From the Department Head

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.

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 2)
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!!!

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

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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. Palatsias (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 ecological role of the pathogenic fungus. 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 tropolone. Wray Birchfield in the 1960s developed management strategies, such as nematicides and host resistance, against the reniform nematode on cotton. John P. Hollins in the 1960s/1970s showed the importance of hidden problems in rice being caused by nematodes (Hirschmanniella and Criconemella). 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, Alternaria black spot of poimsettia and many others. He also described the new fungus Alternaria (Nimbya) alternantherae from alligatorweed stem blight 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 highly effective (95%) control method. This research led to the use of the pathogenic green alga, Cephalosporium 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. Damant and his student showed the newly discovered bacterial cause of ratoon stunting disease produced pecticenous xylem plugging gels in sugarcane that supported microcolony development of the bacterium.

- Milton “Chuck” Rush (1970-2009) initiated a comprehensive fungicide testing program for rose 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 panic 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. Holcomb (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 taught county agents and farmers in how to recognize plant diseases and the importance of integrated pest management in reducing environmental hazards. In 2005, he identified 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 Fuwarium 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 for landowners and extension agents in Louisiana.
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 that 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 2002, Dr. Schneider’s group discovered, described and published one new taxa, Guyanagaster, which is also pathogens of ornamental plant diseases: Xanthomonas and Rhizoctonia solani, which is also pathogenic on Indian hawthorn (Raphiolepis indica), which is also pathogenic on Indian hawthorn (Raphiolepis indica). It is a

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. 

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 spot), 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 LSU AgCenter’s 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 obducescens, 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 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.

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

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**Faculty Research Projects**

<table>
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<tr>
<th>Name</th>
<th>Project Description</th>
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<td>Reducing Aflatoxin Contamination of Maize through Understanding Its Interactions with Aspergillus flavus</td>
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<td>Enhance Soybean Production through Understanding Its Interactions with Phakopsora pachyrhizi and Cercospora kikuchii</td>
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<td>Christopher A. Clark</td>
<td>Biology and Management of Economically Important Sweetpotato Diseases</td>
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<td>Marc Cohn</td>
<td>Mechanisms of Recalcitrant Seed Death of Spartina alterniflora (smooth cordgrass); Mechanisms of Seed Dormancy in Red Rice</td>
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<td>Kenneth Damann</td>
<td>Biotic control of aflatoxin in corn and biology of Apegillus flavus</td>
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<td>Jong Hyun Ham</td>
<td>Molecular genetics and genomics of Burkholderia glumae</td>
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<td>Genetics of rice disease resistance to bacterial panicle blight and sheath blight</td>
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<td></td>
<td>Development of disease management strategies for bacterial panicle blight and sheath blight of rice</td>
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<tr>
<td>Clayton A. Hollier</td>
<td>Yield losses due to foliar pathogens of corn. Yield losses associated with Cercospora janseana in rice</td>
</tr>
<tr>
<td>Edward C. McGawley</td>
<td>LAB94034 Improved Management of Plant-Parasitic Nematodes Through Modern Diagnostic Tools and Increased Use of Host Resistance</td>
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<tr>
<td></td>
<td>LAB80425 Identification, Biology, and Management of Agriculturally Important Plant Parasitic Nematodes</td>
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<tr>
<td>Charles Overstreet</td>
<td>Site-specific management of Southern root-knot and reniform nematodes in cotton</td>
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**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, USA, 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.
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

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.

Josiel 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.

Deborah 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

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

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

 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.

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Raghawinder Singh
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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 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 mating type work to mutate Mat1-2 gene.

Collaboration with 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).

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.

Clayton A. Hollier
Crop loss assessment and its impact on global food security with INRA (France), Biofrisk (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.

Zhi-Yuan Chen
Nominated for the LSU AgCenter G & H Seed Research Excellence Award.

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

Marc Cohn
Collaboration with Dr. Talo Pastor-Corrales, AMCOE.

