

December 2012

From the Department Head



Lawrence E. Datnoff

Hello and Happy Holidays!!! I usually like to begin these newsletters very upbeat. I am a glass half-full type of person, but right now my meniscus is just below the line. Why, you may ask? Cathie Aime, our mycologist extraordinaire, left for Purdue University. Of course, we wish her well in her new position. But

now our department is without a mycologist, as well as someone to address the forest pathology needs of the state and the university. We have no one in our department that can do what she did. How can we have a department without a mycologist? Greater than 75 percent of plant diseases are caused by pathogenic fungi. We will lose out on a number of competitive grant possibilities without this position, and this will negatively affect the department, LSU A&M, the LSU AgCenter and our producers in both the short and long term.

On the positive side, our graduate student numbers are up to 30. This is the most we have had in the four years of my tenure as department head! They are truly making a difference. As you read through the newsletter, you will see that the students and faculty are engaged in academic and professional activities locally, regionally, nationally and internationally. They have won awards for travel, their scientific presentations or grants for their insightful ideas. They also have won awards for their scientific achievements

(continued on page 2)

The following article is from the LSU AgCenter publications website - *Louisiana Agriculture's 125 year Excellence in Research* issue Spring 2012.

<http://www.lsuagcenter.com/en/communications/publications/>

Lawrence Datnoff, head of the Department of Plant Pathology and Crop Physiology, diligently went through past issues of *Louisiana Agriculture* and other departmental documents to compose a guide to the many contributions of plant pathologists to the research history. His article is on the website.

History and Research Achievements in Plant Pathology and Crop Physiology

Department Chronology

The Department of Botany, Bacteriology and Plant Pathology was created in 1924 by combining faculty from the College of Arts and Sciences and the Louisiana Agricultural Experiment Station. Claude W. Edgerton was named the first head, and the department grew from three to 13 faculty members by 1930. In 1950, St. John P. Chilton became the head, and with increased research and teaching responsibilities, the department grew to a faculty of 28. The department was divided in 1962 to form a new Microbiology Department and the Department of Botany and Plant Pathology. In 1970, the Department of Botany was formed and placed in the College of Arts and Sciences, while the Department of Plant Pathology was placed in the newly formed Louisiana State University Agricultural Center (LSU AgCenter) with research administered by the director of the Experiment Station and teaching administered by the dean of the College of Agriculture. After Dr. Chilton retired, Weston J. Martin became head (1977-1982), and the name of the department was changed to its current name of Plant Pathology and Crop Physiology to more accurately reflect

(continued on page 4)

and outreach. Clearly, all are engaged in understanding and solving plant disease or plant physiological problems for our producers in Louisiana and beyond, while contributing to the scientific body of knowledge. These outstanding efforts are attracting others to come and learn about what we do, and in so doing, we learn about

their approaches to understanding plant diseases and their management. This dialogue and faculty to faculty, faculty to student and student to student interactions lead to cooperative research and cooperative grant opportunities, while infusing the department with enthusiasm and excitement! Happy reading and Geaux PPCP!!!

Table of Contents

From the Department Head	1
History and Research Achievements in Plant Pathology and Crop Physiology	1
Watch out for new ornamental plant and lawn diseases	7
Faculty Research Projects	9
Dr. Jeff Hoy awarded the 51st St. James Parish Outstanding Service Award	9
Graduate Student Participation in Research Projects.....	10
Significant Accomplishments by Faculty.....	11
New Collaborations with Other Departments, Universities or Agencies.....	12
Subbarao presents seminar	12
Faculty Awards and Honors.....	13
Graduate Student Awards and Honors.....	14
Ganiger selected as speaker for 2012 I. E. Melhus graduate student symposium ...	14
Faculty Publications - Refereed	15
Graduate Student Publications - Refereed	17
Faculty Publications - Non-Refereed	18
International Service Award goes to Datnoff	18
Presentations, Webinars and Posters by Faculty.....	19
Washington da Silva wins American Phytopathological Society Travel Award	19
Submit diseased plants to the Plant Diagnostic Center.....	21
The LSU Department of Plant Pathology and Crop Physiology is well represented at the 2012 SD-APS meeting.....	22
Presentations, Webinars and Posters by Graduate Students/Research Associates..	23
Melanson awarded competitive USDA AFRI-NIFA Pre-doctoral Fellowship Grant ..	24
Alumni news.....	25
PPCP faculty and students attend 2013 APS National Meeting.....	26
Meetings Attended by Faculty.....	27
Meetings Attended by Graduate Students	28
2012 Plant Disease Management Guide popular AgCenter publication	28
Visiting Scientists/Students	29
New Graduate Students Fall 2012	29
Chanda receives his Ph.D. degree	29
Rush wins Fulbright Award.....	30
Francis and Fountain take top honors at APS-SD Meeting	30
Warr wins American Phytopathological Society Travel Award	30

HELP US TO ENSURE EXCELLENCE IN PLANT PATHOLOGY & CROP PHYSIOLOGY

While the Department receives monetary support for core research/extension programs (LSU AgCenter) and its teaching program (LSU College of Agriculture), these funds are not sufficient to provide the resources to move our programs to the next level of performance, especially with the onerous budget cuts we have experienced in the past three years.

Private financial support is becoming a vital resource to enhance existing programs and begin new initiatives. Please consider contributing to help support our programs.

I want to support the Plant Pathology & Crop Physiology Department by donating \$_____ to be used for:

- Plant Pathology & Crop Physiology Graduate Student Invited Lecturer Fund
- Plant Pathology & Crop Physiology Excellence Fund
- Dr. C. W. Edgerton Memorial Fund
- Dr. Weston J. Martin Fellowship Fund

Checks can be made to the LSU Foundation and indicate the Department of Plant Pathology & Crop Physiology on the memo line.

For credit card contributions:

Type of credit card Visa MC AmEx Discover

Expiration Date _____ Card# _____

Mail to: LSU AgCenter

Department of Plant Pathology & Crop Physiology
302 Life Sciences Bldg.
LSU Campus
Baton Rouge, LA 70803

For more information contact:

Lawrence E. Datnoff

Department Head

ldatnoff@agcenter.lsu.edu

or 225-578-1366

(continued from page 1)

the disciplines of the faculty residing within the department. In 2002, the weed science program was moved to the Department of Agronomy while the extension plant pathology faculty and programs were merged into the Department of Plant Pathology and Crop Physiology. Other department heads that have served are the following: David R. MacKenzie (1983-1989), John B. Baker (1989-1992), Johnnie P. Snow (1992-2002), Gerald T. Berggren (2002-2008) and Lawrence E. Datnoff (2008-present). From the 1980s to present, the number of faculty positions has ranged from 16 to 25, and currently equals 15.

Graduate Students

From 1924 to 2011, more than 640 M.S. and Ph.D. degrees were granted, and many former graduate students were placed in important academic and industry positions. These positions have included post-doctorates, assistant, associate and full professors with universities (Auburn University, Rice University, Southern Illinois University, University of California-Davis, University of Alabama, University of Florida, University of Georgia, University of Kentucky, Iowa State University, Harvard Medical School, Mississippi State University, North Carolina State University, Oregon State University and others), research scientists with government agencies (USDA-ARS, Florida Division of Plant Industries, Louisiana Department of Agriculture and Forestry, Virginia Department of Agriculture and others) as well as private industry (Bayer, Dupont, Horticultural Research International, Monsanto, PetoSeed Co., Syngenta and others). In Louisiana, graduates hold positions with agricultural chemical industries, crop consulting companies, and as faculty and staff members with the LSU AgCenter.

Mission

Since 1924, the overarching mission of the Department of Plant Pathology and Crop Physiology has been to advance and disseminate knowledge about the microorganisms and abiotic stresses that cause plant diseases and their management in agronomic and horticultural crops, as well as coastal plants, grown in Louisiana. Plant diseases and environmental stress seriously limit crop production in Louisiana. New diseases continue to appear because of changes in varieties

and cultural practices and genetic shifts in existing populations of pathogens. In addition, new diseases are introduced into Louisiana from other states and countries. Faculty have led efforts to improve the management of diseases caused by plant pathogens (fungi, bacteria, viruses and nematodes) and environmental stress (temperature extremes, excess moisture, mineral toxicities) through programs of research, extension and teaching related to Louisiana commodities that include corn, cotton, fruit crops, grain crops, ornamentals, rice, soybean, sugarcane, sweet potato, turfgrass, vegetable crops and coastal plants.

Faculty Achievements

A chronological history of research achievements by faculty are impressive and include the following:

Claude W. Edgerton (1908-1955) systematically catalogued diseases of crops in Louisiana including sugarcane, tomatoes, cotton, other vegetable crops and fruits. His research on *Glomerella* (+ and – strains) pioneered work on fungal genetics. His book, *Sugarcane and Its Diseases*, published by LSU Press in 1955, was the first comprehensive treatise on this subject. Antonios G. Plakidas (1927-1960) discovered that the widespread degeneration disease of strawberries was viral in nature. In 1943, he published a bulletin entitled *Diseases of Some Vegetable and Fruit Crops and their Control*. Thirty thousand copies were distributed in Louisiana, across the United States and in many foreign countries. Dr. Plakidas also authored the 1964 LSU Press book, *Strawberry Diseases*.

In the 1940s, Irvin L. Forbes conducted extensive research on sugarcane diseases, screening many varieties for disease resistance in coordination with the sugarcane breeding program. Many of his findings were published in LAES bulletins. Charles F. Moreland developed methods of photoperiod control to induce flowering of sugarcane under Louisiana conditions during the 1950's, and this discovery was instrumental in the development of the sugarcane breeding program. Louis Anzalone and Elias D. Paliatsias (1960s/1970s) conducted the sugarcane breeding program for many years in which seed and seedlings were produced and then seedlings screened for resistance to *Sugarcane mosaic virus*.

In the late 1940s and early 1950s, Weston J. Martin advanced the understanding of sweet potato diseases. He was the first to demonstrate that soil rot of sweet potato was caused by *Streptomyces ipomoeae*. He further found that circular spot was caused by *Sclerotium rolfsii* and helped determine the etiology of bacterial root and stem rot, caused by *Erwinia chrysanthemi*. Norman L. Horn initiated fungicide testing on soybeans in the early 1970s. This research led to the general use of fungicides on soybeans in Louisiana, which was responsible for large increases in soybean yields.

Harry E. Wheeler (1950s/1960s) authored numerous papers in the areas of fungal genetics and physiology of parasitism. He was known for his research on sexuality in *Glomerella* and on the causal role of the pathotoxin victorin. George D. Lindberg in the 1960s provided the first evidence of a transmissible agent (virus) in the fungi. Dr. Lindberg also discovered a bacterium that produced the antifungal antibiotic tropalone. Wray Birchfield in the 1960s developed management strategies, such as nematicides and host resistance, against the reniform nematode on cotton. John P. Hollis in the 1960s/1970s showed the importance of hidden problems in rice being caused by nematodes (*Hirschmanniella* and *Criconebella*). In 1961, James B. Sinclair developed sanitation methods to avoid the transmission of *Tobacco mosaic virus* in tomato and compared methods of delivering fungicides for controlling “sore-shin,” caused by *Rhizoctonia solani*, in cotton.

Gordon E. Holcomb (1965-2006) discovered, identified and described many new ornamental plant diseases, which included centipedegrass mosaic (virus), coleus mosaic (virus), web blight of rosemary, Guignardia leaf spot of camellia, Amphobotrys blight of poinsettia and many others. He also described the new fungus *Alternaria (Nimbya) alternantherae* from alligatorweed and showed that it also infected ornamental Amaranthaceae members. Dr. Holcomb identified Sclerotinia blight as a serious disease in wild populations of a native Trillium species and developed a host list of 145 species for the pathogenic green alga, *Cephaleuros virescens*, many of which were new to the continental United States.

