



# PPCP News



The Semiannual Newsletter of the Department of Plant Pathology & Crop Physiology

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Volume 3: Issue 1

Fall 2010

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## FROM THE DESK OF LAWRENCE E. DATNOFF.....



Although this newsletter is Volume 3: Issue 1 for Fall 2010, the information found within covers the time period from Fall 2009 through most of the Fall 2010 semester.

This was a very productive time for our department. Faculty published over 30 refereed manuscripts, 40 extension articles, gave numerous presentations locally, regionally, nationally and internationally; and attracted over \$4 million in grants while receiving a number of prestigious awards. Similarly, our M.S. and Ph.D. graduate students as well as intern students from Brazil, Honduras, and Thailand were highly engaged, and their efforts and outstanding contributions have further infused the department with vitality and enthusiasm, in spite of the gloom and doom scenarios of budget cuts to LSU AgCenter and main campus.

In this current newsletter, you will be able to see for yourself these wonderful activities and achievements by all that are having a profound effect on the science of Plant Pathology and Crop Physiology, Louisiana Agriculture and beyond. Happy Reading and .....



# Louisiana Disease & Agriculture Update

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## Bacterial Leaf Scorch of Landscape Trees and Shrubs in Louisiana

By **Don Ferrin, Rebecca Melanson, and Raghuwinder Singh**

Bacterial leaf scorch (BLS) is a broad term for a number of diseases of landscape trees and shrubs caused by the xylem-inhabiting bacterium *Xylella fastidiosa*. This bacterium infects over 100 species of plants from at least 46 families, but does not cause symptoms in all of them. Some common landscape trees and shrubs frequently exhibiting BLS symptoms include elm, maple, oak, sweetgum, sycamore, ginkgo, and oleander. However, not all strains of the bacterium infect or cause symptoms in all of the hosts. These diseases occur from coast to coast throughout the southern U.S. and are quite prevalent in Louisiana, particularly on oaks. Other common diseases in the South caused by *X. fastidiosa* include Pierce's disease of grapes, plum leaf scald, phony peach, and pecan bacterial leaf scorch. Additionally, the pathogen was recently found causing leaf scorch and decline of southern highbush and rabbit-eye blueberries.



The most obvious symptom of BLS is the brown, marginal necrosis along the edges of the leaves that typically occurs in the late summer and fall and is often mistaken for drought and/or heat stress. The bacterium that causes the disease inhabits the xylem (or water-conducting) tissues of the infected trees. As the bacterium multiplies and spreads throughout the tree, it blocks the flow of water and nutrients. Infected trees are then more sensitive to environmental stresses such as heat, drought, and wind. Over time, the infected trees gradually decline exhibiting twig and branch dieback, and eventually die. While many infected hosts show no symptoms (i.e., black berry, many grasses and vines, etc.), they can potentially still serve as sources of inoculum for spread of the pathogen.

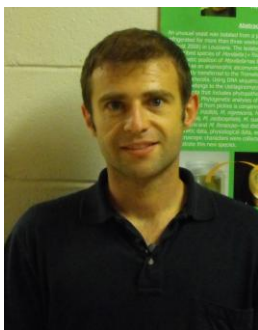


Oak trees infected by *X. fastidiosa* may show a variety of symptoms in addition to the typical leaf scorch. Infected trees may leaf out later in the spring than healthy trees and may suddenly drop their leaves. This may occur over the whole tree or be limited to individual branches or sectors of the tree. These trees will then leaf out again, but the foliage may remain relatively sparse compared to healthy trees. Occasionally, large branches scattered throughout the canopy may die suddenly as well.

The bacterium is spread primarily by sharpshooter leafhoppers and other xylem-feeding insects such as spittlebugs. Once a tree is infected, there is no cure. The use of cultural practices that reduce environmental stresses, particularly water stress, may help prolong the life of infected trees. Management of these diseases relies on the removal of declining trees and replanting with species that are not known to be susceptible to the disease.

# New Students (Fall 2009/Spring 2010/Fall 2010)

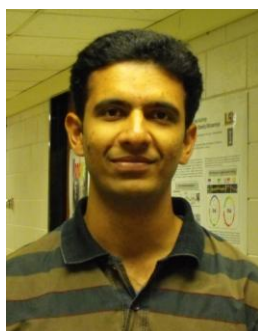
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**Sebastian Albu** joined **Dr. Aime's** lab in the fall of 2010 in pursuit of a master's degree in plant pathology. Prior to earning a B.S. in biology from the Metropolitan State College of Denver in 2005, he received a B.A. in music in 2000 from the University of Pittsburgh, where he studied jazz performance and composition. Sebastian will be working among mycologists involved with the AFTOL project as well as exploring pteridophyte phylloplane yeast systematics and ecology. He also enjoys playing basketball, travelling and growing things from seeds.



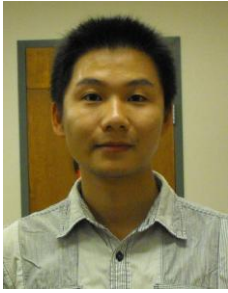
**Jake Fountain** joined the department in the Fall of 2010 as a M.S. student under **Dr. Chen**. He obtained his B. S. in Biology at Georgia Southwestern State University in his home state of Georgia. He also worked with the USDA Agricultural Research Service in Tifton, GA under Dr. Baozhu Guo and assisted in research of the molecular aspects of corn and peanuts. He will be studying the expression of genes coding for transcription factors related to aflatoxin contamination reduction in corn, as well as the application of trans-silencing techniques toward the development of transgenic, aflatoxin resistant corn lines. After graduating with his M. S. degree, he would like to continue on and pursue his Ph.D. Jake enjoys Bible study, going to the movies, and video gaming.



**Felix Francis**, an M. S. student under **Dr. Ham**, joined the department in the Fall of 2010. He obtained his baccalaureate with a Major in Forestry, from Kerala Agricultural University, India. His research interests include comparative genomics of *Burkholderia glumae*; and will work on deciphering the virulence mechanism and host-pathogen interactions in rice panicle blight disease by employing various bioinformatics tools. On completion of his M.S. program, he would like to continue for his Ph.D. Felix likes photography, reading, hiking and swimming during his leisure time.



