VOLUME 2 ISSUE 5 OCTOBER 2005

USDA • APHIS • PPQ

CPHST NEWS

Response to Hurricane Katrina

October 2005

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Inside this issue:

In response to Hurricane Katrina striking the Gulf Coast, a Field Team consisting of **Bill Benson**, **Jeff Pennington** and **Peter Petch** responded from Riverdale, Maryland on Monday, August 29, 2005, to assist affected APHIS personnel in the most impacted areas. The purpose and objectives of activating these field operations were to:

- Account for all affected APHIS employees.
- Determine employees' personal needs and provide assistance to employees in any way possible.
- Relay reliable information to management and others with a need to know.
- Determine needs and offer any needed assistance to lab directors and facility managers.
- Perform initial site entry and perform hazard/risk analysis. Perform initial damage assessment and report.

The Field Team arrived at the Analytical & Natural Products Chemistry Laboratory (ANPCL) in Gulfport, Mississippi, on Wednesday, August 31, 2005, and witnessed incredible sights of devastation once in the Gulf Coast region. An initial assessment indicated that the ANPCL facility had suffered significant damage, yet the fact that all buildings were still standing was encouraging since previous speculation led the team to expect much worse. The Field Team continued efforts already underway to account for employees by physically driving to their places of residence. Damage to homes ranged from minor damage to total loss. The employees contacted by Field Team members expressed much gratitude for their efforts and the limited amount of supplies that were made available to them. Once the Field Team finished accounting for employees, the focus turned to ensuring the employees had adequate supplies until disaster relief arrived, to determining initial damage estimates to the facility, and to working with ANPCL management and other responding personnel to initiate a repair & recovery process.

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Images from Gulfport, MS

Response to Hurricane Katrina (continued from previous page)

The Field Team and ANPCL management agreed to allow the Environmental Protection Agency (EPA) Emergency Response & Removal Branch to stage operations from the facility during the time of crisis. In return, the EPA ERRB agreed to supply the facility with needed fuel for backup generators and other supplies.

A small relief convoy from Moore Air Base in Texas arrived late Friday night with supplies and personnel to begin the initial phase of debris removal and facility repairs. Additional rebuilding phases will continue for some time to come before ANCPL is back to normal "pre-Katrina" operations.

While the lab was offline, analytical chemistry services were continued at the Otis Laboratory. However, the facility is coming back online now and most of the analytical services have been returned to the lab. Program activities are also resuming at the Imported Fire Ant Laboratory, which is co-located with ANCPL.

Damage to the facility will cost more than $300,000 to repair.

Jeff Pennington is an Industrial Hygienist for CPHST. He is based in Betlsville, MD.

Impact of Hurricane Katrina: Update from Ann-Marie Calcott

September 2005

As everyone knows, Hurricane Katrina has significantly impacted the Alabama, Louisiana and Mississippi Gulf Coast areas. I had evacuated to Pensacola, FL and saw the early news stories that led me and everyone else to believe that all of us living anywhere along the Mississippi coast had probably lost our homes, businesses, and other property. Communication into and throughout the impacted area was practically non-existent the first week, so I was extremely fortunate to occasionally be able to speak with **Kenny Peterman** (ANPCL employee and facility technician for the Gulfport PPQ facility) the day after the storm (Tuesday, Aug. 30). On Monday afternoon, Aug. 29, after the worst of the storm had passed Kenny made his way to the Gulfport facility, by using a chain saw to cut a "path" from his home to the office (ca. 6-8 miles). His initial report let us know that the facility was damaged but not flooded. I was also able to speak with **Doug Harris** in the first days after the storm and shared information on employees that I was able to gather by phone. During the first days after the storm, cell phones connected about 1 time for every 50 times you dialed (that may be an exaggeration, but it sure felt that way).