Kenneth S. Derrick (1970-1987) developed the Serologically Specific Electron Microscopy (SSEM) method, which was a major breakthrough for identifying and screening for viruses. Lowell L. Black (1968-1996) demonstrated the use of reflective plastic mulch for reducing insect and virus problems in vegetable production. In the late 1970s, Kenneth E. Damann and his student showed the newly discovered bacterial cause of ratoon stunting disease produced pectinaceous xylem plugging gels in sugarcane that supported microcolony development of the bacterium.

Milton “Chuck” Rush (1970-2009) initiated a comprehensive fungicide testing program for rice that led to the registration of Benlate 50WP, demonstrating the potential of fungicides for economically controlling fungal rice diseases. He identified and reported new rice diseases in Louisiana and the United States including the causal agents of rice panicle blight, *Burkholderia glumae* and *B. gladioli*.

In 1974, H. Kenneth Whitam started the first Plant Disease Diagnostic Clinic in Louisiana and served as its first diagnostician. Clayton A. Hollier (1982-present) identified new diseases in ornamentals; determined yield losses of important diseases in rice, sugarcane and wheat; and found hybrids with good levels of tolerance to southern corn rust. In addition, he educated county agents and farmers in how to recognize plant diseases and the importance of integrated pest management in reducing environmental harm. In 2005, he initiated the first soybean sentinel plots to determine the presence and spread of soybean rust in Louisiana and surrounding states.

Christopher A. Clark (1977-present) helped to develop 11 disease-resistant sweet potato varieties. He elucidated the etiology of sweetpotato chlorotic leaf distortion, caused by *Fusarium denticulatum*, an unusual epiphytic pathogen. He also demonstrated that viruses reduce sweet potato yields by 25 to 40 percent and developed a program for providing virus-tested tissue culture plants to the LSU AgCenter foundation seed program, providing farmers with an option for healthy “seed”.

Since 1978, the Nematode Advisory Service, under the supervision of Charles Overstreet, has processed more than 40,000 nematode samples

saving producers millions of dollars in production costs because of better nematode management strategies. Since 2004, Dr. Overstreet has demonstrated the effectiveness of site-specific application of nematicides to manage nematodes in cotton.

In 1984, Marc A. Cohn's group reported the first evidence for gaseous nitrogen oxides as seed dormancy-breaking agents; in studies from 1983-1992, the Cohn lab established the first quantitative structure-activity relationships (QSAR) for seed dormancy-breaking chemicals and showed that cell acidification was a common response, indicating that dormancy was regulated by cell pH.

Raymond W. Schneider's group (1984-present) was instrumental in developing the use of nitrate utilization mutants for testing vegetative compatibility between strains of fungi and for assessing genetic diversity within and among populations of plant pathogenic fungi. This test has been used worldwide to establish the clonal nature of *Fusarium* spp., and it provided conclusive evidence that the *Cercospora* leaf blight pathogen of soybean is undergoing genetic recombination. In 2004, the first discovery of soybean rust in Louisiana and the United States was made by Dr. Schneider. He, along with P. Boyd Padgett, was instrumental in developing commercial fungicide protocols for managing this disease in Louisiana and many other states.

In 1989-1993, Dr. Black and Rodrigo Valverde (1988-present) conducted field research on the epidemiology of tomato spotted wilt virus on tomato and pepper and found new overwintering hosts and vectors for this virus. In 1990s-2000s, Dr. Valverde discovered techniques for studying dsRNA plant viruses, and these methods are being used worldwide for the diagnosis and characterization of these viruses.

In the 1990s, Mary M. Musgrave's space biology program had plants complete their life cycle (seed to seed) in microgravity on several space shuttle missions and on the Russian Mir Space Station. Norimoto Murai and his group (1990-1993) conducted the first genetically modified rice field trial in the world at the Rice Research Station with USDA approval. They demonstrated that agronomic traits of GM rice were identical to non-GM rice. From 1995 to 1997, Murai and his

group produced transgenic rice plants with bean/pea storage proteins thus improving the rice seed nutritional quality.

Jeffrey W. Hoy and his group (1983-present) were instrumental in reducing the incidence of ratoon stunting disease, the long-time most important disease of sugarcane, from 51 percent in 1997 to less than 1 percent. This was accomplished through a public and private sector partnership to produce healthy planting material for farmers and the establishment of the Sugarcane Disease Detection Lab to provide disease monitoring. Hoy's group also assessed the threat posed by incursions into Louisiana during the past 30 years by major sugarcane diseases, including smut, leaf scald and yellow leaf. They developed appropriate management practices to prevent severe yield losses.

Kenneth E. Damann and a student showed that a 2007 population of *Aspergillus flavus* revealed specificity in the soil population with some VCG's appearing only in soil and others capable of infecting corn kernels. Also, the kernel infecting isolates were predominantly two VCG's, one that produced very low aflatoxin and the other produced high aflatoxin, suggesting that the low toxin producing strains were acting as a natural biocontrol agent to limit aflatoxin contamination of corn.

In 2010-2011, Edward C. McGawley and Charles Overstreet were the first to document reproductive and pathogenic variation in geographic isolates of reniform nematode on cotton and soybean in the United States. Zhi-Yuan Chen (2005-present) has identified several soybean lines to be moderately field resistant to *Cercospora* leaf blight of soybeans, as well as two African corn lines with excellent aflatoxin resistance. Don M. Ferrin (2005-present) has developed and presented educational materials statewide on plant pathogens, diseases they cause and their management to stakeholders in the horticultural industries. He has trained extension field faculty in plant disease identification and management, and he has developed educational materials for commercial producers.

M. Catherine Aime (2007-2012) has discovered, described and published one new class (Tritirachiomycetes), one new genus

(*Guyanagaster*) and 46 new species of fungi. Raghuwinder "Nick" Singh (2007-present) diagnoses thousands of plant samples yearly submitted by residents of Louisiana including homeowners and commercial clients since 2010, when the Plant Diagnostic Center was established. Jong Hyun Ham's (2007-present) laboratory group has discovered several new genetic elements of *Burkholderia glumae*, the causal agent of panicle blight of rice important for bacterial virulence. This achievement has provided new insights on disease etiology and new approaches for disease control.

The Future

This is only a brief summary of faculty accomplishments in the Department of Plant Pathology and Crop Physiology. Clearly, the programs in this department have fulfilled and continue to fulfill the institutional role, scope and mission of the LSU AgCenter by generating basic knowledge and applied solutions to plant diseases and abiotic problems of agricultural industries that are critically important to the economy of Louisiana while educating future scientists through our M. S. and Ph. D. programs. The disease-conducive environment in Louisiana and the latest incursions of new pathogens and pathogen-vectors into the state make it clear that plant diseases are, and will continue to be, one of the primary limiting factors in crop production (e.g., Asian soybean rust, citrus greening, bacterial blight of rice), in the home and urban landscapes (daylily rust), and in the environment (sudden oak death). Each time a new pathogen arrives and a new disease outbreak occurs in Louisiana, it is the Department of Plant Pathology and Crop Physiology that has provided the leadership for generating basic knowledge and applied solutions for managing these diseases, as well as environmental stresses.

The following article is from the LSU AgCenter publications website - *Louisiana Agriculture* in the Winter 2012 issue. The photos were added for this PPCP News.

<http://www.lsuagcenter.com/en/communications/publications/>

Watch out for new ornamental plant and lawn diseases

Donald M. Ferrin



The introduction into Louisiana of new plants produced in other regions provides an opportunity not only for the introduction of new diseases, but also new hosts for pathogens already in Louisiana.

Furthermore, ever-changing weather patterns continue to influence the occurrence of endemic diseases of ornamentals and lawn grasses across the state. For instance, Louisiana experienced an unusually large number of cases of large patch (also referred to as brown patch), caused by the fungus *Rhizoctonia solani*, in home lawns during the extremely wet weather in July 2011, even though it was much warmer than usually associated with this disease.

Following are a few noteworthy developments of ornamental plant diseases:

A new bacterial leaf spot disease of Knock Out and Double Knock Out roses has been reported from Florida, but it has not yet been observed in Louisiana. The pathogen involved is a new strain of *Xanthomonas*, which is also pathogenic on Indian hawthorn (*Raphiolepis indica*). It is a problem on roses primarily during propagation and nursery production where the plants are subjected to overhead watering that promotes the spread of the bacterium and subsequent disease development. Symptoms include small black lesions with well-defined margins that are often delimited by the leaf veins. These lesions are generally found along the margins of the leaves. The control of bacterial diseases still relies primarily on the use of copper-based fungicides. Identifying and testing potential new products for their control continues to be a high priority of the national IR-4 Project, which is funded through the U.S. Department of Agriculture and based at Rutgers University in New Jersey.

The project's goal is to facilitate the registration of needed pest management technology for specialty crops, including horticultural crops.

Downy mildew of impatiens (*Impatiens walleriana*), caused by the fungal-like pathogen *Plasmopara obducens*, has been observed sporadically in the northeastern and north central United States since 2004 and could make an appearance in Louisiana at any time. This disease develops during periods of cool, wet weather and is primarily restricted to the foliage. Initial symptoms are the yellowing of infected leaves, which eventually drop off leaving only bare stems. The grayish-white growth of the pathogen that is found on the lower surface of affected leaves is a good diagnostic feature. Should you suspect that you have downy mildew on your impatiens, please send samples to the LSU AgCenter Plant Diagnostic Center for confirmation.



Fusarium wilt of Canary Island date palms (*Phoenix canariensis*) has been found in several locations in New Orleans. This disease is caused by the fungus *Fusarium oxysporum* f. sp. *canariensis* and is almost always fatal. It may have been

introduced into the state when previously infected palms were brought in and installed in landscape plantings. Once established, the pathogen is then spread from infected to healthy trees during regular pruning to maintain the classic pineapple shape of the crown.

Armillaria root rot, caused by the fungus *Armillaria tabescens*, has recently been implicated in the decline of older plantings of landscape roses in Louisiana. Like other species of *Armillaria*, this pathogen is normally associated with hardwood forests and is found in urban landscapes where previously wooded areas have been cleared for development. It is also commonly associated with the roots of oak trees from which it may spread to other more susceptible hosts, such as roses. Little can be done to control this disease once it becomes evident and no fungicides are available for its control. One management practice that may help is to avoid irrigating and mulching around the base of the plants as the moisture favors pathogen growth. Instead, soil and mulch should be removed from the area of the root collar to promote drying, which helps to prevent further growth of the pathogen.



Faculty Research Projects

Zhi-Yuan Chen

Reducing Aflatoxin Contamination of Maize through Understanding Its Interactions with *Aspergillus flavus*

Enhance Soybean Production through Understanding Its Interactions with *Phakopsora pachyrhizi* and *Cercospora kikuchii*

Christopher A. Clark

Biology and Management of Economically Important Sweetpotato Diseases

Marc Cohn

Mechanisms of Recalcitrant Seed Death of *Spartina alterniflora* (smooth cordgrass);

Mechanisms of Seed Dormancy in Red Rice

Kenneth Damann

Biocontrol of aflatoxin in corn and biology of *Apegillus flavus*

Jong Hyun Ham

Molecular genetics and genomics of *Burkholderia glumae*

Genetics of rice disease resistance to bacterial panicle blight and sheath blight

Development of disease management strategies for bacterial panicle blight and sheath blight of rice

Clayton A. Hollier

Yield losses due to foliar pathogens of corn.

Yield losses associated with *Cercospora janseana* in rice.

Edward C. McGawley

LAB94034 Improved Management of Plant-Parasitic Nematodes Through Modern Diagnostic Tools and Increased Use of Host Resistance

LAB04025 Identification, Biology, and Management of Agriculturally Important Plant Parasitic Nematodes

Charles Overstreet

Site-specific management of Southern root-knot and reniform nematodes in cotton

Raymond W. Schneider

Biology and Management of Soybean Diseases in Louisiana

Raghuwinder Singh

Extension Project -Plant Diagnostic Center

Rodrigo A. Valverde

Molecular characterization of dsRNA viruses infecting plants and fungi

Dr. Jeff Hoy awarded the 51st St. James Parish Outstanding Service Award

On August 8, 2012, the 51st St. James Agricultural Tour Outstanding Service Award was presented to Dr. Jeff Hoy, professor of plant pathology,

Department of Plant Pathology and Crop Physiology,

LSU AgCenter,

to honor his outstanding efforts to the sugarcane industry. Dr. Hoy was presented this award because of the positive impact that his research and outreach efforts have had in addressing important

disease problems of the sugarcane industry that included brown rust, smut, leaf scald, yellow leaf virus, mosaic, RSD and, most recently, orange rust. Approximately, 176 sugar industry personnel, including St. James growers, researchers from the LSU AgCenter, USDA, American Sugarcane League and local sugar mill personnel attended the event.



