarily on soybean rust, including epidemiology, host plant resistance and host range. We also worked on other disease problems of soybeans, mung beans, tomatoes and Chinese cabbage. We had programs operating in Thailand, Philippines, Korea, Mainland China and Africa.

I have been with the U. S. Dept. of Agriculture, Plant Protection and Quarantine since our return in 1988. Initially I was the Branch Chief for Importation of Propagative Plant Material. This included supervision of the National Plant Germplasm Quarantine Center in Beltsville, MD. I oversaw the design and construction of the 25 million dollar expansion of USDA's quarantine center which included a high containment pathogen research facility. Currently I am deeply involved in the program revision of Plants for Planting, including nursery stock, corn, wheat, rice, citrus, sugar cane, etc. If this ever gets finished, I may retire! I also serve as the Senior Import Specialist for the

Western Hemisphere for Plants for Planting.

Our daughter Carolyn headed back to Ithaca as soon as she got out of high school. She got her BS and MS at Cornell and worked for ten years doing research in the Division of Nutritional Sciences. She also got married and has three children. Our son Christopher stayed here in Maryland, both for college and to work. He is a senior computer programmer for a growing dot.com company in Hunt Valley, MD. He has managed to stay available. After a variety of part-time jobs overseas and then back here, Alicia started her own antique business in 1996. She specializes in glass and china. These days she sells primarily on eBay. She says it is the most frustrating thing she has ever done other than living with me for forty years!! Contact me at: Arnold.T.Tschanz@aphis.usda.gov, greenthumb@ureach.com

Jerry K. Uyemoto, Faculty 1968-77

I remember with fondness time spent in Geneva, NY. It was my first appointment to a university faculty. I was then the youngest and one of the oldest in 1977. In between we hired Aldwinckle, Abawi, Hunter, Hoch, Seem, Pearson and printed my expertise Burr. Lots of fond memories and good friends, especially Rosario Provvidenti. I am currently a research plant pathologist USDA-ARS located UC Davis.

Paul Vincelli, Ph.D. 1988

I continue to enjoy my position as Extension Plant Pathologist, as well as my colleagues, at the Dept. of Plant Pathology at the University of Kentucky. In addition to my commodity responsibilities, I have become very active in the area of molecular diagnostics, principally in the application of conventional and real-time PCR techniques for pathogen detection. I enjoy the intellectual challenge of learning new techniques, and I am gratified when it expands our capability to serve the public. A fond hello to all at Cornell!

C. Herb Ward, Ph.D. 1960

My 4.5 years at Cornell were life changing. I left feeling prepared for anything. That feeling has been validated many times through the years. George Kent, Walter Burkholder, Don Roberts (MS Advisor) and Bill Mai (Ph.D. Advisor) were my mentors at Cornell. What great luck!

I moved from Cornell with a wife, Barbara, and two children in the fall of 1959 to active duty in the Air Force at the School of Aerospace Medicine in San Antonio, TX – where I helped design and build space life support systems at the dawn of the space age. Six years later (1966) I moved to Rice University in Houston where I have just completed 40 years on the faculty.

I now hold a joint appointment in civil and environmental engineering and ecology and evolutionary biology; however, I taught general biology and plant physiology during my dearly days at Rice.

I formed an interdisciplinary Department of Environmental Science and Engineering in 1970, hired all of the faculty, and served as its chair for 22 years. In 1992 I formed a campus-wide Energy and Environmental Systems Institute and chaired it for 10 years.

I now spend all of my time in the School of Engineering in an endowed position as the Foyt Family chair of Engineering. My research for the past 30 years has focused on the biodegradation of toxic and hazardous wastes and remediation of hazardous waste sites.

I am now a Professional Engineer in the State of Texas and a Board Certified Environmental Engineer by the American Academy of Environmental Engineers.

I somehow lost my way (from Plant Pathology) after leaving Cornell. But I wouldn't trade my years at Cornell for anything!

Bill Wintermantel, Postdoc 1994-98

I'm a Research Plant Pathologist with the USDA-ARS in Salinas, CA where I have been since leaving Cornell. We are at the center of the vegetable industry here, and I call myself a salad virologist. My research program involves a combination of basic and applied studies on vectored viruses of vegetables and sugar beets* which can be a wide-ranging subject area. Primary interests include studies on vector-specificity of whitefly-transmitted viruses, biological and genetic factors influencing virus epidemiology, and research on soil-borne viruses of lettuce and sugar beet. My wife Ann and I have two boys, Michael, Age 9 (born in Ithaca), and Bryan, Age 7 (born here in California). Ann left her career in graphic design when Bryan was born and is now a substitute elementary teacher. My life mostly revolves around work and time with the family. We enjoy getting away to the less developed, more natural areas of California and the west whenever possible.

Paul Tooley

Since 1985, I have been working for USDA-ARS here at Ft. Detrick, MD where I went upon leaving Cornell in 1985. I am working on sudden oak death caused by *Phytophthora ramorum*, and heading a project on emerging oomycete diseases. We have specialized containment facilities and greenhouses here in which we work on emerging diseases, many of which are not yet in the US. My son Scott who was born in Ithaca in 1983 is now a junior at the University of Maryland-College

Park majoring in Philosophy. I also have two younger children (Sean and Eva, ages 10 and 8) who keep us pretty busy. It's great to see 'old' Cornellians at the APS meetings and Quebec City was a good one!