**Mala Ganiger** is a Ph.D. student from Dharwad, India. She joined **Dr. Chen's** lab in Fall 2009 and is working on understanding the molecular basis of resistance to *Phakopsora pachyrhizi* (Soybean Rust) in soybeans using proteomics. She earned a B.S. in Agriculture and a M.S. in Agricultural Biotechnology from University of Agricultural Sciences, Dharwad. Her master's thesis was on "Cloning and Expression of Endoglucanase Genes from *Trichoderma spp.* in *Saccharomyces cerevisiae*". After obtaining her M.S., she worked as a technical assistant at the Institute of Agriculture Biotechnology under the project "Cloning of *Bt* genes from the soils of north east parts of India". She also worked as a Senior Research Fellow and later as a Research Associate in the Agriculture Research Station, Dharwad under the project, "Gene stacking in *Bt* cotton". After graduation, Mala hopes to continue her research in molecular aspects of soybean pathology. She enjoys cooking, trying dishes from different cultures.



**Youwen Gong** joined the department in the Fall of 2009 as a Ph.D. student under **Dr. Aime**. He is from Hunan Province, obtaining his Bachelor's and Master's degrees in Plant Pathology at the China Agricultural University in 2004 and 2007, respectively. He is working with developing molecular tools for the identification, classification, and characterization of rusts and other phytopathogenic fungi. He wants to be a university faculty member when he graduates. Youwen enjoys playing pingpong and volleyball.



**Kirandeep Kaur** joined the department in the Fall of 2009 as a Ph.D. student under **Dr. Hollier**. She obtained her B.S. in Agriculture and her M.S. in forestry at Punjab Agricultural University in her home country of India. Kiran is studying the Cercospora complex in rice and is working toward developing a predictive model for the management of the disease in rice. Kiran enjoys cooking, visiting new places and being with her friends.



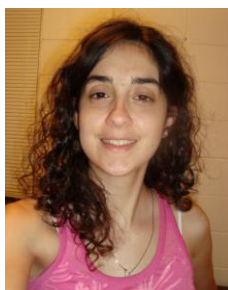
**Manjula Kularathna** joined the department in Fall 2010 as a M.S. student under **Dr. Overstreet**. He obtained his B.Sc. in Parasitology from University of Colombo, Sri Lanka. He will study "Effects of Nematodes and Fertility on Management Zones in Cotton" for his research. He would like to continue his graduate studies towards a Ph.D. after completing his Master's degree. Manjula loves music, drama and sports.



**Addison Plaisance** joined the department in Summer 2010 as a M.S. student under **Dr. McGawley**. He graduated with his B.S. in Biological Sciences and Minor in Mass Communications in May 2010 from Louisiana State University. He is currently studying the effects of Spiral, Stunt, and Ring nematodes on the urban lawn grass industry. He plans to sample residential lawns throughout East Baton Rouge Parish and create a database of nematode species and quantities for the area for reference. After gaining his M.S., he plans to pursue a Ph.D., possibly recording the nematodes in undocumented areas of the world. Addison enjoys fishing, camping, hiking, and other outdoor activities.



**Andrew Rodriguez** joined the department in the Spring of 2010 as a M.S. student under **Dr. Aime**. Andrew is currently compiling a monograph of any and all rusts in Louisiana. A native of New Orleans, he obtained his B.S. in Biological Sciences at LSU. He enjoys cooking, playing sports, and anything fun.



**Debórah Xavier** joined the department in the Spring of 2010 as a M. S. student under **Dr. Overstreet**. She obtained her B.S. in agronomy at the Federal University of Vicosa in her home country of Brazil. She will be studying reniform nematodes on cotton in relation to soil texture and will work on the development of management zones. After graduating with her M. S. degree, she wants to pursue her Ph.D. Debórah enjoys cooking, dancing, and group sports.

## Student Intern from Zamorano University, Honduras

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**Mr. Alejandro Castro** from Zamorano University completed a 4-month plant diagnostic internship with **Dr. R. Singh**. Students at Zamorano are required to complete a semester-long internship as a part of their undergraduate degree requirement. Alejandro came to LSU during Spring 2010. He learned conventional and modern diagnostic techniques to solve plant health problems, including microscopy, culture isolation of plant pathogens, enzyme-linked immunosorbent assay, Biolog to identify plant pathogenic bacteria, DNA extraction and quantification, and both conventional and real time PCR. He is coauthoring a manuscript titled 'First Report of Fusarium Wilt of Canary Island Date Palm Caused by *Fusarium oxysporum* f. sp. *canariensis* in Louisiana.'

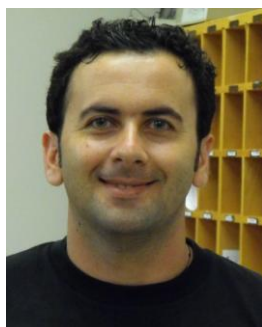


## Student Interns from MOU's with Brazilian Universities

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**Ivana Fonseca**, a Ph.D. student from the University of Sao Paulo, Brazil, worked with **Dr. Hoy** to determine if nutrients, including Ni, Cu, Si, and Cl, might inhibit brown rust development in sugarcane. Ivana came to LSU for 10 months on a "sandwich" program that allows students working on a Ph.D. in a Brazilian university to work at another university during their degree program to get additional experience to enhance their academic training. Ivana is working towards a degree in soil science. Her expertise in soil science was needed for this project, and Ivana obtained experience working with plant disease/nutrient interactions. Therefore, both parties benefited from the arrangement. Ivana developed methodology to use greenhouse-grown plants inoculated and held under controlled conditions to determine the potential of nutrients for brown rust control. Ivana returned to Brazil in June 2010 and expects to finish her Ph.D. in January 2011.



**Alessandro A. Fortunato**, a M.S. graduate from the Viçosa Federal University, Viçosa, Brazil, worked with **Dr. Chen** on a soybean rust project to determine what proteins are induced during soybean rust infection using proteomics. Alessandro came to LSU as a visiting scholar from Oct. 2009-March 2010. During his visit, he learned how to perform soybean rust inoculations, protein extractions, DNA and RNA isolations from infected soybean leaves, and principles of proteomics. He also actively participated in lab meetings, including presentation of published literature relating to our research programs. As a result of the training he received here, he will return in the near future to conduct a portion of his Ph.D. via the 'sandwich program' with Viçosa Federal University.