On Wednesday after the storm, I met up with **Jeff Pennington**, **Bill Benson** and **Peter Petch** (APHIS-PPQ safety folks) in Alabama, and went back to Gulfport to see what was left. In spite of the vast devastation and the news media reports, I was surprised to see many, if not most, of the structures north of the railroad tracks (about 0.25-0.5 miles from the Gulf in the Gulfport area) standing and inhabitable. By the end of the first week, most employees had been located and personal property damage was known (Jeff and his group primarily handled this). Out of 40+ employees that use the Gulfport facility (includes CPHST, PPQ, WS and state), one home was completely leveled, about 5 took on 1 to 10 feet of storm surge, and several others sustained significant roof damage with lots of interior water damage from rain. All others had some degree of roof or tree damage. The stories of dealing with insurance issues, federal aid, contractors, etc. could fill volumes and we will be dealing with these issues for many months, if not years.

For the Imported Fire Ant section, which consists of seven local employees, 2 had significant flooding, and the rest had minor to medium damage. The two employees with uninhabitable homes have taken advantage of the TDY opportunities to work in other areas temporarily; **Jennifer Lamont** is in New Braunfels, TX and **Shannon James** is in Memphis, TN. We are grateful to both the Eastern and Western Regional offices for offering these opportunities. We'll be a bit short handed in IFA for a while with 2 of the 6 field personnel on TDY, but the chemistry side of ANPCL has already helped us out with additional staff to keep up with current projects and will continue to do so as needed.

On the positive side, the Gulfport facility is up and running. We moved the PPQ, WS and state personnel from a significantly damaged building into the main building while repairs are undertaken. A few are sharing office space, but we're all getting to know each other better. Phone and computer lines are working, with only the occasional "all circuits busy" signal. We've had power at the facility since about 2 weeks after the storm (generator power prior to that) and got drinkable water about a month after the storm. All employees are well and working, and in the coming weeks and months, we will get back into a normal work flow. However,

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Images of the laboratory in Gulfport MS. Although the hurricane caused some damage to the facility, all the buildings were still standing.

Response to Hurricane Katrina: Update (continued from previous page)

after the manic rush of work the first few weeks after the storm, we all seem to be a bit slower these days, so in your interactions with all the employees here in Gulfport, please bear with us if we seem somewhat preoccupied.

The list of people to thank for their support throughout the storm recovery is endless and I'm sure I've forgotten someone and I apologize in advance to all I have forgotten. Personally, I would like to thank **Jeff Pennington**, **Bill Benson**, **Peter Petch**, **Alfred Garcia**, the hard-working Mission TX and Beltsville MD crews, and **Jimmy Moody** for coming to Gulfport so quickly after the storm. The support and supplies these people brought to make our personal lives a bit easier immediately after the storm, were invaluable, as was the manpower to begin cleaning up and repairing the facility. The support from Raleigh by **Drs. Gordh** and **Dowdy**, and the constant contact with **Doug Harris** and **Dean Denham** in the first days and weeks after the storm was also invaluable. Thank you to **Bonita Bowling** in Raleigh for doing our T&As for two pay periods, insuring we all got paid, and to those who resolved several outstanding travel issues for me personally and for others here in Gulfport. Communication with **Osama El-Lissy** and the PPQ Response and Recovery Team answered many administrative and resource questions that we were able to quickly pass on to employees (administrative leave, salary advances, leave pool, etc.). An EAP counselor came by one day and spoke with the employees. Thank you to everyone in the "outside world" who expressed your concerns regarding our welfare and your desire to help in some way. Your continued concern is greatly appreciated by all of us impacted by the storm. Finally, and most importantly, I would like to express my extreme gratitude to all the employees here at the Gulfport facility, CPHST as well as PPQ and WS folks, who helped out with a myriad of clean up chores to get us back up and running.

Ann-Marie Calcott directs the Soil Inhabiting Pests Laboratory in Gulfport, MS.

Ann-Marie at her desk in Gulfport.

For more information about how you can help the victims of Hurricane Katrina, visit:

USA Freedom Corps:
http://www.usafreedomcorps.gov/

American Red Cross:
http://www.redcross.org/

Eastern Region and CPHST Cooperation in Imported Fire Ant Control

October 2005

Since 2002, the PPQ Eastern Region has contracted with the Florida Department of Agriculture & Consumer Services Division of Plant Industry (FDACS-DPI) to rear Phorid Flies. These flies are biocontrol agents of the Imported Fire Ant (IFA). There are numerous species of Phorids that parasitize the IFA in its native range in South America. This project is an attempt to establish a complex of parasites that will help suppress populations of the IFA and give native species a chance to compete.