Lee A. Wymore, Ph.D. 1984

I am Program Director for Science and Mathematics at Indian Hills Community College in Ottumwa, Iowa. I teach biology, botany, microbiology, and philosophy of science. Joyce is a school secretary at Oskaloosa Elementary School. Our daughter, Meghan (who was born two weeks before we left Ithaca), is a 5th-year senior at Iowa State University, double-majoring in animal science and genetics. Our son, Mathew (who was born in Montreal while I was doing a post-doc at McGill University), is a sophomore at Iowa State majoring in computer engineering.

Xiao Ling Xuei, Ph.D. 1991

Dear Plant Path folks: I have been enjoying the change of my career to human molecular genetics and genomics at Indiana Univ. School of Medicine. At home I'm having great fun being a soccer mom to my 8-year old son, Saam, and visiting friends in our neighborhood. Thanks for the opportunity to share my life with you, and I enjoy reading the Plant Path Newsletters! Cheers!

Luz Marcela Yepes, M.S. 1987, Ph.D. 1990

I am a Research Associate at the Plant Pathology Department, Cornell-Geneva. I am coordinator with Herb Aldwinckle of the Colombian Coffee Genomics Initiative. This collaborative project was started in 2003 funded by the Colombian Ministry of Agriculture and this year by the US National Science Foundation. The participant Institutions are Cornell University, the University of Maryland, the Institute for Genomic Research

TIGR, Institut de Recherche pour le Developpement IRD in France, and the Colombian National Coffee Research Center CENICAFE. Our project includes training opportunities for Colombian scientists and is focused on the development of genomic tools for coffee, its major insect pest and its biological control agent.

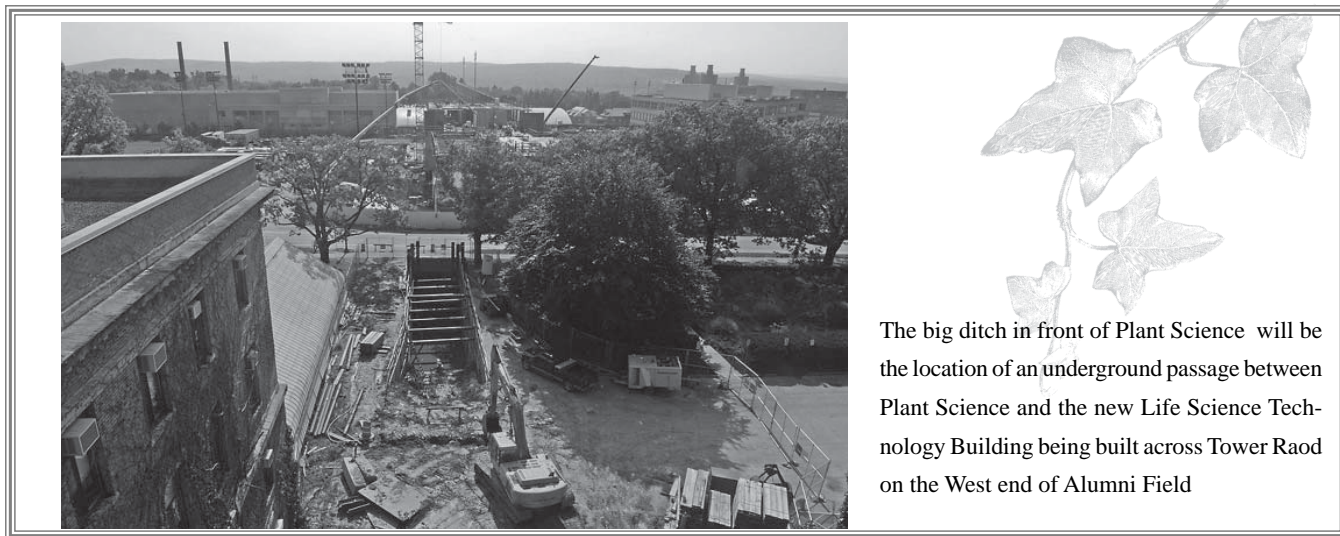
Eldon Zehr, Ph.D. 1969

I retired from Clemson University in 1998. About that time our oldest son Jeff gave up the peach and nectarine orchard he had been operating and Rosa and I took it over. We have been looking after about 1200 fruit trees since that time. This provides an opportunity to put into practice the results of research that we had developed at Clemson over the past 30 years or so. It is gratifying to find that the results do work in commercial practice!

Rosa and I are fortunate to enjoy good health. We travel a lot, visiting our large family, and occasional long trips in the U.S. and Canada.