**Josielle Rezende**, a M.S. graduate student from the Universidade Federal de Uberlândia, Uberlândia, Brazil, visited **Dr. Chen** between Jan. to Oct. 2010 as a visiting scientist. She worked on the aflatoxin project to evaluate the newly released aflatoxin-resistant corn lines from Africa under Louisiana field conditions. She helped in planting and managing the corn fields. She learned how to hand-pollinate corn plants, inoculate immature corn ears with *Aspergillus flavus*, a fungus that naturally infects corn and produces toxins subsequently, and collect immature kernel samples at various growth stages. While working on this project, she also learned to transform Arabidopsis plants with corn genes having potential antifungal properties, and to identify transgenic plants through antibiotic selections. Her enthusiasm and passion for field studies won her an opportunity to come back to join the department on a Ph.D. program.

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## Student intern from Thailand

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From 25 May to 20 August, Mr. Nattawut Boonyuen conducted research under the guidance of **Dr. Cathie Aime**. The following is a summary of what he did and his findings:

Rust fungi are the largest group of plant disease fungi, approximately 8,000 species or approximately one-third of all described Basidiomycota. Rust fungi cause diseases in economically important plant species such as wheat, sugarcane, soybeans, coffee, ornamental flowers, fruit trees, cereals, legumes, composites and forest trees. Classification of rust families was traditionally based on morphology of the telium and teliospores, but the application of molecular characters to rust systematics has helped resolve many long-standing questions about rust evolution and systematics.

In this study, additional loci were targeted and amplified from an exemplar set of rust taxa to determine their utility for inter- and infra-specific studies of rusts. Screened loci were RPB1 (DNA dependent RNA polymerase II largest subunit), RPB2 (DNA dependent RNA polymerase II second-largest subunit), translation elongation factor (EF1-alpha) and  $\beta$ -tubulin. Genes were amplified from three target rust species (*Cronartium quercuum*, *Uromyces appendiculatus*, and *Gymnoconia nitens*) using degenerate primers. Efforts are now underway to develop rust-specific primers for each locus based on the data generated in this study.

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## UNDERGRADUATE STUDENT INTERN UNIVERSITY OF MARYLAND

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**Clare Whittaker**, a junior in biology at the University of Maryland, has a special interest in fungal genetics. For two months during the summer 2010, she worked with **Dr. Cathie Aime** on DNA extractions, PCR, and nuclear RNA sequencing of tropical fungi and basidiomycete yeasts.

# Graduation

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**Peipei Han**, Department of Plant Pathology and Crop Physiology, Louisiana State University and LSU AgCenter, successfully defended her master's thesis entitled "Over-expression of a maize WRKY transcription factor, and its effect on Arabidopsis response to biotic & abiotic stress." Her major professor was **Dr. Zhi-Yuan Chen**. She was selected as a recipient of the Tom W. Dutton Scholarship Award 2009-2010 for having demonstrated a commitment to community service, and making extraordinary efforts in the success of her organization. Peipei is currently pursuing a M.S. Business Degree at LSU.



**Sunjung Park**, Department of Plant Pathology and Crop Physiology, Louisiana State University and LSU AgCenter, successfully defended her Ph.D. dissertation entitled "Study of host-fungus interactions between soybean and *Phakopsora pachyrhizi* using proteomics." Her major professor was **Dr. Zhi-Yuan Chen**. While she pursued her Ph.D., she received a Student Travel Award from APS and a Korean Honor Scholarship from the Ambassador of the Republic of Korea. Dr. Park is currently a postdoctoral research associate with USDA-ARS in Arizona.



**Guiying Su**, Department of Plant Pathology and Crop Physiology, Louisiana State University and LSU AgCenter, defended her master's thesis entitled "Low Co-cultivation Temperature at 20°C Improved *Agrobacterium tumefaciens*-Mediated Transformation of Tobacco Leaf Disks." Her major professor was **Dr. Norimoto Murai**. Guiying is currently working with Dr. Charles Overstreet as an extension research associate in Department of Plant Pathology and Crop Physiology at LSU.



**Rebecca Sweany** Department of Plant Pathology and Crop Physiology, Louisiana State University and LSU AgCenter, received both her Bachelors and Masters from LSU. She worked in the department for seven years. On March 1<sup>st</sup>, she successfully defended her master's thesis under the direction of **Dr. Ken Damann** entitled "A comparison of soil and corn kernel *Aspergillus flavus* populations: evidence for niche specialization". She currently works with Drs. Clark, Labonte, and Pica in SPESS, primarily working with *Rhizopus* soft rot and also with other sweetpotato rots evaluating new lines of sweetpotatoes for resistance to soft rot and looking at non-chemical post harvest treatments of sweetpotato and their potential to reduce the incidence of *Rhizopus* soft rot.



# Graduate Student Association Updates & Events

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## New Officers: 2009 - 2010

President: Freddy Garces  
Vice President: Ashok Chanda  
Secretary: Rebecca Melanson  
Treasurer: Bishnu Shrestha

Journal Club Committee Chair: Ashok Chanda  
Fundraising Committee Chair: Nicole Ward  
Social/Hospitality Committee Chair: Rebecca Sweany (August – May),  
Rebecca Melanson (May – August)  
Bulletin Board Committee Chair: Ruoxi Chen, Kirandeep Kaur  
Newsletter Editor: Rebecca Melanson

## Bowling Bonanza

By Debórah Xavier

On April 30, just before finals, PPCP graduate students and friends took a break from studying and went bowling at Circle Bowl. It was amazing! Some of the night's attendees had never bowled before and some were almost professionals! Each person had a different bowling style; however, the best performers were Ashok and Andrew. Both scored well and also made attempts to knock pins down by releasing the ball from a backwards and between the legs position. Yen, the only left-handed person of the group, was also among the top scorers of the night. Despite low scores from the first-time bowlers of the group, everyone had a great time. We look forward to our next bowling event and hope that more people will join us. *Geaux PPCP!*



## Graduation Ceremony, Spring 2010

By Bishnu Shrestha

Graduation is one of the happiest moments of a graduate student's life. Four students, **Sunjung Park** (Ph.D.), **Peipei Han** (M.S.), **Guiying Su** (M.S.), and **Rebecca Sweany** (M.S.) experienced this moment on May 21, 2010, as they graduated from the Department of Plant Pathology and Crop Physiology (PPCP) at LSU. In celebration of this happy occasion and in honor of their achievements and successes, the PPCP Graduate Student Association (GSA) held a graduation celebration on May 7. The students' major advisors and families, as well as the PPCP graduate students and Dr. Datnoff, were invited to take part in the celebration to share memories, refreshments, and cookie cake. A short Power Point presentation featuring the graduates was presented by **Freddy Garces**, PPCP GSA president, to help everyone reminisce about their time in the department. Following the presentation, each graduate was presented with a framed photo from a graduate student event in which she participated during her time in the department. Surrounding the photograph were the signatures of their fellow PPCP graduate students. Before ending the celebration, each graduate expressed their thanks or shared something about their experiences in the department. We hope our graduates have much success in the future!