From the beginning, the Eastern Region has relied heavily on CPHST for support of this project. **Dr. Ken Bloem** of CPHST and **Ms. Anne-Marie Callcott** of the Soil Inhabiting Pests Laboratory have been involved in the planning and implementation of the project. Dr. Bloem has served as the technical contact for the cooperative agreement funding the rearing. Ms. Callcott has provided much of the operational support for the releases. Ms. Callcott's lab has identified and trained all of the cooperators in field release and population monitoring methods. Also, her lab in Gulfport developed a pilot project using PDA to geo-reference release sites and is mapping them. CPHST also hired a Methods Technician to work in the Phorid rearing facility to develop and implement better rearing and shipping methods.

The program has been very successful. We have been releasing Phorids in all states that are within the IFA quarantine. Data is beginning to come back showing that the first species we released, *Pseudacteon tricuspis*, is establishing and becoming naturalized. The DPI rearing facility is now transitioning to a new species, *P. curvatus*. This species promises to be more cold tolerant and may better establish at the current northern boundaries to slow future movement of the IFA.

A female Phorid fly prepares to attack a fire ant worker. (Photo courtesy ARS Center for Medical, Agricultural, and Veterinary Entomology).

Billy Newton is the Regional Program Manager for domestic programs for the PPQ Easter Region in Raleigh, NC.

Evaluation of a New Treatment Technology for Perishables

October 2005

Fruits and vegetables imported into the United States from South America require some form of treatment, usually methyl bromide, to combat pests of quarantine significance. The proposed phase-out of methyl bromide use has promulgated a new and exciting area of research on alternative treatments to methyl bromide, particularly in the pre-plant arena. Although post harvest alternatives research has traditionally lagged behind for a variety of reasons, progress is being made.

In the past year, CPHST scientists at the Otis PSDEL in Massachusetts have been testing a new post harvest treatment regime known as "metabolic stress disinfestation and disinfection", or MSDD. MSDD combines short term pressure/vacuum cycling with a fixed period of chemical exposure in a controlled atmosphere chamber. This technology has been in development at the University of California, Davis, under the direction of **Dr. Manuel C. Lagunas-Solar**. Emphasis was placed on evaluating the potential of a treatment for perishables that would approximate the current methyl bromide schedule in terms of overall duration and effectiveness.

The MSDD testing apparatus was designed and built at the University of California, Davis for use by CPHST. The system consists of a 12 liter Lexan vacuum chamber, a vacuum pump, an ethanol heater, and a PLC driven control station. Alternating vacuum and pressure cycles are combined with volatilized ethanol inside the chamber to stress, and ultimately kill target pests within the chamber. The entire treatment lasts approximately 75 minutes.

CPHST scientists have directed testing towards South American perishable pests of quarantine significance, or a suitable surrogate. Egg stage of *Copitarsia incommoda*, a moth pest of imported asparagus was chosen, along with immature crawling stages of two-spotted spider mite (*Tetranychus urticae*) and green peach aphid (*Myzus persicae*). In general, efficacy of MSDD against *Copitarsia* eggs was negligible, while treated immatures of two-spotted spider mites and green peach aphids were controlled at a much higher level (95% mortality minimum).

Further laboratory tests are planned, and positive findings may warrant eventual construction and testing of a commercial scale device.

MSDD testing apparatus.

Ron Mack is a Commodity Treatment Specialist for PSDEL, Otis ANGB, MD.

Methyl Bromide Recovery Systems

October 2005

Methyl bromide (MB) is a vitally essential component in PPQ's arsenal of phytosanitary treatments. Until suitable replacements are found, its quarantine and preshipment (QPS) uses remain exempt from provisions of the Montreal Protocol and Clean Air Act that required production phase-out in developing countries in January 2005. Under the exemption, PPQ supervises and monitors QPS fumigations involving nearly 700,000 pounds of MB annually. These fumigations could be jeopardized, however, in the wake of environmental regulations seeking to reduce MB's atmospheric emissions and eliminate potential risks to human health.