Cathy Zumoff, Staff 1972-97

Thanks for getting in touch. For those of you who don't know me, I was a technician working mainly in phyto bacteriology research from 1972 until my retirement in 1997. During my 25 years in the department I worked in the labs of Carol Boothroyd, Bob Dickey, Steve Beer and Alan Collmer. For those of you who do remember me, you will be glad to know the suitcase you gave me at my retirement lunch has seen exhaustive use, accompanying me to countries on 5 continents. Every time I saw a vineyard in France or Germany, an orchard in South Africa, a field crop in New Zealand or Australia, a rice paddy in Vietnam or the tropical foliage of South American rain forest, I think of the department and all the great work you do.



The big ditch in front of Plant Science will be the location of an underground passage between Plant Science and the new Life Science Technology Building being built across Tower Road on the West end of Alumni Field

CONGRATULATIONS . . .

CONGRATULATIONS TO OUR NEWEST ALUMNI

Megan Kennelly	Ph.D. - Jan. 19, 2005
Yoshimi Barron	Ph.D. - May 29, 2005
Miao Liu - Ph.D.	Aug. 22, 2005
Chang-Sik Oh	Ph.D. - Aug. 22, 2005
Rebecca Bennett	Ph.D. - Aug. 22, 2005
Johan Kers	Ph.D. - Jan. 18, 2006
David Schmale	Ph.D. - Jan. 18, 2006
Monica Vencato	M.S. Jan. 18, 2006
Robert Abramovitch	Ph.D. - May 28, 2006
Jodi Creasap	Ph.D. August 21, 2006
Brendan Kelley	M.S. - Aug. 21, 2006
Hilary Mayton	Ph.D. Aug. 21, 2006

CONGRATULATIONS TO THOSE STUDENTS WHO HAVE PASSED THEIR 'A' EXAMS

(Thank you to Margaret Haus for compiling the following)

Joanne Morello	Nov. 1, 2005	Alan Collmer
Maryann Borsick	Nov. 22, 2005	Christine Smart
Laura Wakefield	Dec. 1, 2005	Robert Seem
Angela Nelson	March 17, 2006	George Hudler
Mei-Hsing Chen	June 12, 2006	Eric Nelson

MICHAEL WUNSCH NAAIC TRAVEL AWARD

Congratulations to Michael Wunsch who won a student travel award from the North American Alfalfa Improvement Council to attend and present his research at a joint Conference of the 40th North American Alfalfa Improvement Conference and the 19th Trifolium Conference in July in Bloomington, MN. Michael will present an oral paper on "Distribution and prevalence of brown root rot (*Phoma sclerotoides*) of forage legumes in the northeastern United States" and a poster on "Characterization of *Fusarium oxysporum* causing rapid wilt of birdsfoot trefoil in New York and Vermont."

MOREL CONTEST WINNERS, AND THE SCIENCE CABARET



The First Morel contest of 2006 yielded two new winners. The first yellow morel of the season (April 23, 2006) was found in a lawn in downtown Ithaca by Sarah Goodwin. She unwittingly won a contest she had never heard of when she brought the mushroom up to Kathie Hodge for determination.

As if winning were not itself enough, she endured the added glory of receiving her prize at the Lost Dog Pub. That's where Prof. Kathie Hodge, Photographer Kent Loeffler, and local Artist Tim Merrick were hosting an evening at the Science Cabaret entitled "A Curiosity Cabinet of Fantastical Fungal Freaks." Kent's beautifully macabre photos, Tim's curiosity-cabinet-inspired art, and Kathie's quirky fungal sensibilities played to a packed house. We discovered that science goes down better with a frosty yeast-generated beverage or two. Just a week later, long-time Cornell staffer Dawn Dailey O'Brien won the prize for the First Black Morel, which she found on April 30th. As always, a specimen went into the herbarium, and as usual, the rest were eaten after being sauteed in butter.



DEPARTMENTAL AND UNIVERSITY WEB SITES OF INTEREST

Plant Pathology Department	http://www.plantpath.cornell.edu/
Plant Disease Diagnostic Clinic	http://plantclinic.cornell.edu/Default.htm
Branching Out Newsletter	http://branchingout.cornell.edu/
CUP Herbarium	http://www.plantpath.cornell.edu/CUPpages/CUP.html
CUP Photograph Collection	http://odell.mannlib.cornell.edu/cupp/catalog/
Department Photo Lab	http://www.plantpath.cornell.edu/PhotoLab/Default.htm
Faculty web pages	http://www.plantpath.cornell.edu/Directory/Faculty.html
Glossary of Technical Terms	http://www.plantpath.cornell.edu/glossary/Glossary.htm
International Agriculture	http://www.plantpath.cornell.edu/About/InterAg.html
Christmas Tree Pests	http://www.plantpath.cornell.edu/trees/TreePests.html
Seed Potato Program	http://seedpotato.newyork.cornell.edu/
Vegetable Disease	http://vegetablemdonline.ppath.cornell.edu/Home.htm
Smokin' Doc Thurston's Greatest Hits	http://www.tropag-fieldtrip.cornell.edu/docthurston/smokinhome.html



THANK YOU!

We extend our appreciation to those who made financial contributions during the past year:

Alpine, The Care of Trees, Inc.
American Floral Endowment
American Wildlife Research Foundation
Arysta Lifescience
BASF Corporation
Bayer Corporation
Biosafe Systems, LLC
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