Graduate Student Participation in Research Projects

Mavir Carolina Avellaneda

Assessment of inoculation methods to screen for resistance to brown rust of sugarcane

Eduardo Chagas

Biology and Management of Soybean Diseases in Louisiana

Ruoxi Chen

The genetic and genomic study of virulence system in *Burkholderia glumae*.

Jake Fountain

Reducing Aflatoxin Contamination of Maize through Understanding Its Interactions with *Aspergillus flavus*

Mala Ganiger

Enhance Soybean Production through Understanding Its Interactions with *Phakopsora pachyrhizi* and *Cercospora kikuchii*

Fabio Herrera

Molecular characterization of dsRNA viruses infecting plants and fungi

Hari Sharan Karki

Phylogenetic and molecular genetic studies of natural avirulent and virulent strains of *Burkholderia glumae*.

Genetic and biochemical studies of pigments production in *Burkholderia glumae*.

Functional characterization of novel regulatory systems for virulence mechanism in *Burkholderia glumae*.

Genetic studies to understand and improve rice disease resistance to bacterial panicle blight and sheath blight.

Genetic mapping of disease resistance.

Breeding disease resistance lines.

Whole genome sequencing of LM-1, a mutant derivative of cultivar Lemont and Lemont by next generation sequencing.

Surasak Khankhum

Molecular characterization of dsRNA viruses infecting plants and fungi.

Rebecca Melanson

Characterization of a novel negative LysR-type transcriptional regulatory factor of toxoflavin production in *Burkholderia glumae*, the causal agent of bacterial panicle blight of rice.

Surendra Osti

Bacterial disease management in Rice.
Role of small RNA on production of toxins in *Burkholderia glumae*.

Josielle Rezende

Enhance Soybean Production through Understanding Its Interactions with *Phakopsora pachyrhizi* and *Cercospora kikuchii*.

Tomas Rush

Biology and Management of Soybean Diseases in Louisiana.

Bishnu Kumar Shrestha

Genetic mapping of quantitative trait loci (QTL) associated with partial resistance to bacterial panicle blight and sheath blight in rice.

Biological and chemical methods to suppress bacterial panicle blight and sheath blight in rice caused by *Burkholderia glumae* and *Rhizoctonia solani*, respectively.

Yi Wang

Member of Cohn lab and received his M.S. 12/2011 and passed his general examination in 1/2012.

Brian Ward

Biology and Management of Soybean Diseases in Louisiana.

Déborah M. Xavier

Site-specific management of root-knot and reniform nematodes.

Zhi-Yuan Chen

We are in the process of demonstrating whether fungal genes can be used for plant disease control in corn and soybean using host induced gene silencing strategy.

Chris Clark

Along with co-editors Don Ferrin, Tara Smith and Gerald Holmes, and other authors including Charles Overstreet and Rodrigo Valverde, we have completed the second edition of The Compendium of Sweetpotato Diseases, Pests and Disorders. It should be available by the end of 2012.



Marc Cohn

Cohn lab discovered a suite of 30 proteins associated with the ability of seeds to survive desiccation; *in silico* modeling indicates that the messages for these proteins are regulated by a small group of transcription factors.

Kenneth Damann

Awarded AMCOE NCGA grant funding on biological control of aflatoxin contamination of corn.

Received Louisiana Soybean and Grain Research and Promotion Board funding for aflatoxin biocontrol.

Organized and spoke at a session on biological control of aflatoxin at the NCGA's 2012 Corn Utilization Technology Conference in Indianapolis, Ind., June 4-6, 2012.

Lawrence E. Datnoff

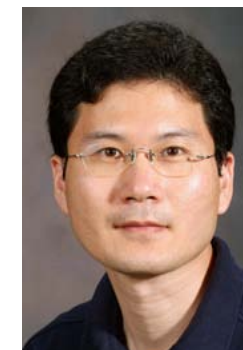
APS International Society Relations Committee, 2012.

Chair, LSU Faculty Senate International Education Committee, 2011-2012.

APS Caribbean Division Forum Representative, 2011-2014; Chair, 2012.

Jong Hyun Ham

Discovered the *tofM* gene, a new genetic element required for the virulence of the rice pathogenic bacterium *Burkholderia glumae*.



Significant Accomplishments by Faculty

Identified potential biological control agents for controlling bacterial panicle blight and sheath blight of rice.

Sequenced and characterized the whole genome of a virulent strain of *Burkholderia glumae*.

Developed more than 20 rice lines that show high levels of partial disease resistance to bacterial panicle blight and sheath blight, which can be used for the further development of new commercial rice varieties.

Edward C. McGawley

With Dr. Yuko Takeuchi (Univ. of Kyoto, Kyoto, Japan Terrestrial Ecology Laboratory) as first author, wrote and secured grant from Japanese Forestry Society to support a 3 month visit (May-July) to my lab in 2013.

Raymond W. Schneider

Demonstrated that certain minor elements, when applied as foliar sprays, greatly reduce severity of *Cercospora* leaf blight (CLB) and soybean rust. In the case of CLB, specific concentrations of iron suppress production of the toxin cercosporin. Interestingly, Al, applied as an acidic solution, suppressed soybean rust and possibly CLB. This work is being funded by Brandt Corp. The work of Tomas Rush for his M.S. degree showed that currently used primers and probe for the soybean rust pathogen also detect other *Phakopsora* species, and the use of real-time PCR assays based on these primers has led to false positives. These findings led to a generous grant from the United Soybean Board to examine a large international collection of isolates in order to design specific primers for *Phakopsora pachyrhizi*. We continued to optimize fungicide application strategies for both soybean rust and CLB. We now confirmed that single applications of certain fungicides at first flower provided season-long control of both diseases.



Raghuwinder Singh

Diagnosed over 700 plant samples for both c and abiotic stresses.

New Collaborations with Other Departments, Universities or Agencies

Zhi-Yuan Chen

We recently started a joint research project with Dr. Burt Bluhm of the University of Arkansas that is funded by Aflatoxin Mitigation Center of Excellence (AMCOE).

Marc Cohn

The Cohn lab is collaborating with the USDA-ARS National Center for Genetic Resources Preservation to study aging and longevity of rice seeds.

Kenneth Damann

Collaboration with Robert Bellm of the University of Illinois, Brownstown Illinois Agronomy Research Center, who provided *Aspergillus* contaminated Illinois corn for isolate evaluation.

Cooperative Agreement with ARS,USDA,SRRC in New Orleans "Assessment of biochemical factors involved in selection of isolates for biocontrol of aflatoxin contamination of corn."

Collaboration with Jay Mellon, ARS, USDA, SRRC who is evaluating and comparing secreted degradative enzymes from soil and kernel isolates of *A. flavus*.

Collaboration with Ken Ehrlich and Geromy Moore, ARS,USDA,SRRC, who provided GFP transformed isolates of some of our Louisiana biocontrol strains as well as biocontrol strains of others. Also involved in mating type work to mutate Mat1-2 gene.

Collaborating in field experiments defined under the AMCOE proposal looking at biocontrol strain application in Arkansas with Burt Bluhm of the University of Arkansas and in Mississippi with Tom Allen of Mississippi State University.

Jong Hyun Ham

Collaborations with the following: Joohyun Kim and Nayong Kim (Center for Computation and Technology, LSU); Shantenu Jha (Dept. Electrical and Computer Engineering, Rutgers University); Gus Kousoulas (School of Veterinary Medicine, LSU); Vladimir Chouljenko (School of Veterinary Medicine, LSU); and Beom-Seok Kim (College of Life Sciences, Korea University).



Clayton A. Hollier

Crop loss assessment and its impact on global food security with INRA (France), Biofirs (Norway).

Edward C. McGawley

With Dr. Yuko Takeuchi (University of Kyoto, Kyoto, Japan, Terrestrial Ecology Laboratory) as first author, wrote and secured grant from Japanese Forestry Society to support a 3 month visit (May-July) to my lab in 2013.

Raghuwinder Singh

Collaborated on Smooth Cord Grass variety fingerprinting with Carrie Knot, SPESS, and Lester Canon, LDAF.

Rodrigo A. Valverde

Research collaboration with Dr. Eliezer Rodrigues de Souto, Universidade Estadual de Maringa, Brazil.

Research collaboration with Dr. Talo Pastor-Corrales, common bean pathologist, USDA/ARS, Beltsville, Md.

Subbarao presents seminar

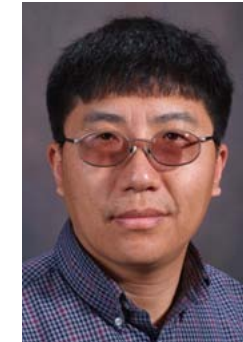
The Louisiana State University Plant Pathology and Crop Physiology (PPCP) Graduate Student Association had the pleasure of hosting Krishna Subbarao, Department of Plant Pathology at the University of California-Davis and a former graduate of the Department of Plant Pathology and Crop Physiology at LSU, from April 24 to 26, 2012. Subbarao received his Ph.D. degree from PPCP in 1989. During his visit, he had the opportunity to tour the department and meet with faculty members and students, including some of his former professors and committee members. The graduate students met with Subbarao for lunch and dinner to discuss, as well as seek, his advice and expertise on his success as a professional and researcher. While here, Subbarao presented a seminar entitled "Anthropogenic host range expansion: A unique cause of *Verticillium* wilt of lettuce" as part of the spring 2012 Departmental Seminar Series.

Faculty Awards and Honors

Zhi-Yuan Chen

Nominated for the LSU AgCenter G & H Seed Research Excellence Award.

Recipient of the 2012 invited Gottlieb Memorial Lecture Award from the Department of Crop Science, University of Illinois at Urbana-Champaign.



Marc Cohn

Received the LSU College of Agriculture Alumni Association Teacher of the Year Award, 2012.

Nominated to serve as C-4 Seed Science and Technology Chair, Crop Science Society of America.

Lawrence E. Datnoff

Received the Frederick L. Wellman Award at the American Phytopathological Society-Caribbean Division (APS-CD) 52nd annual meeting at South Padre Island, Texas, April 2012. This award recognizes an individual who has had an outstanding career as an established Plant Pathologist.

Received the American Phytopathological Society (APS) International Service Award.



Clayton A. Hollier

Received the International IPM Award of Excellence.



Jeff Hoy

Received the St. James Agricultural Tour Outstanding Service Award.



Edward C. McGawley

Awarded \$16,000 grant from Syngenta Corp. for the evaluation of seed treatment materials for management of reniform nematode.

Charles Overstreet

Received the Floyd S. Edmiston Award for Recognition of Excellence in Planning, Implementation and Evaluation Statewide Extension Education Programs.



Raymond W. Schneider

NCERA 208, a multiregional USDA/CSREES project dealing with soybean rust, was recognized as the most productive and innovative project in the U.S. Schneider and three other members of this multi-state group received special recognition at a ceremony on November 11, 2012, in Denver, Colo.

President, Southern Division, American Phytopathological Society.

Raghuwinder Singh

Elected Vice Chair of American Phytopathological Society Diagnostic Committee.



Graduate Student Awards and Honors

Ashok Kumar Chanda

Won the prestigious C. W. Edgerton Award. He was nominated by his co-advisors, Drs. Z. Y. Chen and R. W. Schneider. He won this award for his outstanding academic and professional achievements, especially his significant contributions toward our understanding of the causal agent of Cercospora leaf blight of soybeans, *Cercospora kikuchii*, with regard to time of infection, growth and development of the pathogen during the crop season, and the molecular mechanism underlying cercosporin biosynthesis.