Typically, concentrations of MB maintained during QPS fumigations range from 4,000 to 25,000 ppm. Following fumigation, MB remaining in the enclosure is vented directly to the atmosphere where it could potentially endanger workers and bystanders (as well as reduce the protective effect of the ozone layer). One solution to this problem is deployment of recovery systems that trap or otherwise destroy MB following fumigation.

Recovery system technology is based on either trapping or chemical scrubbing. In the trapping system, fumigant gases are vented through an adsorbent cartridge, usually a bed of activated charcoal. When full, the cartridge can be recycled to the manufacturer for MB removal and bromine recapture. In the scrubbing system, fumigant gases are bubbled through a solution that chemically breaks down the MB molecule into water soluble, non-hazardous organics that may be disposed on site. Removal efficiencies range upwards of 90%, allowing only small amounts (250-500 ppm) of the fumigant to be released to the atmosphere.

Trapping technology is being used in California and in Texas at the DFW airport for a variety of commodity fumigations. Houston Air Services at Bush International Airport has recently built a state-of-the-art MB recapture/recycle unit to bring their fumigation emissions into compliance with environmental regulations. The system will reduce MB emissions to no more than 1.2 lb/hr, not to exceed 0.37 tons/yr. This will permit as many as 3 simultaneous without exceeding the maximum emissions rate. It is likely that this type of technology will become more important as health and environmental concerns associated with MB continue to increase.

Larry Zettler is the National Science Program Leader for AQI & Port Technology.

Methyl bromide recovery system cartridges containing activated charcoal. This system will soon be operating at Bush International Airport, Houston, TX.

Provisional Approval Process for the molecular diagnosis of *Phytophthora ramorum*

September 2005

In early 2004, it was discovered that a massive number of plants infected with the pathogen causing Ramorum blight (popularly known as Sudden Oak Death) were shipped from two California nurseries to most of the states in the U.S. Even though preliminary preparations for such an outbreak were formulated before this event, the massive shipping of plants to such a wide area was generally unexpected. The diagnostics that were used to confirm positive finds and ensure samples were negative, involved sophisticated molecular assays that had not yet become routine in general diagnostic laboratories.

The provisional approval process was started in November, 2004 to help process the vast number of samples generated by the *P. ramorum* emergency program. **Phil Berger**, the National Science Program leader for Molecular Diagnosis and Biotechnology (MDB) and his staff are leading the effort, which is administered by **Pat Shiel**, Staff Scientist for the MDB program. The purpose of this process is to engage the use of labs outside the USDA to enhance the capabilities of PPQ to provide timely and accurate determinations using PPQ protocols. The procedure used for this purpose was developed using information and concepts derived from workshops for general lab accreditation, and by engaging the expertise of the National Veterinary Services Laboratory (NVSL), which has been developing a similar program for molecular based diagnostics.

Process: The process that evolved is designed to evaluate and test outside labs to gain a reasonable assurance that the labs have the capabilities to make accurate and timely diagnostic determinations. It begins with the submission of documentation from each lab to make a preliminary evaluation that each lab has the minimum physical infrastructure and expertise for accurate molecular based diagnostics. The process continues with a site visit by a team of scientists with hands-on expertise of the validated PPQ molecular based diagnostics to inspect and further evaluate the lab facilities. The scientist lead for these inspections is Pat Shiel and he is always accompanied by a scientist from the National Plant Germplasm and Biotechnology Laboratory (NPGBL). Pat Shiel has a molecular biology and plant pathology background and has hands on experience in preparing laboratories for processing *P. ramorum* samples using PPQ protocols. The NPGBL scientists have extensive knowledge in molecular diagnostics, having processed almost all of the samples sent forward in last year's and this year's emergency program. In most cases a scientist outside PPQ, either from NSVL or ARS, is also included to provide a wider perspective based on their experiences to refine and improve the process. The inspectors generate a consolidated report to each lab on their findings and recommendations.