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 an outstanding career as an established Plant Pathologist. Received the American Phytopathological Society (APS) International Service Award.

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.

Clayton A. Hollier
Crop loss assessment and its impact on global food security with INRA (France), Biofrisk (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.

Zhi-Yuan Chen
Nominated for the LSU AgCenter G & H Seed Research Excellence Award.

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

Marc Cohn
Collaboration with Dr. Talo Pastor-Corrales, AMCOE.

Lawrence E. Datnoff
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Jeff Hoy
Received the St. James Agricultural Tour Outstanding Service Award.

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.

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

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**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.
- 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.

**Marc Cohn**

- Crop Science (in press)

**Kenneth Damann**


**Lawrence E. Damoff**


**Christopher Clark**


**H. David Thurston**

- Travel Award to attend the APS meetings in Providence, R.I.


**Asghar H. Karki**

- Received a $300 travel award to attend 2012 APS I. E. Melhus symposium.
- Received the 2012 APS I. E. Melhus symposium travel award.
- Won the prestigious C. W. Edgerton Award.
- Received the Plants Pathology and Plant Physiology Graduate Student Awards and Honors.
- Received the American Phytopathological Society Graduate Student Association (PPCP-GSA) - LSU Student Travel Award to attend the 2012 Annual Southern Division APS Meeting in Birmingham, Ala.
- Received the American Phytopathological Society, St. Paul, Mn.

**Jeff Hoy**

- Barrera, W., Hoy, J., and Li, B. 2012. Effects of temperature and moisture variables on brown rust 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 Luís 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.
- Received a $300 travel award, 2012.

**Rebecca Melanson**

- Received the American Phytopathological Society meeting in Providence, R.I. She was one of the speakers for I. E. Melhus Symposium to be held during the 2012 APS meeting.
- 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.

**Marc Cohn**

- Crop Science (in press)

**Hari Sharan Karki**

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

**Kenneth Damann**


**Lawrence E. Damoff**


Edward C. McGawley

Raymond W. Schneider

Raghuvinder Singh

Rodrigo A. Valverde
Raghuvinder Singh  


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. The LSU AgCenter Plant Diagnostic Center: Ornamental Horticulture E-News July 30 and 2011; Louisiana State University Agricultural Center, Publication 1802.

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  


Villordon, A.O., 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.


Marc Cohn  

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.”

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.
LAWRENCE E. DATTNOFF


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


EDWARD C. MCGAWLEY

2012 Cotton Conferences meeting, Orlando, Fla., 3-6 January.
6th SETAC World Congress 2012. Berlin, Germany. 19-25 May
Syngenta Nematology Conference. Park City, Utah. 1-3 August.

RAGHUWINDER SINGH


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

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
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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 five $300 SD-APS travel awards to attend the meeting. 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.

Presentations, Webinars and Posters by Graduate Students/Research Associates

Ashok Kumar Chanda

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


Mala Ganiger

Hari Sharan Karki


M. Kularathna

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.
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 toxfolin production in Burkholderia glumae that causes bacterial panicle blast 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 in 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, clementine and sycamore in Louisiana.”

Yi Wang


N.A. Ward


Michelle Warr


Evelynie Wosula


Deborah M. Xavier


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.
PCCP 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 Ganger, 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 Warren, 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, Raghuvinder (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.

Zhi-Yuan Chen
APS annual meeting in August 2012; Field Rust Symposium meeting in Dec, 2011.
Christopher Clark
Marc Cohn
Jong Hyun Ham
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

Meetings Attended by Faculty


Charles Overstreet
Beltwide Cotton Conference- Orlando, Fla. S-1046 Regional Project Meeting- Orlando, Fl. 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
Raghuvinder Singh
Rodrigo A. Valverde
The 2012 Noble Foundation Virology retreat, Ardmore, Okla. The 2012 annual meeting of the American Phytopathological Society, Providence, R.I.
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 available for $12 + tax and shipping. You can order this book through the LSU AgCenter online store: https://store.lsuagcenteronlinestore.com/
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, 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.