Washington Luis da Silva

Awarded the H. David Thurston Travel Award to attend the APS meetings in Providence, R. I.

Received the LSU Graduate School Travel Award to attend the 2012 Annual APS Meeting in Providence, R.I.

Received the American Phytopathological Society (APS) Student Travel Award to attend the 2012 Annual APS Meeting in Providence, R.I.

Received the Plant Pathology and Crop Physiology Graduate Student Association (PPCP-GSA) - LSU Student Travel Award to attend the 2012 Annual Southern Division APS Meeting in Birmingham, Ala.

Jake Fountain

Received second place for his presentation at the Southern Division APS meeting in Feb. 2012.

Gave an oral presentation at the 2012 APS meeting.

Mala Ganiger

Received the 2012 APS I. E. Melhus symposium travel award.

Received a \$300 travel award to attend 2012 Southern Division APS meeting held in Birmingham, Ala. She gave a presentation entitled "Evaluation of soybean recombinant inbred line (RIL) derived sister lines for resistance to *Phakopsora pachyrhizi*."

Hari Sharan Karki

Received the PPCP Graduate Student Association travel award, 2012.

Rebecca Melanson

Received the AFRI NIFA Fellowships Grant Program: Predoctoral Fellowships, "Characterization of a novel negative regulator of toxoflavin production in *Burkholderia glumae* that causes bacterial panicle blight of rice"

Nominated 2012-2013 LSU Dissertation Year Fellowship.

Received an Honorable Mention from the Ford Foundation Fellowships 2012 Dissertation Program.

Déborah M. Xavier

Received second place in the poster competition at the Organization of Nematologists of Tropical America Annual Meeting.

Ganiger selected as speaker for 2012 I. E. Melhus graduate student symposium

Mala Ganiger, a Ph.D. student with Dr. Zhi-Yuan Chen in the Department of Plant Pathology and Crop Physiology, has been selected as one of the speakers for I. E. Melhus Symposium to be held during the 2012 American Phytopathological Society meeting in Providence, R.I. She was also awarded a Graduate Student Travel Award to attend the meeting. The theme of this year's I. E. Melhus Symposium is "Host Plant Resistance and Disease Management: Current Status and Future Outlook." This highly prestigious award was given to Mala in recognition of her ongoing research covering various molecular and applied aspects of host resistance in soybean towards rust pathogen. She will give a presentation on her research findings entitled "Proteomics-based study of host-fungus interactions between soybean and *Phakopsora pachyrhizi*."



Mala Ganiger

Faculty Publications - Refereed

Christopher Clark

Clark, C. A., Davis, J. A., Abad, J. A., Cuellar, W., Fuentes, S., Kreuzer, J., Gibson, R., Mukasa, S. B., Tugume, A. K., Tairo, F. and Valkonen, J. P. T. 2012. Sweetpotato viruses: 15 years of progress on understanding and managing complex diseases. *Plant Dis.* 96:168-185. doi/pdfplus/10.1094/PDIS-07-11-0550.

Wosula, E. N., Clark, C. A. and Davis, J. A. 2012. Effect of host plant, aphid species, and virus infection status on transmission of Sweetpotato feathery mottle virus. *Plant Dis.* 96:1331-1336.

Wosula, E. N., Davis, J. A., Clark, C. A., Smith, T. P., Arancibia, R. A., Musser, F. R. and Reed, J. T. 2012. The role of aphid abundance, species diversity and virus titer in the spread of sweetpotato potyviruses in Louisiana and Mississippi. *Plant Dis.* doi/pdfplus/10.1094/PDIS-06-12-0564-RE

Marc Cohn

Subudhi PK, A Parco, PK Singh, T DeLeon, R Karan, H Biradar, MA Cohn (2012) Quantitative trait loci analysis of two key domestication traits provides insights into origin and evolution of weedy rice. *Crop Science* (in press)

Oard S., J Ham, MA Cohn. 2012. Thionins - Nature's weapons of mass protection. pp. 415-443. In R. Rajasekaran, R.W. Cary, J.M. Jaynes, E. Montesinos (Eds) Small Wonders: Peptides for Disease Control. American Chemical Society Symposium Series 1095. American Chemical Society, Washington, DC.

Kenneth Damann

Abbas HK, Mascagni HJ, Bruns A, Shier WT, Damann, KE. 2012. Effect of planting density, irrigation regimes, and maize hybrids with varying ear size on yield, and aflatoxin and fumonisin contamination levels. *American Journal of Plant Sciences* doi:10.4236/ajps.2012.

Lawrence E. Datnoff

Huang, C. H., Roberts, P. D., and Datnoff, L. E. 2012. Fusarium diseases of tomato. Pgs. 145-158. IN: Fusarium Wilts of Greenhouse Vegetable and Ornamental Crops, A. Garibaldi, J. Katan, and M. L. Guillino, Eds., American Phytopathological Society, St. Paul, Minn.



Jong Hyun Ham

Chen, R., I. K. Barphagha and J. H. Ham. 2012. Dissection of quorum-sensing genes in *Burkholderia glumae* reveals non-canonical regulation and the new regulatory gene tofM for toxoflavin production. *PLoS ONE* (Accepted pending revisions)

Ham, J. H. 2012. Intercellular and intracellular signaling systems that globally control expression of virulence genes in plant pathogenic bacteria. *Mol. Plant Pathol.* (In press)

H. Y. Kim, J. D. Kim, J. S. Hong, J. H. Ham and B. S. Kim. 2012. Identification of antifungal niphimycin from *Streptomyces* sp. KP6107 by screening based on adenylate kinase assay. *J. Basic Microbiol.* (In press)

H. S. Karki, B. K. Shrestha, J. W. Han, D. E. Groth, I. K. Barphagha, M. C. Rush, R. A. Melanson, B. S. Kim and J. H. Ham. 2012. Diversities in virulence, antifungal activity, pigmentation and DNA fingerprint among strains of *Burkholderia glumae*. *PLoS ONE* 7: e45376.

R. A. Melanson, R. S. Sanderlin, A. R. McTaggart, and J. H. Ham. 2012. A systematic study of the 16S-23S rRNA intergenic transcribed spacer region, pglA, and ERIC-PCR and REP-PCR fingerprints reveals that *Xylella fastidiosa* strains from pecan are part of *X. fastidiosa* subsp. *multiplex*. *Plant Dis.* 96: 1123 - 1134.

H. S. Karki, I. K. Barphaga, and J. H. Ham. 2012. A conserved two-component regulatory system, PidS/PidR, globally regulates pigmentation and virulence-related phenotypes of *Burkholderia glumae*. *Mol. Plant Pathol.* doi: 10.1111/j.1364-3703.2012.00787.x. [Epub ahead of print].

Clayton A. Hollier

Savary, S., Ficke, A., Aubertot, J-N. and Hollier, CA. 2011. Crop Production and Food Security: Impact of Global Change on Shifting Agricultural Systems. In: Freedman B. (Ed.) Global Environmental Change: SpringerReference DOI: 10.1007/SpringerReference_300073 2011-11-03 08:38:07 UTC

Savary, S., Ficke, A., Aubertot, J-N. and Hollier, C. 2012. Crop losses due to diseases and their implications for global food production losses and food security. *Food Security*: DOI 10.1007/s12571-012-200-5.

Jeff Hoy

Barrera, W., Hoy, J., and Li, B. 2012. Temperature and leaf wetness effects on infection of sugarcane by *Puccinia melanocephala*. *J. Phytopathol.* 160:294-298.

Barrera, W., Hoy, J., and Li, B. 2012. Effects of temperature and moisture variables on brown rust

Faculty Publications - Refereed (continued)

epidemics in sugarcane. J. Phytopathol. 160:doi:10.1111/jph.12035.

Edward C. McGawley

McGawley, E.C., C. Overstreet and M.J. Pontif. 2012. Variation in Development and Eclosion of Eggs among Geographic Isolates of *Rotylenchulus reniformis*. Journal of Nematology, In Press.

McGawley, C. Overstreet, M.J. Pontif and A. M. Skantar.

Multimedia Presentations and Resources for Teaching Nematology. Journal of Nematology, In Press.

McGawley, E.C. and R.M. Steckler. Environmental Responsibility, Nematode Management and Collaboration Between Academia and industry. Proceedings of the 6Tth SETAC (Soc. for Env. Tox. & Chem.) World Congress 2012, 1022-1027.

McGawley, E.C., C Overstreet and M.J. Pontif. 2012 Variation in Eclosion of Eggs and Infectivity of Juveniles Among Geographic Isolates of *Rotylenchulus reniformis* from America. Nematology. In Press.

Plaisance, A., E.C. McGawley and C. Overstreet. Impact of Nematodes on Residential Turf in East Baton Rouge Parish, Louisiana. Journal of Nematology, In Press.

Kularathna, M., C. Overstreet, E. C. McGawley, D. M. Xavier, C. M. Martin, and D. B. Burns. 2012. Effects of nutrients on reniform nematode (*Rotylenchulus reniformis*) pathogenicity and reproduction. Journal of Nematology. In Press.

Overstreet, C., E. C. McGawley, D. Burns, R. L. Frazier, and R. Barbosa. 2012. The influence of apparent electrical conductivity of the soil on nematicides in cotton. Beltwide Cotton Proceedings, pages 288-292.

Overstreet, C., E. C. McGawley, D. Xavier, M. Kularathna, M. Martin, D. Burns and R. L. Frazier. 2012. Site-specific technology to better manage nematodes in cotton. Proceedings of the 7th National IPM Symposium, Pp. 88-89.

Overstreet, C., E. C. McGawley, D. Xavier, M. Kularathna, and M. Martin. 2012. Nematicide effects on *Meloidogyne incognita* and *Rotylenchulus reniformis* in cotton fields with variable soil texture. Journal of Nematology. In Press

Xavier, D., C. Overstreet, E. C. McGawley, M. T. Kularathna, D. Burns, R. L. Frazier and C. M. Martin. 2012. Population development of *Rotylenchulus reniformis* in different soil textures within a Commerce silt loam field. Journal of Nematology. In Press



Raymond W. Schneider

Ward, N. A., Robertson, C. L., Chanda, A. K. and Schneider, R. W. 2012. Effects of *Simplicillium lanosoniveum* on *Phakopsora pachyrhizi*, the soybean rust pathogen, and its use as a biological control agent. Phytopathology 102:749-760.

Ward, N. A., Schneider, R. W. and Aime, M. C. 2011. Colonization of soybean rust sori by *Simplicillium lanosoniveum*. Fungal Ecol. 4:303-308.

Ward, N. A., Schneider, R. W. and Cai, G. Cercospora Blight and Leaf Spot and Purple Seed Stain. In: Hartman, G. and Rupe, J., eds. Soybean Disease Compendium, 5th Edition. APS Press. St. Paul, MN. In Press.

Ward, N. A., Schneider, R. W. and Robertson C. L. 2012. Documentation of an extended latent infection period by *Phakopsora pachyrhizi*, the soybean rust pathogen. Online. Plant Health Progress doi:10.1094/PHP-2012-0321-01-RS.

Raghuwinder Singh

da Silva, W., and Singh, R. 2012. First report of *Alternaria alternata* causing leaf spot on *Aloe vera* in Louisiana. Plant Disease (Accepted for publication) <http://dx.doi.org/10.1094/PDIS-04-12-0343-PDN>.

Guan, W., Shao, J., Singh, R., Davis, R. and Huang, Q. 2012. A TaqMan-based real time PCR assay for specific detection and quantification of *Xylella fastidiosa* strains causing bacterial leaf scorch in oleander. Current Microbiology (Accepted for publication).

Valverde, R., Singh, R. and Sabanadzovic, S. 2012. Detection and identification of *Clerodendron golden mosaic China virus* in *Salvia splendens*. European Journal of Plant Pathology 133 (3): 499-503.

Rodrigo A. Valverde

Valverde, R. A., Sabanadzovic, S. and Hammond J. 2012. Viruses that enhance the aesthetics of some ornamental plants: beauty or beast? Plant Disease 96:600-611.