The provisional approval process was started in November 2004 to help process the vast number of samples that tested positive for *P. ramorum* that were sent to NPGBL for confirmation.

After successful completion of the inspection phase, a blind DNA proficiency panel is sent to each lab to evaluate the expertise of the diagnosticians and the capabilities of the lab. The proficiency panel is designed to mimic the samples received by the national lab for final determinations. Each lab is to process the samples in accordance with PPQ's protocols and provide timely determinations for evaluation by the national laboratory scientists. The panels are evaluated for accuracy and rigor in the processing and reporting of determinations. Passing of the proficiency panel allows labs to proceed and a Memorandum of Understanding is prepared to hold all parties responsible for providing accurate and timely diagnostic results.

Progress: In total, 20 labs have participated in the process. So far, six labs have successfully completed proficiency panel tests and/or have signed MOU's. Another six have been sent proficiency panels and are either processing these samples or are having them evaluated. The remainder of the labs has been inspected, reports have been either sent to them or, for the most recent inspections, are being collated and edited.

At this point the whole provisional approval process is being evaluated and further steps are being developed for labs to continue to make determinations. A future consideration of this process is to use the experience amassed by PPQ with this process to develop a more comprehensive general laboratory accreditation system for other pests of concern to PPQ using the capacities of labs that have been already evaluated, as well as additional labs that wish to participate. **Don Seaver**, a new CPHST Biological Science Technician, has been recently hired in part to facilitate this transition to a new phase of this process.

Pat Sheil works in the Director's office as the Staff Scientist for Molecular Diagnostics and Biotechnology National Program .

Emergency Response to Citrus Greening

October 2005

Citrus greening, also called Huanglongbing or yellow dragon disease, is one of the more serious diseases of citrus. This bacterial disease is thought to have originated in China in the early 1900s. The disease is primarily spread by two species of psyllid insects. One species, the Asian citrus psyllid, *Diaphorina citri*, has been present in Florida since 1998. The bacteria itself is not harmful to humans but the disease has harmed trees in Asia, Africa, the Arabian Peninsula, and Brazil. There are three strains of the bacteria, an Asian, an African version, and a recently described American strain discovered in Brazil.

The Asian strain, *Candidatus Liberibacter asiaticus* was found in Florida in early September, 2005. To respond to the problem, USDA, APHIS, PPQ and the Florida Department of Agriculture and Consumer Services deployed a Unified Command under the Incident Command Structure, and delimiting survey crews are working in southern Florida to define the extent of the problem. Personnel from the Florida Citrus canker program along with USDA PPQ personnel from all over the United States are working in survey teams of two to determine the extent of spread of Citrus Greening. Included on these teams are CPHST scientists **Greg Parra**, **Betsy Randall-Schadel**, **Bacilo Salas**, **Scott Weiman** and **Feridoon Mehdizadegan.** As the program continues, other CPHST personnel will likely rotate in as replacements.

Before going in the field, teams received training on defensive driving, heat stress, lessons learned from the Citrus Canker Program, Citrus Canker overview, dog safety, public relations, Citrus Greening science, and Citrus Greening operations and procedures.

Teams are assigned several citrus sites a day to inspect. Samples are collected from trees with suspect symptoms and rated into High, Medium, and Low suspect groupings to be sent for confirmation in Gainesville. **Lisa Ferguson,** a CPHST plant pathologist, was deployed to Gainesville to support this effort. Once confirmed, cutting crews are sent to positive properties to cut and remove citrus trees affected by Citrus Greening.

CPHST personnel on the ground report that seeing the Incident Command System in action and interacting with other PPQ personnel has been a great experience.

Greg Parra is a biological science technician for Director's Office Integrated Pest Management and Eradication National Science Program.

A tree is found infected with Citrus Greening.