**Satsuma Harvest** Last fall on November 21st, **Drs. Charlie and Karen Overstreet** had the graduate students over to their house for lunch. The students were fed wonderful beef brisket sandwiches, brownies and ice cream. The lunch was delicious, but Dr. Overstreet had the students over to help him out with a little gardening. Last fall, there was a bumper crop of satsuma oranges, so Dr. Overstreet asked the students to clean off one of his trees. He also shared his chewing sugar cane with everyone. We learned from **Kirandeep Kaur** how to properly crack sugar cane for eating. Apparently, it is very time consuming to use a knife; instead it is much better to tear the sugar cane apart with your teeth. A fun day was had by all in attendance, and everyone left with a full stomach and a trunk full of satsumas.



The PPCP Graduate Student Association hosted Dr. Joyce Loper of USDA-ARS, Corvallis, OR on March 16-18. Upon Dr. Loper's arrival on Tuesday March 16, students and faculty treated her to a traditional Cajun meal at Boutin's Restaurant. Dr. Loper tried her hand at peeling crawfish, but opted for a meal that required less work.



On Wednesday, after a departmental tour and lunch with faculty, Dr. Loper presented a seminar on the isolation and identification of rhizoxin analogs from *Pseudomonas fluorescens* Pf-5 by using a genomic mining strategy. At the end of the busy work day, Dr. and Mrs. Chris Clark hosted both students and faculty for a Louisiana-themed pot luck dinner. On Thursday, students joined Dr. Loper for tours of Bluebonnet Swamp and the Rural Life Museum, as well as a picnic at Burden Plantation.

Each year, the Graduate Student Association has had the opportunity to select a guest speaker for our departmental seminar series. The program was initiated to give graduate students an opportunity to interact with professionals outside of our department, to broaden our educational experiences, and to develop professional relationships. Through the course of events, students were able to network with Dr. Loper, broaden their research knowledge, and discuss USDA job opportunities. Most students agreed that this visit was one of the most rewarding events of the semester.



# Departmental Visitors

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In addition to the visit by Dr. Joyce Loper, described above, the department was pleased to host the following visitors:

**Dr. Francisco Xavier Ribeiro do Vale**, Professor of Plant Pathology, Universidade Federal de Vicosa, visited the department during the week of August 31, 2009. He interacted with students and faculty and led a workshop on the use of “Quant,” an image analysis software package that he co-authored.

**Dr. Wade Elmer**, Plant Pathologist, Connecticut Agricultural Experiment Station, visited the department during the week of October 19, 2009. He presented a seminar entitled “Investigation of *Fusarium* spp. on Declining *Spartina alterniflora* Plants in Atlantic Salt Marshes Affected by Sudden Vegetation Dieback.” He met with experts on coastal marsh ecology from LSU and the U.S. Geological Survey in Lafayette, and they arranged a marsh tour by airboat for him and Dr. Datnoff.

**Dr. Morris Levy**, Department of Biological Sciences, Purdue University, visited the department during 10-12 February 2010. His research focuses upon the evolutionary genetics of the rice blast fungus. From the results of his group’s research, successful design strategies for resistance breeding to blast have evolved for application in the Americas and Asia. He presented a seminar entitled “Understanding a Cereal Killer: Virulence Evolution in the Rice Blast Fungus.” In addition, Dr. Levy has been active in diversity graduate student recruiting, and he also presented a seminar entitled “Building Diversity in Graduate Programs: SACNAS and Other Approaches.”

## Faculty Updates & Events

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**Dr. M. Catherine Aime** spent one month in Guyana working on a NSF funded study of the macrofungi of the Pakaraima Mountains of Guyana, a more than 10 year collaboration with researchers at Humboldt University and Duke. She presented an invited dinner lecture for the North American Mycological Association 49th Annual Meeting and Foray (Lafayette, LA 11/26-29, 2009); gave invited presentations at the 2009 National Soybean Rust Symposium (New Orleans, LA 12/9-11/2009); the 2009 Basic Animal and Plant Biology ACE meeting (Baton Rouge, LA 12/15/2009); at the NSF Assembling the Fungal Tree of Life annual PI meeting (Durham, NC, 2/21/2010); and the Mycological Society of America Annual Meeting (Lexington, KY, 6/27-7/1/2010).

**Dr. Christopher Clark** attended the Sweetpotato SCRI Planning Meeting, National Sweetpotato Collaborators Group Annual Meeting, and Southern Division, APS Annual Meeting, Orlando, FL February 4-8, 2010; the National Clean Plant Network, Davis, CA – May 10-13, 2010; and the International Plant Virus Epidemiology Symposium, Ithaca, NY – June 20-24, 2010.

**Dr. Marc Alan Cohn**, Professor of Seed Biology & Crop Physiology, was profiled in two recent issues of GROWING Magazine. In addition to highlights of his work, noted columnist Rebekah Fraser reported on Cohn’s concern for the future of academic seed research and the need for seed biologists in the United States. Access the links via the following: <http://www.growingmagazine.com/article.php?id=6008> [Changes in Academic Seed Research, October 2010] <http://www.growingmagazine.com/article.php?id=5934> [Long-Term Research into Recalcitrant Seeds Begins to Bear Fruit, September 2010].

**Dr. Donald Ferrin** served as the LSU AgCenter's liaison to the IR-4 Project, and as a member of the governing body of the Citrus Clean Plant Network, and started the Louisiana Plant Pathology blog (<http://www.laplantpath.wordpress.com/>), which is intended as a means of keeping county agents and other interested parties informed about current diseases affecting horticultural crops in Louisiana and other issues related to plant pathology that may be of interest to them.