Villanueva, F., Sabanadzovic, S., Valverde, R. A. and Navas-Castillo, J. 2012. Complete genome sequence of a double-stranded RNA virus from avocado. Journal of Virology 86:1282-1283.

Valverde, R. A., Raghuwinder, S. and Sabanadzovic, S. 2012. Detection and identification of *Clerodendron golden mosaic China virus* in *Salvia splendens*. European Journal of Plant Pathology 133:499-503.



Graduate Student Publications - Refereed

W. Barrera

Barrera, W., Hoy, J., and Li, B. 2012. Temperature and leaf wetness effects on infection of sugarcane by *Puccinia melanocephala*. J. Phytopathol. 160:294-298.

Barrera, W., Hoy, J., and Li, B. 2012. Effects of temperature and moisture variables on brown rust epidemics in sugarcane. J. Phytopathol. 160:doi:10.1111/jph.12035.

Ashok Kumar Chanda

Ward, N. A., Robertson, C. L., Chanda, A. K., and Schneider, R. W. 2012. Effects of *Simplicillium lanosoniveum* on *Phakopsora pachyrhizi*, the Soybean Rust Pathogen, and its Use as a Biological Control Agent. Phytopathology 102: 749-760 (<http://dx.doi.org/10.1094/PHYTO-01-11-0031>)

Ruoxi Chen

PONE-D-12-17935R1 "Dissection of quorum-sensing genes in *Burkholderia glumae* reveals non-canonical regulation and the new regulatory gene tofM for toxoflavin production" PLOS ONE

Washington Luis da Silva

da Silva, W. L., Singh, R. First report of *Alternaria alternata* causing leaf spot on *Aloe vera* in Louisiana. Plant Dis. 96:0000, 2012. <http://dx.doi.org/10.1094/PDIS-04-12-0343-PDN>.

Hari Sharan Karki

Hari S. Karki, Inderjit K. Barphagha and Jong Hyun Ham (2012). "A conserved two-component regulatory system, PidS/PidR, globally regulates pigmentation and virulence-related phenotypes of *Burkholderia glumae*." Molecular Plant Pathology

Hari S. Karki, Bishnu K. Shrestha, Jae Woo Han, Donald E. Groth, Inderjit K. Barphagha, Milton C. Rush, Rebecca A. Melanson, Beom Seok Kim and Jong Hyun Ham. (2012). "Diversities in Virulence, Antifungal Activity, Pigmentation and DNA Fingerprint among Strains of *Burkholderia glumae*." PLoS ONE 7(9): e45376.

Rebecca Melanson

Melanson, R. A., Sanderlin, R. S., McTaggart, A. R. and Ham, J. H. 2012. A systematic study reveals that *Xylella fastidiosa* strains from pecan are part of *X. fastidiosa* subsp. *multiplex*. Plant Disease 96:1123-1134.

Karki, H. S., Shrestha, B. K., Han, J. W., Growth, D. E., Barphagha, I. K., Rush, M. C., Melanson, R. A., Kim, B.S., Ham, J. H. 2012. Diversities in virulence, antifungal activity, pigmentation and DNA fingerprint among strains of *Burkholderia glumae*. PLoS ONE 7(9): e45376. doi:10.1371/journal.pone.0045376.

Surendra Osti

Khatiwada B. P., B. Chaulagain and S. Osti. 2012. Availability and use status of plant genetic diversities from forest for food, nutrition and livelihood security: A case from Chepang tribal communities of Nepal. World Journal of Science, Technology and Sustainable Development 9:2. Pp 147-158.

A. Plaisance

Plaisance, A., E.C. McGawley and C. Overstreet. Impact of Nematodes on Residential Turf in East Baton Rouge Parish, Louisiana. Journal of Nematology, In Press.

Wang, Y.

Optimization of heat-stable protein extraction in recalcitrant *Spartina alterniflora*. M.S. Thesis, December 2011.

E.N. Wosula

Wosula, E. N., Clark, C. A., and Davis, J. A. 2012. Effect of host plant, aphid species, and virus infection status on transmission of Sweetpotato feathery mottle virus. Plant Dis. 96:1331-1336.

Wosula, E. N., Davis, J. A., Clark, C. A., Smith, T. P., Arancibia, R. A., Musser, F. R. and Reed, J. T. 2012. The role of aphid abundance, species diversity and virus titer in the spread of sweetpotato potyviruses in Louisiana and Mississippi. Plant Dis. doi/pdfplus/10.1094/PDIS-06-12-0564-RE

Faculty Publications - Non-Refereed

Raghuwinder Singh

Singh, R. and Ferrin, D. 2011. Sweet Orange Scab and Citrus Scab Disease Identification Card. LSU AgCenter Pub 3215.

Singh, R. 2012. "Plant Diagnostic Center Report 2010 and 2011", Louisiana State University Agricultural Center, Publication MISC-90.

Singh, R. 2012. "Chapter 4: The Plant Diagnostic Center, Plant Disease Control Guide", Louisiana State University Agriculture Center, Publication 1802.

Singh, R. 2012. The LSU AgCenter Plant Diagnostic Center. Ornamental Horticulture E-News July 23 and July 30, 2012. LSUAgCenter Newsletter.

Singh, R. 2012. Plant Diagnostic Center: The 'Plant Doctor' is in to Diagnose and Solve your Plant Health Problems at the LSU AgCenter's New Improved Plant Diagnostic Center. Louisiana Nursery and Landscape Association Quarterly Newsletter Vol. 38.

Singh, R. 2012. Armillaria Root Rot of 'Knock Out' Roses, Bud n Bloom Tri County Rose Society Quarterly Newsletter June Edition.

The following article is from the LSU AgCenter publications website - *Louisiana Agriculture* in the summer 2012 issue.

<http://www.lsuagcenter.com/en/communications/publications/>

International Service Award goes to Datnoff

Lawrence Datnoff, head of the Department of Plant Pathology and Crop Physiology, was presented the International Service Award from the American Phytopathological Society on Aug. 5 at the annual meeting in Providence, R.I.

The award recognizes outstanding contributions by society members to plant pathology in countries other than their own.

Beginning in the 1990s, Datnoff built cooperative research projects around the world, influencing governmental, academic and private organizations on regulatory policies, guidelines and cropping practices.

A pioneer in the use of elemental silicon to suppress plant diseases, Datnoff initiated silicon research programs in Colombia and Brazil with subsequent collaborations with Canada, India and Japan. In addition, he was instrumental in developing a series of world conferences addressing silicon and agriculture.

An invited speaker, visiting professor and mentor in many countries, Datnoff joined the



LSU AgCenter as head of the Department of Plant Pathology & Crop Physiology in 2008 after 20 years on the faculty at the University of Florida. He earned his bachelor's degree from the University of Georgia, his master's degree from Virginia Tech and his doctorate from the University of Illinois.

Presentations, Webinars and Posters by Faculty

Zhi-Yuan Chen

Invited speaker at Invited Gottlieb memorial lecture series seminar at Department of Crop Science, University of Illinois at Urbana-Champaign (April 25, 2012). "Enhancing host resistance of corn and soybean to fungal diseases."

Christopher Clark

Wosula, E. N., J. A. Davis and C. Clark. 2011. Effect of Ipomoea host plants on stylet penetration behavior of *Myzus persicae* (Sulzer) (abstract 0446). Proceedings of the 2011 Annual Meeting of the Entomological Society of America. Reno, Nev. November 14, 2011.

Sweany, R. R., Picha, D. H. and Clark, C. A. 2012. Use of hot-water baths as non-chemical treatments for *Rhizopus* soft rot on sweetpotatoes. *Phytopathology* 102:S2.10.

Wosula, E. N., Clark, C. A. and Davis, J. A. 2012. Host plant, aphid species and virus infection status influence on acquisition and transmission of *Sweet potato feathery mottle virus*. *Phytopathology* 102:S2.11.

da Silva, W. L. and Clark, C. A. 2012. Infection of sweetpotato by fungal end rot pathogens prior to harvest. *Phytopathology* 102:S2.2-2.3.

Villordon, A. Q., Firon, N., Clark, C. and LaBonte, D. 2012. An Ethylene Blocker Delays Epidermal Cell Death At the Location of Adventitious Root Emergence In 'Beauregard' but Not In 'Evangeline' Sweetpotato Cuttings", for the American Society for Horticultural Science 2012 Annual Conference.

Wang, X., Arancibia, R. A., Main, J. L., Shankle, M. W. and Clark, C. A. 2012. Changes in phenolic content in sweetpotato subjected to water stress and SPFMV. National Sweetpotato Collaborators Group Progress Report 2011:10.

Villordon, A., Clark, C., LaBonte, D. and Firon, N. 2012. 'Beauregard' and 'Evangeline' adventitious root developmental response to 1-MCP treatment. National Sweetpotato Collaborators Group Progress Report 2011: 11.

Sweany, R. R., Picha, D. H. and Clark, C. A. 2012. Atmospheric conditions affect the growth and development of *Rhizopus stolonifer* and *Penicillium*. National Sweetpotato Collaborators Group Progress Report 2011:20.

Arancibia, R. A., Clark, C., Grelen, L., Wosula, E., Wang, X. and Main, J. 2012. Potyvirus incidence in Mississippi sweetpotato fields and effect on storage

root initiation. National Sweetpotato Collaborators Group Progress Report 2011:23.

Sweany, R. R., Picha, D. H. and Clark, C. A. 2012. Evaluation of postharvest hot water treatments and bio-control agents for suppression of *Rhizopus* soft rot on sweetpotatoes. National Sweetpotato Collaborators Group Progress Report 2011:24.

Marc Cohn

Subudhi, P.K., A. Parco, P.K. Singh, T. DeLeon, R. Karan, H. Biradar, M.A. Cohn (2012) Genetic dissection of two key domestication traits, seed dormancy and seed shattering, in the U.S. weedy rice. The 34th RTWG meeting. Hot Springs, Ark. 71901, February 27 – March 1, 2012.

Cohn, M.A. Are symptoms of physical damage associated with recalcitrant *Spartina* seed death? Plant Pathology & Crop Physiology Departmental Seminar (Sept 2012)

Kenneth Damann

"Aflatoxin Biocontrol: What have we learned?" oral presentation at NCGA Corn Utilization and Technology Conf., Indianapolis, Ind., June 5, 2012.

"A role for mating type in *Aspergillus flavus* infection of corn and in biological control?" oral presentation at the Annual meeting of the American Phytopathological Society, Aug. 4-8, Providence, R.I.

Washington da Silva wins American Phytopathological Society Travel Award

Washington da Silva, a graduate student in the Department of Plant Pathology and Crop Physiology under the guidance of Dr. Christopher Clark, won the H. David Thurston Student Travel Award to attend the 2012 Annual Meeting of the American Phytopathological Society in Providence, R.I. da Silva received this highly competitive award in recognition of his research and will present his findings entitled "Flooding associated soft rot of sweetpotato storage roots caused by *Clostridium* species."

Presentations, Webinars and Posters by Faculty (continued)

Lawrence E. Datnoff

Datnoff, L. E. 2012. Silicon and Biotic Stress: Suppressing Plant Diseases. S08 Nutrient Management & Soil & Plant Analysis, Soil Science Society of America, Cincinnati, Ohio, 21-24 October

Jong Hyun Ham

Dept. Biological Sciences, Louisiana State University, Baton Rouge, La. (9/24/2012)

Title: Genetic and genomic approaches to understand the regulatory mechanism of *Burkholderia glumae*: an emerging pathogenic bacterium causing bacterial panicle blight of rice

University of Massachusetts, Amherst, Mass. (4/10/2012)

Title: Genetic and genomic approaches to gain new insights into the virulence mechanism of *Burkholderia glumae*: an emerging rice pathogenic bacterium causing bacterial panicle blight

Texas A & M University, College Station, Texas (3/28/2012)

Title: Current research progress on bacterial panicle blight of rice: An emerging threat to rice production
University of Arkansas, Fayetteville, Ark. (1/31/2012)

Title: A current outlook on the study of bacterial panicle blight of rice and its causal agent, *Burkholderia glumae*

Ham, J. H. 2012. The global regulatory network for the virulence of *Burkholderia glumae*, the major causal agent of bacterial panicle blight of rice. *Phytopathology* 102: S4.148

Ham, J. H., H. Karki, R. Chen, I. Kaur, F. Felix, J. Kim, and R. Melanson. 2012. Genetic dissection of the regulatory network that controls virulence genes of *Burkholderia glumae*. *Phytopathology* 102: S2.5.