New IPPC Enters Into Force

October 2005

In November 1997, the Twenty-ninth Conference of the Food and Agriculture Organization of the United Nations (FAO) unanimously approved a set of comprehensive and wide-ranging amendments to the International Plant Protection Convention (IPPC). The revised Convention, known formally as the New Revised Text, becomes legally binding for governments that are contracting parties to the IPPC on October 2, 2005.

There are currently 139 contracting parties to the IPPC, including all of the major trading nations except China. The U.S. was one of the original signatories to the IPPC in 1951 and ratified the original Convention in 1972. The U.S. formally accepted the New Revised Text of the IPPC in April 2001.

Negotiations on the New Revised Text were initiated by FAO in 1995 at the urging of the WTO and Regional Plant Protection Organizations, including the North American Plant Protection Organization (NAPPO). Bob Griffin, PERAL Director, led the US delegation in this process until 1997 when he was transferred to FAO as Coordinator for the IPPC and managed the Secretariat through the period when the New Revised Text was adopted and the Commission was established.

The purpose of the revision was to update phytosanitary concepts to better reflect modern practices and technologies, in particular as regards the use of international standards as the means to encourage harmonization envisioned by the World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement) which came into force for most WTO member governments in 1995. Key changes in the IPPC include the establishment of the IPPC Secretariat and the Commission on Phytosanitary Measures as the primary bodies responsible for managing the process that establishes international standards for phytosanitary measures (ISPMs) that are recognized by WTO Members.

To date, the IPPC has adopted 24 ISPMs and has numerous additional standards underway as well as global initiatives in the areas of information exchange and technical capacity building.

See https://www.ippc.int for more information.

Bob Griffin is the director of the Plant Epidemiology and Risk Analysis Laboratory and the acting NSPL for Risk and Pathway Analysis.

Molecular Diagnostics for the Mexican Fruit Fly

September 2005

The Mexican fruit fly, *Anastrepha ludens* (Loew), is a destructive pest of citrus, mango and other fruits. A native of Mexico, this economically important pest species infests fruit groves in southern Texas and has also been detected in California and Florida. Cooperative efforts between APHIS and state officials include control and eradication programs to deter the serious damage that may be caused by this pest. Furthermore, a program to limit the spread of this pest into the U.S. is established between APHIS and the Mexican government. Infestations that have occurred in the aforementioned states are likely due to human transport of infested fruit from Mexico. Determining the likely source of introduction will greatly assist in risk assessment and pathway analysis of this pest.

The Genetics unit of the CPHST-Pest Detection and Diagnostics Management Laboratory (PDDML) in Edinburg, Texas is exploring a wide array of molecular technologies for the advancement of identification methods of pests, including the Mexican fruit fly. The development and/or application of these new molecular techniques is enhanced by the formation of collaborations with scientists from other state, federal, industry and international agencies. Collaborations with ARS scientists have brought forth numerous collections of *Anastrepha* specimens from indigenous areas within Mexico and Central America. Development of molecular identification methods for the Mexican fruit fly involves two main goals: to develop and/or apply methods for the identification at the species level and at the population level.

Anastrepha ludens

At the species level, molecular identification can provide a means for accurate detection of larval forms of this pest intercepted at ports of entry, and it can serve to supplement taxonomic identification. In our laboratory, a species-specific SCAR (sequence characterized amplified region) molecular marker has been developed for the identification of this pest. The results of this particular assay produces a single DNA fragment for the Mexican fruit fly while producing no DNA fragments for closely related species of economic concern.

Other techniques developed and/or applied in our laboratory include PCR-RFLP (polymerase chain reaction-restriction fragment length polymorphism) and RAPD-PCR (randomly amplified polymorphic DNA). These PCR methodologies produce various DNA fingerprints which serve to differentiate several economically important species of *Anastrepha*.

Currently, there are no known methods for accurately identifying the Mexican fruit fly at the population level. Identification at this level would assist in determining the origin of pest interceptions and outbreaks. This, in turn, could provide insight in the pathway analysis of these introductions. In our laboratory, microsatellite DNA is being studied as a possible means to show variation among Mexican fruit fly populations from Mexico and Central America. Microsatellite DNA has been used in numerous population genetic studies because of its high degree of polymorphism which yields many genetic markers. The approach currently being applied to study the variation found in the microsatellite DNA is through ISSR-PCR (inter simple sequence repeat). Results obtained thus far for eight populations of this pest species show a high degree of polymorphism which is very promising towards the development of population genetic markers.