**Dr. Jeffrey Hoy** participated in the International Society of Sugar Cane Technologists Congress XXVII in Veracruz, Mexico, March 5-11, 2010 as the Councilor for the American Society of Sugarcane Technologists. The Mexican sugar industry hosted an excellent congress with field tours focusing on sugarcane production and processing, a large trade show, and social events, as well as research presentations by delegates from sugar industries all over the world. Dr. Hoy is shown with an old friend, Dr. Y. Lin (right) from Fujian, China, who was a visiting scientist at LSU during 1985.

A new multimedia publication, authored by **E.C. McGawley**, **C. Overstreet** and M.J. Pontif, two years in the making, entitled "Introduction to Nematodes" has been completed and published to the Internet. It is available for free download on the websites of the Society of Nematologists, the Organization of Nematologists of Tropical America, and The Mediterranean Society of Plant Pathology and will soon be linked to the website of the European Society of Nematology. This publication contains 99 multi-layered slides, 481 photographs, 155 illustrations, 17 tables and 14 videos.

**Dr. Edward McGawley** has started a new research project on "Efficacy of *Pasteuria* spp. for management of sting nematodes on turf and reniform nematodes on cotton and soybean" and a new collaboration with Dr. Salliana Stetina (USDA-ARS, Stoneville, MS) in molecular characterization of virulence phenotypes of *Rotylenchulus reniformis*, as well as the new regional project (S-1046): "Improved management of plant-parasitic nematodes through modern diagnostic tools and increased use of host resistance".

**Dr. Charles Overstreet** attended the Beltwide Cotton Conference, New Orleans, LA January 4-7, 2010; the 13th Annual National Conservation Systems Cotton & Rice Conference, Tunica, MS January 12-13, 2010; the Forty-Ninth Annual Meeting of the Society of Nematologists, Boise, Idaho July 11-14, 2010; and the 3rd Conference on Precision Crop Protection, Bonn, Germany, September 19-21, 2010.

**Dr. Raghuwinder Singh** had his image selected for Plant Disease Journal Cover Page (2009), Leaf of *Secchium edule* showing irregular, yellow spots of powdery mildew caused by *Podosphaera xanthii*. Plant Dis. 93 (12); volunteered at the LSU AgMagic. Baton Rouge, Louisiana. April 24, 2010; and volunteered at the National Plant Diagnostic Booth at the APS Annual Meeting. Portland, Oregon. August 3, 2009. Attended meetings as follows: Center for Plant Health Science and Technology Workshop on *Phytophthora ramorum* Detection in Soil and Water. Clemson, SC, October 8-9, 2009; LSU AgCenter Ornamental/Turfgrass Field Day. Burden Center. Baton Rouge, LA. October 15, 2009; 3<sup>rd</sup> Plant Bio-Security Symposium. Southern University and A & M College. Baton Rouge, LA. November 11-12, 2009; Citrus Huanglongbing (HLB) & Potato Zebra Chip (ZC) Conference. McAllen, TX. November 16-18, 2009; Real Time PCR Training by BioGx. A Short Course in Real-Time PCR Basics and SmartCycler Use. Birmingham, AL, November 23-24, 2009; 2<sup>nd</sup> National Plant Diagnostic Network Meeting. Miami, FL, December 06-10, 2009; Southern Division of American Phytopathological Society Annual Meeting. Orlando, FL, February 7- 9, 2010; Landscape Pest Management Workshop. Hammond Research Station. Hammond, LA, February 23, 2010; 2<sup>nd</sup>

Landscape Pest Management Workshop. Hammond Research Station. Hammond, LA, May 11, 2010; The NPDN/PSU Plant Disease Diagnostic Workshop. University Park, PA, May 18-20, 2010.

**Dr. Rodrigo Valverde** spent five months on sabbatical leave in Spain where he conducted research on dsRNA viruses at the “Consejo Superior de Investigaciones Cientificas” in Malaga. He was awarded a grant, “Non-pathogenic dsRNA plant viruses: Molecular and biological interactions with pathogenic viruses of pepper and tomato” by the Ministry of Education of the government of Spain to partially support his sabbatical leave. While there, he presented an invited seminar, “Plant viruses that do not cause symptoms” at the Center for Research on Agricultural Genomics, Barcelona, Spain, on February 19, 2010. He was also a member of the examining tribunal of Helena Piñar Trenado, Ph.D. thesis, “Molecular characterization of DNA satellites of sweet potato (*Ipomoea batatas*) and *I. indica*: Taxonomic and phylogenetic implications”, Department of Cell Biology, Genetics and Physiology, University of Malaga, November, 2009. He served as a member of a grant review panel of the National Institute of Food and Agriculture (NIFA), Competitive Programs, October 14-15, 2009, Washington DC; also attended and presented a paper, “Biological and molecular properties of an endornavirus infecting bell pepper (*Capsicum annuum*)” at the II Meeting of the Spanish Network of Plant Virology.

**Dr. Raymond Schneider** led a tour of West Coast departments of plant pathology following the APS meeting in Portland, OR in 2009. Students on the tour included **Nicole Ward, Rebecca Melanson, Paul Mumma, and Ashok Chanda**. We participated in the departmental picnic at Oregon State University and were hosted by Dr. Walt Mahaffee, Dr. Joyce Loper and Dr. Jay Pscheidt. Dr. Doug Gubler hosted us at UC Davis, and Dr. Steve Lindow and Dr. Brian Staskawicz did the same at UC Berkeley. Our next stop was the USDA facility in Salinas, CA where Dr. Frank Martin, Dr. Carolee Bull, and Dr. Krishna Subbarao spent the day with us. The entire trip, along with a few photos, was described in *Phytopathology News* (October 2009, Volume 43, Number 9).

**Dr. Jeff Hoy and Dr. Raymond Schneider** led a tour of south Texas agriculture and Texas A&M research facilities at Weslaco during the week of April 5th, 2010. Students on the tour included **Ruoxi Chen, Freddy Garces, Youwen Gong, Hari Karki, Kirandeep Kaur, Nicole Ward, Alejandro Castro, Evelyn Wosula, and Deborah Xavier**. Dr. Tom Isakeit and Dr. Jose Amador made all the arrangements and accompanied us on visits to several farms, packing houses, and other production facilities. Dr. Amador and his lovely wife hosted us at their home for continued discussions and refreshments. Dr. Jose Cosme Guerrero from Mexico accompanied us during most of our visits.