Edward C. McGawley

2012 Cotton Conferences meeting, Orlando, Fla., 3-6 January.

2012 Multistate Research Project S-1046 Meeting, Orlando, Fla. January 7.

Sakata Seed Company Invited Seminar: Nematode Impact on Vegetable Production in the Southern U.S., Ft. Myers Fla., 8-9 January

6th SETAC World Congress 2012. Berlin, Germany, 19-25 May

Syngenta Nematology Conference. Park City, Utah, 1-3 August.

Annual Meeting of the Society of Nematologists. Savannah, Ga., 12-16 August.

Meeting of the European Society of Nematologists. Adana, Turkey, 23-27 September.

Multistate Research Project S-1046 and W-2186, 2013 Meeting. Biloxi, Miss., 31 October -2 November.

Charles Overstreet

The influence of apparent electrical conductivity of the soil on nematicides in cotton. 2012. Presented at the Beltwide Cotton Conference, Orlando, Fla., January 5-6, 2012.

Using site-specific methodology to manage plant-parasitic nematodes in cotton fields. 2012. Region Project S-1046 meeting, Orlando, Fla., January 7, 2012.

Nematicides: seed treatment expectations. 2012. Presented at the Louisiana Agricultural Technology and Management Conference, Marksville, La., February 15-17, 2012.

Soybean nematodes in Louisiana and Arkansas. 2012. Presented at the 39th annual meeting of the Southern Soybean Disease Workers, Pensacola Beach, Fla., March 7-8, 2012

Overstreet, C., E. C. McGawley, D. Xavier, M. Kularathna, M. Martin, D. Burns and R. L. Frazier. 2012. Site-specific technology to better manage nematodes in cotton. The 7th International IPM Symposium, Memphis, Tenn., March 27-29, 2012

Nematicides effects on *Meloidogyne incognita* and *Rotylenchulus reniformis* in cotton fields with variable soil texture. 2012. Presented at the Society of Nematology meeting in Savannah, Ga., August 12-15, 2012.

Raymond W. Schneider

Ward, N. A. and Schneider, R. W. 2012. *Simplicillium lanosoniveum*, a mycoparasite of the soybean rust pathogen and its use as a biological control agent. Invited lecture. 50th Anniversary of the Korean Society of Plant Pathology, Seoul, Korea. October 25, 2012

Raghuwinder Singh

Impatiens Downy Mildew Symptom, Disease Epidemiology, and Management", Landscape Horticulture Field Day, Hammond Research Station, Hammond, La. October 11, 2012.

"Introduction to Enzyme Linked Immunoassay and Immuno-strip Assay", Plant Virology, Plant Pathology and Crop Physiology PLHL 7040, Baton Rouge, La. October 2, 2012.

Presentations, Webinars and Posters by Faculty (continued)

"Plant Diagnostics and Plant Diagnostic Center", Louisiana Master Gardener Training Session, Baton Rouge (Red River Parish), La. October 1, 2012.

"Plant Health Diagnostics and Introduction to Diagnostic Methods", General Plant Pathology, Plant Pathology and Crop Physiology PLHL 4000, Baton Rouge, La. September 27, 2012.

"Sudden Oak Death Tissue Sampling In Nurseries and Detection Process in the Lab", Louisiana Department of Agriculture and Forestry Inspector Training, Alexandria, La. September 25, 2012.

"An Overview of Sudden Oak Death", Louisiana Department of Agriculture and Forestry Inspector Training, Alexandria, La. September 25, 2012.

"Plant Diagnostics and Plant Diagnostic Center", Louisiana Master Gardener Training Session, Gonzales, La. September 4, 2012.

"Ornamental Diseases and their Management",

LSU AgCenter Winn and Jackson Parish Field Day, Jonesboro, La. July 21, 2012.

"Plant Diagnostics and Plant Diagnostic Center", Louisiana Master Gardener Training Session, DeRidder, La. June 5, 2012.

"Orchid Ailments Diagnosis and Management", Orchid Society of Baton Rouge, Baton Rouge, La. May 16, 2012.

"Lawns, Limbs, and Leaves Diagnosed", Northshore Spring Garden Show, Covington, La. March 12, 2012.

"New Improved Plant Diagnostic Center", Landscape Pest Management Workshop, Hammond, La. February 2, 2012.

Rodrigo A. Valverde

Endornaviruses in common bean (*Phaseolus vulgaris* germplasm.), Oral presentation at the Noble Foundation virology retreat.

The following article is from the LSU AgCenter publications website - *Louisiana Agriculture* in the winter 2012 issue.

<http://www.lsuagcenter.com/en/communications/publications/>

Submit diseased plants to the Plant Diagnostic Center

The Plant Diagnostic Center on the LSU AgCenter's Baton Rouge campus is a one-stop shop for all plant health problems, which can be caused by pathogens, nematodes, insects and mites as well as by environmental conditions and weed pressures. Misdiagnosis of these problems may add to losses, increase cost and decrease profits. Services include disease diagnosis, insect and mite diagnosis and identification, nematode diagnosis and identification, and weed identification. Solving problems requires accurate information about the problem, including a detailed description of the symptoms and how they developed. A fresh sample of the problem plant – including healthy and damaged tissue – is a must so it is best to hand-deliver. You can also send digital images. Find the details of how to submit at

www.lsuagcenter.com/plantdiagnostics

The LSU Department of Plant Pathology and Crop Physiology is well represented at the 2012 SD-APS meeting

The 89th annual Southern Division American Phytopathological Society (SD-APS) meeting was held in conjunction with the Southern Association of Agricultural Scientists (SAAS) at the Birmingham –Jefferson Conference Center in Birmingham, Alabama, on February 5-6, 2012. The LSU Department of Plant Pathology and Crop Physiology (PPCP) was well represented with twenty-two members from the department attending the meeting which saw one of the larger crowds in attendance over the last several years. Twelve of the twenty-two PPCP meeting attendees presented papers with ten students participating in the graduate student competition.

A number of students received special honors in association with this meeting. Felix Francis and Mala Ganiger were awarded two of the five \$300 SD-APS travel awards to attend the meeting. In addition, two PPCP received top honors and placed in the student competition in which thirty-six undergraduate and graduate students from universities within the Southern

Division participated. Five awards were given overall: first place, second place, third place and two honorable mentions. Jake Fountain placed second receiving \$200 for his presentation, "Identification and analysis of differentially expressed maize WRKY transcription factors in response to *Aspergillus flavus* colonization of resistant and susceptible germplasm," and Felix Francis placed first receiving \$300 for his presentation, "Comparative genomic analyses of the rice pathogenic *Burkholderia glumae* strains reveals plasticity among the genomes."

In addition, two faculty members were recognized for their leadership and participation in the SD-APS. Don Ferrin completed his term as secretary-treasurer and received a plaque for his service, while Ray Schneider was recognized as the president elect for the previous term and took over as president for the upcoming term.

The following PPCP members were also in attendance at the SD-APS meeting: Professors Chris Clark, Lawrence Datnoff, Clayton Hollier and Nick Singh; Research Associate Clark Robertson; Graduate Assistants Maria Caldera, Ashok Chanda and Brian Ward and interns Kapil Kafle and Allan Lobo.



PPCP graduate assistants, research associates and interns pause for a photo between sessions at the 89th annual SD-APS meeting in Birmingham, Alabama. Pictured from left to right are: H. Karki, K. Kafle, C. Robertson, M. Caldera, B. Ward, R. Melanson, J. Fountain, R. Sweany, F. Francis, K. Kaur, E. Wosula, M. Ganiger, W. da Silva, A. Chanda, A. Lobo.

Presentations, Webinars and Posters by Graduate Students/Research Associates

Ashok Kumar Chanda

A. K. CHANDA, Z. Chen, R. W. Schneider. 2011. Functional characterization of two genes involved in cercosporin biosynthesis in *Cercospora kikuchii*. *Phytopathology* 101:S30. (Abstr.).

A. K. CHANDA, Z. Chen, R. W. Schneider. 2011. The roles of light induced proteins in the biosynthesis of cercosporin by *Cercospora kikuchii*. *Phytopathology* 101:S264 (Abstr.).

Ruoxi Chen

Dept. of Plant Pathology and Crop Physiology, LSU AgCenter, Functional characterization of *tofM*, a novel quorum sensing modulator of *Burkholderia glumae*.

Washington Luis da Silva

da Silva, W. L., Clark, C. A. 2012. Flooding-associated soft rot of sweetpotato storage roots caused by *Clostridium* spp. APS Annual Meeting, Providence, R. I. August 2012. v. 102, n. 7S, p. S4.28. <http://apsjournals.apsnet.org/doi/pdf/10.1094/PHYTO-102-7-S4.1>

da Silva, W. L., Clark, C. A. 2012. Infection of sweetpotato by fungal end rot pathogens prior to harvest. APS Southern Division Annual Meeting, Birmingham, Ala. April 2012. v. 102, n. 4S, p. S2.1-S2.11. <http://apsjournals.apsnet.org/doi/pdf/10.1094/PHYTO-102-4-S2.1>

da Silva, W. L., Clark, C. A. 2012. Infection of sweetpotato by fungal end rot pathogens prior to harvest. National Sweetpotato Collaborators Group Annual Meeting, Birmingham, Ala.

Mala Ganiger

Ganiger M. C., Walker, D. R. and Chen, Z. 2012. Evaluation of soybean recombinant inbred line (RIL) derived sister lines for resistance to *Phakopsora pachyrhizi*. 2012 Southern Division APS meeting.

Ganiger M. C., Walker, D. R. and Chen, Z. 2012. Proteomics-based study of host-fungus interactions between soybean and *Phakopsora pachyrhizi*. 2012 APS annual meeting.

Ganiger M. C., Walker, D. R. and Chen, Z. 2011. Differences in Responses and Protein Profiles of Soybean Recombinant Inbred Line (RIL)-Derived Sister Lines to *Phakopsora pachyrhizi* inoculation. 2011 Field crops rust symposium.

Hari Sharan Karki

H. S. KARKI and J.H. Ham. 2012 "Naturally occurring avirulent strains of *Burkholderia glumae* isolated from rice fields fail to express multiple virulence genes."

Oral presentation on 2012 APS Annual Meeting, August 4-8, Providence, R.I.

H. S. KARKI, B. K. Shrestha, D. E. Groth and J. H. Ham. 2012. "Genetic and phenotypic variations among *Burkholderia glumae* strains, the causal agent of bacterial panicle blight of rice." *Phytopathology* 102:S2.6. Oral presentation on 2012 APS Southern Division Meeting February 5-6, Birmingham, Ala.

M. Kularathna

Xavier, D., C. Overstreet, M. Kularathna, D. Burns, R.L. Frazier and C. M. Martin. 2012. Reniform nematode development across the variable soil texture in a Commerce silt loam field. Beltwide Cotton Conference, Orlando, Fla., January 2012.

Kularathna, M., C. Overstreet, D. Xavier, D. Burns, R. L. Frazier, and C. M. Martin. 2012. Effects of soil fertility on reproduction and pathogenicity of reniform nematode (*Rotylenchulus reniformis*) on cotton. Beltwide Cotton Conference, Orlando, Fla., January 2012.