Further details of this work will be presented in November at the Entomological Society Meeting in Ft. Lauderdale, Florida.

Roxanne Garza, is a member of the genetics diagnostics team at PDDML, Edinburg, TX.

PPQ Eastern Regional Office Co-locates with CPHST

October 2005

In September 2005, the PPQ Eastern Regional Office moved into the Venture IV space with CPHST's Plant Epidemiology and Risk Analysis Laboratory in Raleigh. Space limitations became critical in the Venture II building, where PPQ ER had been housed, as all APHIS programs grew beyond initial projections.

The move has been positive for both organizations and has stimulated greater interaction and understanding among the staffs as well as a greater appreciation of each other's work. PPQ Eastern Region Staff are seeing what goes into the development of risk analysis activities, while CPHST staff have a greater understanding of operational programs and the importance of their work in supporting the safeguarding mission.

Venture IV Building, Raleigh, NC

CPHST Spotlight: Stephanie Kubilus

October 2005

Stephanie joined CPHST's Plant Epidemiology and Risk Analysis Laboratory in Riverdale, MD, in April, 2005, as a Biological Sciences Technician. Stephanie works as an administrative assistant and also assists in the development of Pest Risk Assessments. Stephanie was raised in Freeport, IL, and received a B.S. in Biological Sciences with a focus in Ecology from the University of Illinois at Chicago in May, 2004. While at UIC, Stephanie worked at a DNA Sequencing Laboratory and also assisted with research on Fabry Disease. Stephanie moved to Montana shortly after graduation (for reasons her mother would still like to know) and worked there for about a year before moving to Riverdale to join the USDA. She has a cat named Koobies and enjoys camping, hiking, backpacking, bowling, and working on her car in her spare time. She also volunteers for the Chesapeake Bay Foundation and teaches English to non-native speakers for CASA of Maryland. Stephanie is very excited about working for CPHST and is looking forward to a long career with the USDA.

CPHST Spotlight: Elizabeth Tweig

October 2005

Elizabeth received her BA in biology (with a heavy dose of anthropology) from Grinnell College in 2000. She joined CPHST's National Plant Germplasm and Biotechnology lab in January 2005, a few months after completing her MS in plant pathology at the University of Arizona in Tucson. She has worked an assortment of jobs including seed lab technician and the evening shift at a coffee house. In Tucson, her graduate research focused on work toward the development of a PCR-based diagnostic test for Texas root rot (*Phymatotrichum omnivorum*). At NPGBL she has been primarily supporting the *Ralstonia solanacearum* R3 B2 and Sudden Oak Death (*Phytophthora ramorum*) molecular detection programs. In her down time she likes to read, dabble in Celtic music, and plan snorkeling trips.

CPHST Spotlight: Richard Zink

October 2005

Rick joined CPHST as Director of the National Weed Management Laboratory in Fort Collins, Colorado in June 2005. He holds a B.S. in Horticulture and a M.S. in Plant Pathology from North Dakota State University and a Ph.D. in Plant Pathology from Kansas State University. Before CPHST, Rick was with Colorado State University as an Associate Professor of Horticulture and Manager of the San Luis Valley Research Center.

Rick is an accomplished plant pathologist and has been a key player in potato pathology research and seed potato certification in the US for over 30 years. Most recently, Rick has been heavily involved with PPQ in phytosanitary issues for potato trade from Canada to Uruguay. He is the current Chairperson of the North American Plant Protection Organization Potato Panel and for many years has been the primary technical support person on potato matters to PPQ PIM. He is now egger to apply his experience in plant pathology, management and trade to the National Weed Laboratory and CPHST in general.

Rick is married to Belinda, a fine architect and together they have two magnificent daughters, just finishing high school. When not at work, Rick enjoys hiking, fishing and camping with his family in the Colorado New Mexico high country.