# Conferences/Workshops

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## Indo-US Workshop on Silicon in Agriculture

By: N. Prakash

The Indo-US workshop on silicon in agriculture was organized at the University of Agricultural Sciences, Bangalore, India during 25-27 February 2010. Recognizing the importance of silicon in agriculture, the Indo-US Science and Technology Forum (IUSSTF) funded this important workshop, which was jointly hosted by the University of Agricultural Sciences, Bangalore and Louisiana State University AgCenter, USA. This workshop was facilitated by the Indian Society of Soil Science, Bangalore chapter.



The inaugural function was held at the North Block Auditorium at the GKVK campus, UAS, Bangalore on 25 February 2010 at 10.00 am. On behalf of the University and Bangalore Chapter of ISSS, Dr. H. Shivanna, Director Research UAS, welcomed the dignitaries, delegates and guests.

Honorable Minister of Agriculture, Govt. of Karnataka, and Shri S.A. Ravindranath inaugurated the workshop by lighting the lamp (symbol for bringing forth knowledge). A technical bulletin on “Status, categorization and calibration of available silicon in rice soils” and a compendium of “silicon research” at UAS Bangalore also were released by Shri S.A. Ravindranath.

In his inaugural address, Shri S.A. Ravindranath urged the Indo-US scientists who have pioneered research on silicon in agriculture to create awareness among stake holders regarding the role of silicon in agriculture, and provide a platform to discuss research data, promote interdisciplinary studies and prepare a road map for future research on silicon. He urged the scientists and the fertilizer industry representatives to utilize the opportunity to design and manufacture products that are economical and beneficial to the agricultural/horticultural farming community.

In his brief report about the workshop, the organizing secretary of the workshop, Dr. N. B. Prakash, Associate Professor of Soil Science, UAS, Bangalore, stressed the need to create greater awareness regarding silicon research and related developments, identifying research needs with respect to use of silicon in agriculture and develop initiatives to formulate programs to address them. He also stressed the need for establishing a centre of excellence on silicon in agriculture at UAS, Bangalore.

Dr. P.G. Chengappa, Vice Chancellor, UAS Bangalore released the abstract cum souvenir of the Indo-US workshop on silicon in agriculture. In his presidential address, Dr. P.G. Chengappa exhorted the plant scientists to take major responsibility in maximization of crop yields. Further, he made a mention on lack of awareness on the importance of silicon in agriculture and the need to create awareness, as this element is important in plant growth and development as well as disease resistance.

Dr. Arabinda Mitra, Executive Director, IUSSTF, addressed the delegates and briefly highlighted about “Indo-US Science and Technology collaboration - perspective and opportunities.”

**Dr. Lawrence E. Datnoff**, Professor and Head Department of Plant Pathology and Crop Physiology, Louisiana State University AgCenter, Louisiana, USA released the book on Silicon in Indian Agriculture authored by Drs. N. B. Prakash, N. K. Savant and K. R. Sonar.



Inaugural function formally came to a close with a vote of thanks by Dr M.S. Badrinath, President of ISSS, Bangalore chapter, UAS Bangalore.

Soon after the inauguration, there were two keynote addresses on silicon: ‘The role and beneficial effects of silicon in different crops’ by **Dr. Lawrence E. Datnoff** and ‘Similar effects of silicon on plants and humans’ by Dr. Henk-Maarten Laane.

There were eight sessions in the workshop with seven speakers from USA and six speakers from India. Speakers from USA included Drs. **Lawrence E. Datnoff** (LSU AgCenter), Jonathan M. Frantz (USDA), Joseph R. Heckman (Rutgers University), Scott Leisner (University of Toledo), Stephen M. Marek (Oklahoma State University), Christopher M. Ranger (USDA) and Neil Mattson (Cornell, USA). Speakers from India included Drs. N. B. Prakash (UAS, Bangalore), S. R. Voleti (DRR, Hyderabad), Kalyan Singh (BHU, Varanasi), A. Balasubramaniam (TNAU, Tamilnadu), C. Narayanaswamy (IFFCO, Vijayawada, and Hyderabad) and D. B. Phonde (VSI, Pune).

There also was a brain storming session on silicon fertilizers in different countries and future perspectives in India on 26 February 2010, and the session was chaired by Dr. R. K. Tewatia, Chair of Fertilizer Association of India, and New Delhi. Various fertilizer companies such as Coromandel, IFFCO, MCF, Privi Parma, SiLife Ltd (Netherlands) and Vedant Agritech also participated in the session. These companies showed a great interest in promoting silicon sources as amendments or fertilizers depending on their usages. Information on silicon sources and fertilizers in the U. S. and other countries was briefly explained by **Dr. Lawrence E Datnoff**. The discussion on considering silicon as beneficial element also was very well received by the delegates. Intense discussions led to fertilizer industries considering a course of action for the production and marketing of silicon materials for agricultural/horticultural crops.

The plenary session on collaborative silicon research was chaired by Dr. Joseph R. Heckman, wherein Dr. P.G. Chengappa, Honorable vice chancellor, UAS Bangalore expressed his gratitude to IUSSTF, New Delhi for their support of the workshop on Silicon in Agriculture. Other delegates and speakers from both US and India expressed their willingness to come together for future collaborative research. Dr. Heckman was positive about the future active role of US Scientists in collaboration with their Indian colleagues in furthering silicon research.

An in-depth review of all the keynote presentations, poster presentations and technical sessions was assessed by having the attendees evaluate a pre- and post-workshop knowledge on silicon in agriculture.

Student artists of the Bhoomika group, UAS Bangalore under the direction of Mr. Naveen Badiger enlightened the delegates of Indo-US workshop on silicon in agriculture on the evening of 25 February 2010. The cultural program depicted the rich cultural heritage of South India with special reference to folk music and dance sequences of Karnataka.

A one-day field and sightseeing trip to VC Farm, Mandya and Mysore was organized on 27 February 2010. The field trip involved a visit to the Zonal Agricultural Research Station, VC Farm, Mandya and demonstration plots of rice and sugarcane at Mallanayakanakatte and Konanahalli. The Associate Director of Research, VC Farm Mandya briefly explained the activities of the research station and introduced the scientists to the delegates. The delegates enjoyed seeing the silicon trials in the farmer's field. There was a good interaction between farmers and the US and other delegates.