Xavier, D., C. Overstreet, E. C. McGawley, M. T. Kularathna, D. Burns, R. L. Frazier, and C. M. Martin. 2012. Population development of *Rotylenchulus reniformis* in different soil textures within a Commerce silt loam field. Society of Nematology meeting, Savannah, Ga., August 2012

Kularathna, M., C. Overstreet, E. C. McGawley, D. M. Xavier, C. M. Martin, and D. B. Burns. 2012. Effects of nutrients on reniform nematode (*Rotylenchulus reniformis*) pathogenicity and reproduction. Society of Nematology meeting, Savannah, Ga., August 2012

Xavier, D. M., C. Overstreet, M. Kularathna, and C. M. Martin. 2012. Population development of *Rotylenchulus reniformis* in a field over a nine year period. Organization of Nematologists of Tropical America meeting, Cancun, Mexico, September 2012

Rebecca Melanson

"Using Emerging Technologies and Conventional Approaches to Study and Control Bacterial Panicle Blight of Rice" (poster presentation) at the Growing the Bioeconomy Conference, Banff, Alberta, Canada, October 2-5, 2012.

"Identification of the Subspecies of *Xylella fastidiosa* causing Pecan Bacterial Leaf Scorch and Potential Implications in Regards to Sources of Pathogen Inoculum" (oral presentation) at the 2012 Tri-State Pecan Growers' Convention, Natchitoches, La., June 14-15, 2012.

Presentations, Webinars and Posters by Graduate Students/Research Associates

“Transposon mutagenesis of *Burkholderia glumae* 336gr-1 and screening of mutant derivatives identified *ntpR*, a novel negative regulator of toxoflavin production” (oral presentation) at the 89th Annual Meeting of the Southern Division American Phytopathological Society Meeting, Birmingham, Ala., February 5-6, 2012.

C.L. Robertson

C. L. ROBERTSON, N. A. Ward, R. W. Schneider. 2011. Chemical control of *Cercospora* leaf blight of soybean: Evaluation of fungicide efficacy and time of application. *Phytopathology* 101:S268 (Abstr.).

T.A. Rush

T. A. RUSH, R. W. Schneider, M. C. Aime, G. L. Hartman, S. Hambleton, N. A. Ward. 2011. Assessing the validity of diagnostic quantitative PCR assays for *Phakopsora pachyrhizi* and *P. meibomia*. *Phytopathology* 101:S157 (Abstr.).

T. A. RUSH, B. Kennedy, A. McTaggart, G. Heller, M. Toome, G. L. Hartman, R. W. Schneider, and M. C. Aime. 2012. Extent of variability of the internal transcribed spacer region within *Phakopsora pachyrhizi*. *Phytopathology* 102:S4.103. (Abstr.).

Bishnu Kumar Shrestha

Shrestha, B.K., S. Wagle, M. C. Rush, J. H. Ham. 2012. Antagonistic activities of rice-associated bacteria against *Burkholderia glumae* and *Rhizoctonia solani*. 2012 Annual American Phytopathological Society Southern Division Meeting. (Abstract) Birmingham, Ala., February 5-6, 2012.

Shrestha, B.K., H.S. Karki, D.E. Groth, X. Sha, P. Subudhi, H. Utomo and J.H. Ham. 2012. Development of quantitative trait loci (QTL) mapping and breeding programs to improve rice resistance to bacterial panicle blight and sheath blight. The 34th RTWG meeting. (Abstract) Hot Springs, Ark., February 27-March 1, 2012.

Rebecca Ruth Sweany

2012 Invited speaker at Corn Utilization and Technology Conference in Indianapolis, Ind. Sweany, R. R. *Aspergillus Flavus* Niche Specialization in Louisiana Corn Fields.

2012 Poster at National Sweetpotato Collaborators Group Annual Meeting in Birmingham, Ala. Sweany, R.R., Picha, D.H. and Clark, C.A. Atmospheric Conditions Affect the Growth and Development of *Rhizopus stolonifer* and *Penicillium*.

2012 Presenter at National Sweetpotato Collaborators Group Annual Meeting in Birmingham, Ala. Sweany, R.R., Picha, D.H., and Clark, C.A. Evaluation of Postharvest Hot Water Treatments and Bio-control Agents for Suppression of *Rhizopus* Soft Rot on Sweetpotatoes.

2012 Presenter at APS Southern Division Annual Meeting in Birmingham, Ala. Sweany, R.R., Picha, D. H. Clark, C. A. Use of hot-water baths as non-chemical treatments for *Rhizopus* soft rot on sweetpotatoes. *Phytopathology* 102:S2.10.

Melanson awarded competitive USDA AFRI-NIFA Pre-doctoral Fellowship Grant

Rebecca A. Melanson, a Ph.D. candidate in the Department of Plant Pathology and Crop Physiology at LSU, under the direction of Dr. Jong Hyun Ham, was awarded a competitive USDA AFRI-NIFA Pre-doctoral Fellowship Grant for her dissertation project, “Characterization of a novel negative regulator of toxoflavin production in *Burkholderia glumae* that causes bacterial panicle blight of rice.” The funding is for two years and she will attend an annual investigators meeting in Washington, DC, as a part of the award. Melanson, a native of Louisiana, received her B.S. in biology from Centenary College of Louisiana, Shreveport, La. in 2003, and her M.S. in Plant Health with a concentration in Plant Pathology from the Department of Plant Pathology and Crop Physiology in December 2011. Her master’s thesis, conducted under the direction of Dr. Ham, was entitled “A systematic study of *Xylella fastidiosa* strains isolated from pecan, grapevine, oleander and sycamore in Louisiana.”



Rebecca Melanson

Presentations, Webinars and Posters by Graduate Students/Research Associates

Yi Wang

Wang Y, Hasan A, Chen, ZY, Cohn MA (2012) Lack of protective proteins and specific programmed cell death pathways may be associated with recalcitrant seed death in *Spartina alterniflora*. American Society of Plant Biologists Annual Meeting, Austin, Texas, July 20-24 2012.

Wang, Y., Chappell, J.H., Hasan, A., Chen, Z.Y. and Cohn, M.A. (2012) Study of recalcitrance of *Spartina alterniflora* seeds for coastal restoration in Louisiana. State of the Coast, Preparing for a Changing Future. New Orleans, La. June 25-27 2012.

Wang, Y., Hasan, A., Chen, Z.Y. and Cohn, M.A. (2012) Comparative proteomics of recalcitrant seed death in *Spartina alterniflora*. Southern Section – American Society of Plant Biologists annual meeting, Myrtle Beach, S.C. March 3-5 2012.

N.A.Ward

N. A. WARD and R. W. Schneider. 2011. Documentation of an extended latent infection period with *Phakopsora pachyrhizi* in soybean. *Phytopathology* 101:S269. (Abstr.).

N. A. WARD, C. L. Robertson, R. W. Schneider, and M. Warr. 2011. Effects of mineral nutrients on *Cercospora kikuchii* and *Cercospora* leaf blight in soybean. *Phytopathology* 101:S269. (Abstr.).

R. W. SCHNEIDER (1), C. L. Robertson (1), N. A. Ward. 2012. Effects of application timing and rates of application of a demethylation inhibitor fungicide on *Cercospora* leaf blight of soybean. *Phytopathology* 102:S4.107. (Abstr.).

Michelle Warr

M. R. WARR, T. A. Rush, R. W. Schneider. 2012. Genetic relationships among subpopulations of competitive nonpathogenic strains of *Fusarium oxysporum* and *F. oxysporum* f. sp. *lycopersici*. *Phytopathology* 102:S4.132. (Abstr.).

Everlyne Wosula

Wosula, E. N., Clark, C. A., and Davis, J. A. 2012. Host plant, aphid species and virus infection status influence on acquisition and transmission of Sweet potato feathery mottle virus. *Phytopathology* 102:S2.11.

Silva, W. L. da, and Clark, C. A. 2012. Infection of sweetpotato by fungal end rot pathogens prior to harvest. *Phytopathology* 102:S2.2-2.3.

Wosula, E. N., J. A. Davis, and C. Clark. 2011. Effect of *Ipomoea* host plants on stylet penetration behavior

of *Myzus persicae* (Sulzer) (abstract 0446). Proceedings of the 2011 Annual Meeting of the Entomological Society of America. Reno, Nev. November 14, 2011.

Déborah M. Xavier

Xavier, D., C. Overstreet, M. Kularathna, D. Burns, R.L. Frazier and C. M. Martin. 2012. Reniform nematode development across the variable soil texture in a Commerce silt loam field. Beltwide Cotton Conference, Orlando, Fla., January 2012.

Kularathna, M., C. Overstreet, D. Xavier, D. Burns, R. L. Frazier and C. M. Martin. 2012. Effects of soil fertility on reproduction and pathogenicity of reniform nematode (*Rotylenchulus reniformis*) on cotton. Beltwide Cotton Conference, Orlando, Fla., January 2012.

Xavier, D., C. Overstreet, E. C. McGawley, M. T. Kularathna, D. Burns, R. L. Frazier, and C. M. Martin. 2012. Population development of *Rotylenchulus reniformis* in different soil textures within a Commerce silt loam field. Society of Nematology meeting, Savannah, Ga., August 2012

Kularathna, M., C. Overstreet, E. C. McGawley, D. M. Xavier, C. M. Martin, and D. B. Burns. 2012. Effects of nutrients on reniform nematode (*Rotylenchulus reniformis*) pathogenicity and reproduction. Society of Nematology meeting, Savannah, Ga., August 2012

Xavier, D. M., C. Overstreet, M. Kularathna and C. M. Martin. 2012. Population development of *Rotylenchulus reniformis* in a field over a nine year period. Organization of Nematologists of Tropical America meeting, Cancun, Mexico, September 2012

Presentation at Multistate Research Project S-1046: “The influence of soil texture within Commerce silt loam soils on reproduction and pathogenicity of *Rotylenchulus reniformis* on cotton”.

Alumni news

Dr. Lucia Strader (Doherty) is an assistant professor of Plant Biology at Washington University, St. Louis and was a recent recipient of a \$1 million grant from the National Institute of Health.

Dr. Steve Footitt's recent work appeared in the Proceedings of the National Academy of Sciences: Footitt, S. et al (2011) Dormancy cycling in Arabidopsis seeds is controlled by seasonally distinct hormone-signaling pathways. PNAS 108: 20236-20241. This is his 2nd PNAS paper in the past three years.

PPCP faculty and students attend 2012 APS National Meeting

Twenty-three members of the Department of Plant Pathology and Crop Physiology at LSU, including 10 graduate students, one undergraduate student and one recent graduate, attended the 2012 American Phytopathological Society meeting in Providence, R.I., in August.

A number of the attending students and professors presented papers in the form of poster or oral presentations, and several students attended committee meetings, workshops and leadership opportunities.

Three of the attending students received travel awards to present at the meeting. Washington da Silva, graduate student with Chris Clark, received the H. David Thurston Student Travel Award and presented his paper "Flooding associated soft rot of sweetpotato storage roots caused by *Clostridium* species." Mala Ganiger, graduate student with Zhi-Yuan Chen, was selected as a speaker for the I. E. Melhus Symposium and received a travel

award for her paper "Proteomics-based study of host-fungus interactions between soybean and *Phakopsora pachyrhizi*." Michelle Warr, undergraduate student working with Raymond Schneider, received the Raymond G. Grogan Student Travel Award to present her paper, "Genetic relationships among subpopulations of competitive nonpathogenic strains of *Fusarium oxysporum* and *F. oxysporum* f. sp. *lycopersici*." Lawrence Datnoff, department head, received the JANE International Service Award. Others in attendance were: Ashok Chanda, Ruoxi Chen, Zhi-Yuan Chen, Chris Clark, Patrick Colyer, Ken Damann, Don Ferrin, Jake Fountain, Jong Hyun Ham, Clayton Hollier, Hari Sharan Karki, Kirandeep Kaur Mani, Rebecca Melanson, Josielle Rezende, Raymond Schneider, Bishnu Shrestha, Raghuwinder (Nick) Singh, Rodrigo Valverde and Everlyne Wosula. Felix Francis, former graduate of the department and current graduate student at the University of Delaware, also attended the meeting to present research conducted in Jong Hyun Ham's laboratory while at LSU.



Meetings Attended by Faculty

Zhi-Yuan Chen

APS annual meeting in August 2012; Field Rust Symposium meeting in Dec, 2011.

Christopher Clark

The National Sweetpotato Collaborators Group Annual Meeting – Birmingham, Ala., Feb. 4-5, 2012.