The workshop opened new vistas in Indo-US scientists' collaboration to promote silicon in agriculture for the benefit of the agricultural/horticultural communities of both countries.

The workshop came to close with a vote of thanks by Dr. M.S. Badrinath, President, ISSS, Bangalore chapter.

**Dr. Donald M. Ferrin** attended the following conferences/meetings/workshops: National eXtension Community of Practice Workshop, Austin, Texas, June 6-8, 2010; Citrus Clean Plant Network (C-CPN) FY 2010 Business Meeting, Irvine, Texas, March 23, 2010; Southern Division of the American Phytopathological Society Annual Meeting, Orlando, Florida, February 7-8, 2010; Southern Blueberry and Small Fruit Working Group Annual Meeting, Orlando, Florida, February 6, 2010; Sweetpotato SCRI Planning Meeting, Orlando, Florida, February 5, 2010; Sweet Potato Advisory Council Meeting, Winnsboro, Louisiana, December 2, 2009; Louisiana County Agricultural Agents Association Board Meeting, Woodworth, Louisiana, November 4, 2009; and the 2009 eXtension National Conference, St. Louis, Missouri, October 20-23, 2009.

**Dr. Raymond Schneider** gave two invited presentations at the Soybean Rust Workshop in Quincy, FL, August 25-26, 2010. He also gave an invited presentation at the National Soybean Rust Symposium in New Orleans, December 11, 2009. Dr. Schneider has been on the steering committee for the past four years for this symposium.

# Awards & Honors

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## FACULTY

**M. Catherine Aime**, assistant professor in the Department of Plant Pathology and Crop Physiology, was elected as a Fellow of the Linnean Society of London, the world's premier and oldest active society for the study and dissemination of taxonomy and natural history. Aime is one of the world's leading experts on systematics of rust fungi and also an expert on the biodiversity of neotropical basidiomycetes. She and her colleagues have published close to 50 new species and a new genus of fungi.

Drs. Blair Buckley, **Zhi-Yuan Chen**, **Patrick Colyer**, **Clayton Hollier**, **Boyd Padgett** and **Raymond Schneider** were recipients of the Tipton Team Research Award presented on 14 December 2009. They won this prestigious award for their seminal role in the first discovery of Asian Soybean Rust (ASR) in the continental United States and for preparing Louisiana and the nation to deal with this now perennial threat to soybean productivity. This award was established by the LSU AgCenter to recognize significant contributions to Louisiana Agriculture by a team of scientists in the past five years who have been participants in exceptional collaborative research efforts that would not have been possible by the scientists acting alone.



**Raymond Schneider, Boyd Padgett, Blair Buckley, Clayton Hollier and Zhi-Yuan Chen**

They showed outstanding initiative and leadership in addressing the challenges of ASR. Within days of the initial discovery, they led an aggressive survey of Louisiana parishes for rust on volunteer soybean, kudzu and other potential hosts. They hosted a rust identification workshop and produced resin-embedded rust-infected soybean leaves that were distributed nationwide as a visual aid in diagnosis. They recorded the first aerial spore find of ASR in 2005, and developed new technology to improve spore-trapping. Research programs for screening and evaluating fungicides and the US soybean germplasm collection for resistance to ASR were initiated at multiple locations in Louisiana. Results from their proteomics studies revealed important biological information as it relates to early events in the ASR infection cycle. Based on all aforementioned, this team set a national standard for cooperation, professionalism and accomplishment.

**Dr. Christopher Clark** was a recipient of the Outstanding Plant Pathologist Award, Southern Division, American Phytopathological Society, 2009.

**Dr. Clayton Hollier**, professor of plant pathology in the LSU AgCenter Department of Plant Pathology and Crop Physiology, received the prestigious Lifetime Achievement Award from the Friends of Southern IPM Center 21 January 2010 during the Louisiana Ag Outlook conference at Alexandria. This IPM center with headquarters in Raleigh, N.C. is funded by the U.S. Department of Agriculture's National Institute of Food and Agriculture.

This award recognizes contributions to an important aspect of integrated pest management (IPM) in the southern region of the United States. Dr. Hollier's award is in recognition of his outstanding work in writing for IPM textbooks, teaching IPM to various audiences, developing the IPM Louisiana Web site, including all pests in the IPM program and implementing an IPM mini-grant program to address local plant disease issues.



**Dr. Charles Overstreet:** recipient of the ONTA Honorary Member Award, Organization of Nematologists of Tropical America, 2010.

**Dr. Raghuwinder Singh** was awarded a certificate of appreciation for outstanding services in support of the Plant Biosecurity Symposium, Southern University and A & M College, Baton Rouge, Louisiana (November 11-12, 2009); awarded honorable mention for the Plant Health Clinic at the New Orleans Garden Show, New Orleans, Louisiana (April 4, 2010).

## STUDENTS

The Louisiana Agricultural Consultants Association (LACA) awarded two \$2,000 scholarships to LSU AgCenter Plant Pathology and Crop Physiology doctoral students during the organization's 2010 annual conference. The two Ph.D. candidates, **Mr. Trey Price**, who studies under **Dr. Boyd Padgett**, LSU AgCenter plant pathologist, and **Ms. Rebecca Melanson**, working with **Dr. Jong Hyun Ham**, LSU AgCenter plant pathologist, tied for the scholarship.

**Ms. Pei Pei Han** (former M.S. student with **Dr. Z. Y. Chen**) was selected as a recipient of the prestigious Tom W. Dutton Scholarship Award 2009-2010 for demonstrating a commitment to community service, and who have made extraordinary efforts to enhance their leadership skills or to make their organization a success.

**Mr. Tomas Rush**, Master's student in the Department of Plant Pathology and Crop Physiology (Co-Advisors, **Drs. Cathie Aime and Raymond Schneider**) won two highly competitive and prestigious awards. He was awarded a Sigma Xi Research Grant-in-Aid (\$400) for validating the ITS locus for diagnostic assays of *Phakopsora pachyrhizi*, and a Mentor Travel Award from the Mycological Society of America, MSA, (\$500) for "Placement of the yeast genus *Moniliella* in the Ustilaginomycotina and description of a new species" that was presented at the National MSA Meetings June 2010 in Lexington, KY.