The Southern Division of the American Phytopathological Society – Birmingham, Ala., Feb. 5-7, 2012.

The American Phytopathological Society Annual Meeting – Providence, R.I., Aug. 3-7, 2012.

Marc Cohn

American Society of Plant Biologists, Austin, Texas. State of the Coast, Preparing for a Changing Future. New Orleans, La.

W-2168, Environmental and Genetic Determinants of Seed Quality and Performance meeting, Gainesville, Fla.

Jong Hyun Ham

2012 Annual Meeting of American Phytopathological Society, Providence, R. I. (8/4 – 8/8/2012)

2012 Rice Technical Working Group Meeting, Hot Springs, Ark. (2/27-3/1/2012)

2012 American Phytopathological Society Southern Division Meeting, Birmingham, Ala. (2/5-6/2012)

Clayton A. Hollier

SAAS & Southern Division APS, Southern Soybean Disease Workers, Rice Technical Working Group, Southern Region IPM meeting, the International IPM meeting, North Central Soybean Meeting.

Edward C. McGawley

2012 Cotton Conferences meeting, Orlando, Fla., 3-6 January.

2012 Multistate Research Project S-1046 Meeting, Orlando, Fla. January 7.

6th SETAC World Congress 2012. Berlin, Germany, 19-25 May

Syngenta Nematology Conference. Park City, Utah, 1-3 August.

Annual Meeting of the Society of Nematologists. Savannah, Ga., 12-16 August.

Meeting of the European Society of Nematologists. Adana, Turkey, 23-27 September.

Multistate Research Project 2 S-1046 and W-2186, 2013 Meeting. Biloxi, Miss., 31 October – 2 November.

Charles Overstreet

Beltwide Cotton Conference- Orlando, Fla.

S-1046 Regional Project Meeting- Orlando, Fla.

Louisiana Agricultural Technology and Management Conference- Marksville, La.

7th International IPM Symposium, Memphis, Tenn.

Society of Nematology meeting, Savannah, Ga.

Organization of Nematologists of Tropical America, Cancun, Mexico

Syngenta Seedcare Nematologist Meeting, Park City, Utah

Raymond W. Schneider

Annual Meeting, American Phytopathological Society. Providence, R.I. August 4-8, 2012.

50th Anniversary, Korean Society of Plant Pathology, Seoul, Korea. October 24-27, 2012. Invited lecture.

Raghuwinder Singh

Southeast Louisiana Nursery Association Trade Show, Folsom, La. September 28, 2012.

American Phytopathological Society Annual Meeting, Providence, R. I. August 4-9, 2012.

90th Louisiana Farm Bureau Annual Conference, New Orleans, La. June 28-29, 2012.

Mid-South Green Industry Conference, Pearl, Miss. June 19-20, 2012.

LSU AgCenter AgMagic, Baton Rouge, La. April 23-25, 2012.

Southern Division of American Phytopathological Society Annual Meeting, Birmingham, Ala. February 5-6, 2012.

Louisiana Agricultural Consultant Association Annual Meeting, Marksville, La. February 15-17, 2012.

Louisiana Turfgrass Association Annual Meeting, Baton Rouge, La. January 5, 2012.

Rodrigo A. Valverde

The 2012 Noble Foundation Virology retreat, Ardmore, Okla. The 2012 annual meeting of the American Phytopathological Society, Providence, R.I.

Meetings Attended by Graduate Students

Washington Luis da Silva

APS Annual Meeting, Providence, R.I. August 2012.
APS Southern Division Annual Meeting,
Birmingham, Ala. April 2012.
National Sweetpotato Collaborators Group Annual
Meeting, Birmingham, Ala. April 2012.

Ruoxi Chen

2012, APS Southern Division meeting.
2012, APS meeting.

Mala Ganiger

2012 Southern Division APS meeting, Birmingham,
Ala.
2012 Annual APS meeting, Providence, R.I.

Manjula Kularathna

Society of Nematology meeting, Savannah, Ga.

Rebecca Melanson

89th Annual Meeting of the Southern Division
American Phytopathological Society Meeting,
Birmingham, Ala., February 5-6, 2012.
2012 Tri-State Pecan Growers' Convention,
Natchitoches, La., June 14-15, 2012.
Annual American Phytopathological Society
Meeting, Providence, R.I., August 4-8, 2012.
Growing the Bioeconomy Conference, Banff,
Alberta, Canada, October 2-5, 2012.

Bishnu Kumar Shrestha

2012 Annual American Phytopathological Society
Southern Division Meeting, Birmingham, Ala.,
February 5-6, 2012.
2012 Annual American Phytopathological Society
Meeting, August 4-8, 2012, Providence, R.I.

Yi Wang

American Society of Plant Biologists, Austin, Texas.
State of the Coast, Preparing for a Changing Future.
New Orleans, La.
Southern Section – American Society of Plant
Biologists, Myrtle Beach, S.C.

Brian Ward

Southern Division, American Phytopathological
Society. Birmingham, Ala. February 8-10, 2012.

Michelle Warr

Annual Meeting, American Phytopathological
Society. Providence, R.I. August 4-8, 2012.

Déborah M. Xavier

Beltwide Cotton Conference- Orlando, Fla.
S-1046 Regional Project Meeting- Orlando, Fla.
Society of Nematology meeting, Savannah, Ga.
Organization of Nematologists of Tropical America,
Cancun, Mexico

2012 Plant Disease Management Guide popular AgCenter publication

Lead authors for the guide
are Drs. Donald Ferrin,
Jeffrey Hoy, Clayton Hollier
and Charles Overstreet of
the Department of Plant Pathology and Crop
Physiology. This guide contains suggestions
for management of the most important or more
prevalent diseases of Louisiana plants. It includes
information on fungicides, bactericides and
nematicides, as well as safety precautions for
using them. Special features include:

Suggestions for seed treatment of field crops
and vegetables

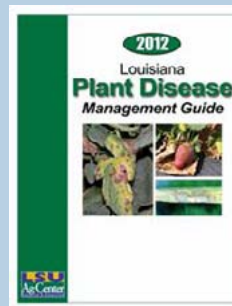
Soil fumigants, fungicides and decontaminants
for greenhouses

Appendix of trade names of fungicides and
nematicides used in the guide

Names and formulations of fungicides and
nematicides used in the guide

A spiral-bound, printed copy of the 2012 guide
is available for \$12 + tax and shipping. You can
order this book through the LSU AgCenter online
store:

<https://store.lsuagcenteronlinestore.com/>



Visiting Scientists/Students

Zhi-Yuan Chen

Hailson Alves, a Ph.D. student from Brazil, visited our
lab from April to Sept. 2012.

Supisara Khotsopa, an M.S. student from Thailand,
visited our lab from June to Sept. 2012.

Marc Cohn

Carla Proano, summer student intern, from the
University of Zamorano.

Jeff Hoy

Juliana Bombecini, 4-month intern from San Carlos
Federal University, Sao Paulo, Brazil: Epidemiology
and brown rust in sugarcane and potential
suppression with Ni and Cu.

Charles Overstreet

Dr. Patricia Donald –scientist with ARS USDA Crop
Genetics Research Unit in Jackson, Tenn. visited in
October.

Raghuwinder Singh

Allan Lobo from Honduras.
Kapil Kafle from Nepal.

Rodrigo Valverde

Dr. Eliezer Rodrigues de Souto, former student
of Dr. Valverde, visited the Department of Plant
Pathology and Crop Physiology of the LSU AgCenter
and discussed research and potential collaborations
in plant pathology with faculty and students. He also
presented a departmental seminar entitled: "Profile
of Maringa State University, the Graduate Program in
Agronomy and Research in Plant Virology."

New graduate students Fall 2012

Eduardo Chagas, Brazil, pursuing an M.S.
Degree with Dr. Raymond Schneider

Mary Helen Ferguson, Louisiana, pursuing a
Ph.D. Degree with Dr. Don Ferrin

Favio Herrera, Honduras, pursuing an M.S.
Degree with Dr. Rodrigo Valverde

Dongfang Hu, China, pursuing a Ph.D. Degree
with Dr. Zhi-Yuan Chen

Adam Malcomb, Louisiana, pursuing an M.S.
Degree with Dr. Marc Cohn

Chanda receives his Ph.D. degree

Ashok Chanda received his Ph.D. degree in in
plant pathology in August 2012. His advisory
committee included Drs. Zhi-Yuan Chen,
Raymond Schneider, Jeffrey Hoy, Kenneth
Damann and Christopher
Clark. His dissertation
was entitled "Molecular
approaches to detect
and control *Cercospora
kikuchii* infection in
soybeans." His research
was focused on developing
specific qPCR primers
and probe for detection
of *C. kikuchii* in soybean
plants. This unique set of primers detected
C. kikuchii at very early vegetative stages of
soybeans long before the development of visible
symptoms and also were used to quantify the
fungal biomass in soybean leaves that received
various fungicide treatments. The findings from
his research are very useful to soybean growers
to adopt various fungicide application regimes.
He found two novel genes in *C. kikuchii* that are
involved in cercosporin biosynthesis/regulation
using gel-based proteomics approach, and
showed that *C. kikuchii* gene disruption mutants
were less aggressive on soybean plants. His
initial efforts in employing virus induced gene
silencing (VIGS) approach to inhibit *C. kikuchii*
in planta seem to be promising. He is currently
a postdoctoral researcher in the Department of
Plant Pathology and Crop Physiology with a
joint assignment with Drs. Raymond Schneider,
Jeffrey Hoy, and Clayton Hollier, working on
molecular systematics of *C. kikuchii* and *C.
janseana*, and also looking for evidence for
sexual reproduction in two important sugarcane
rust pathogens, *Puccinia melanocephala* and *P.
kuehnii*.



Francis and Fountain take top honors at APS-SD Meeting

The 89th annual meeting of the American Phytopathological Society-Southern Division was held in February 2012 in Birmingham, Ala. During this meeting, a graduate student paper competition was held, and a record number of graduate students, 36 from nine universities, competed. Felix Francis, an M.S. candidate in the Department of Plant Pathology and Crop Physiology under the supervision of Dr. Jong Hyun Ham, won first place for his presentation entitled “Comparative genomic analyses of the rice pathogenic *Burkholderia glumae* strains reveals plasticity among the genomes.” Jake Fountain, an M.S. candidate in the department under the supervision of Dr. Zhi-Yuan Chen,



Felix Francis



Jake Fountain

won second place for his presentation entitled “Identification and analysis of differentially expressed maize WRKY transcription factors in response to *Aspergillus flavus* colonization of resistant and susceptible germplasm.”

Rush wins Fulbright Award

Tomas Rush, a graduate student in the Department of Plant Pathology and Crop Physiology, was awarded a Fulbright Scholarship. The Fulbright Scholarship is a prestigious and competitive award sponsored by the U.S. Department of State. The Fulbright program is the largest U.S. international exchange program, established to increase mutual understanding between the U.S. and other countries. Tomas’ research will focus on the use of fungal biological control agents against the pathogen *Burkholderia glumae* on rice panicles at Chulalongkorn University in Bangkok, Thailand from July 2012-March 2013 under the direction of LSU Plant Pathology alum, Dr. Pongtharin Lotrakul. Tomas completed his master’s degree in May 2012 under the direction of Drs. Raymond Schneider and Cathie Aime.

Warr wins American Phytopathological Society Travel Award

Michelle Warr, an undergraduate student conducting research with Dr. Raymond Schneider in the Department of Plant Pathology and Crop Physiology, won the American Phytopathological Society (APS) Raymond G. Grogan Student Travel Award. This highly competitive award was given to Michelle in recognition of her achievements in plant pathology research. The award will be used for travel expenses to the national APS Meeting in Providence, R.I., in August 2012 where Michelle will present her research findings titled Genetic Relationships among Subpopulations of Competitive Nonpathogenic Strains of *Fusarium oxysporum* and *F. oxysporum* f. sp. *lycopersici*.



PPCP NEWS

LSU

Department of Plant Pathology & Crop Physiology