**Rebecca Sweany**, Research Associate with Dr. Christopher Clark, won the C. W. Edgerton Honor Award in Plant Pathology Fall 2009 as the outstanding graduate student in the Department of Plant Pathology & Crop Physiology.

**Ms. Nicole Ward**, Ph.D. student with **Dr. Raymond Schneider**, received 1<sup>st</sup> place in the competitive student presentation competition at the Southern Soybean Disease Workers Annual Meeting, Pensacola, FL, held on March 10 & 11 for her work on "Field Evaluations of *Simplicillium lanosoniveum* as a Biological Control Agent for *Phakopsora pachyrhizi*". In addition, she recently received the competitive (and highly prestigious) Larry Wallace Moore and John F. Schafer Student Travel Award to attend the APS Annual Meeting in Nashville, TN, August 2010.

# Grants

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USDA Specialty Crop Research Initiative – “Participatory Modeling and Decision Support for Improving Sweetpotato Production Efficiency, Quality and Food Safety” funds \$2.84 million to LSU AgCenter, Mississippi State, North Carolina State, and UC Davis for research and extension efforts, of which \$297,461 is allocated to **Dr. Christopher Clark’s** program for sweetpotato disease research.

Hummel, N. and **Ferrin, D.** were recipients of the “Multimedia Educational Efforts To Promote Enhanced Pest Detection for Small Farms Audiences”. USDA-CSREES, \$5,000, March 2010.

Hummel, N., **Ferrin, D.**, and Pollet, D. were recipients of the Survey of Citrus Insects and Diseases. LDAF, USDA, APHIS CAPS Program, \$20,000, March 2010.

Hummel, N., **Ferrin, D.**, Machtmes, K., Coneva, E., Braswell, J., Marshall, D., and Cline, W. were recipients of eXtension Community of Practice: “All about Blueberries”. USDA, CSREES, SCRI, \$518,749, September 2009.

**Dr. Edward McGawley** was a recipient of a \$15,000 grant from Pasteuira Bioscience.

Khalilian, A., Kirkpatrick, T.L., **Overstreet, C.**, Mueller, J. D., Monfort, S.W., Henderson, W.G., and Griffen, T. W. were recipients of a Innovative nematode management strategies to reduce pesticide usage while enhancing farm profit and environmental quality. USDA, RAMP, \$1,154,161, October 2010.

# Publications

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## Refereed

**Aime MC**, Vila J, Moreau P-A. 2009. *Crepidotus subfulviceps* comb. nov. a stipitate Crepidotus from temperate North America and Europe. Mycotaxon 110:283-287.

**Aime MC**, Largent DL, Henkel TW, Baroni TJ. 2010. The Entolomataceae of the Pakaraima Mountains of Guyana IV: new species of *Calliderma*, *Paraeccilia* and *Trichopilus*. Mycologia 102: 633-649.

Bruckart WL, Eskandari FM, Berner DK, **Aime MC**. 2010. Life cycle of *Puccinia acroptili* on *Rhaponticum* (= *Acroptilon*) *repens*. Mycologia 102(1): 62-68. DOI: 10.3852/08-215. 2010.

Henkel TW, **Aime MC**, Largent DL, Baroni TJ. 2010. The Entolomataceae of the Pakaraima Mountains of Guyana III: New species of *Rhodocybe*. Mycoscience 51(1): 23-27. DOI 10.1007/s10267-009-0008-0.

**Holcomb GE**, **Aime MC**. 2010. First report of *Plumeria* spp. rust caused by *Coleosporium plumeriae* in Louisiana and Malaysia, and *Catheranthus roseus*, a new host of this rust. Plant Disease 94(2):272.

**Kaur R**, Knott C, **Aime MC**. 2010. First report of rust disease caused by *Puccinia sparganioides* on *Spartina alterniflora* in Louisiana. Plant Disease 94:636..

Mostert L, Bester W, Jensen T, Coertze S, van Hoorn A, Le Roux J, Retief E, Wood A, **Aime MC**. 2010. First report of leaf rust of blueberry caused by *Thekopsora minima* on *Vaccinium corymbosum* in the Western Cape, South Africa. Plant Disease 94:478.

- Sampangi RK, **Aime MC**, Mohan SK. 2010. First report of rust caused by *Puccinia similis* on *Artemisia tridentata* in Idaho and Oregon. Plant Disease 94:380.
- Vega FE, Simpkins A, **Aime MC**, Posada F, Peterson SW, Rehner SA, Infante F, Castillo A, Arnold AE. 2010. Fungal endophyte diversity in coffee plants from Colombia, Hawaii, Mexico and Puerto Rico. Fungal Diversity 3:122-138
- McGregor, C. E., Miano, D. W., LaBonte, D. R., **Hoy, M., Clark, C. A.**, and Rosa, G. J. M. 2009. Differential gene expression of resistant and susceptible sweetpotato plants after infection with the causal agents of sweet potato virus disease. J. Amer. Soc. Hort. Sci. 134:658–666.
- Villordon, A., **Clark, C.**, Smith, T., **Ferrin, D.**, and LaBonte, D. 2010. Combining linear regression and machine learning approaches to identify consensus variables related to optimum sweetpotato transplanting date. HortScience 45:684–686.
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- Smith, T. P., **Clark, C.**, and **Ferrin, D.** 2009. Sweetpotato foundation seed survey: Yield performance of multiple generations of sweetpotato foundation seed in 2007 and 2008. HortScience 44:573.
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- Holcomb, G. E. and Aime, M. C.** 2010. First report of *Plumeria* spp. rust caused by *Coleosporium plumeriae* in Louisiana and Malaysia and *Catheranthus roseus*, a new host of this rust. Plant Disease 94:272.
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Lozano, G., Trenado, H. **Valverde, R. A.,** and Navas-Castillo, J. 2009. New begomovirus species of recombinant nature in sweet potato (*Ipomoea batatas*) and *I. indica*: taxonomic and phylogenetic implications. *Journal of General Virology* 90: 2550 – 2562.

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## Book Chapters

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**Singh, R., and Ferrin, D.M.** "Oleander Leaf Scorch". Louisiana State University Agricultural Center, Publication 3144 (online only), February 2010.

**Ferrin, D.M., Hollier, C.A., and Holcomb, G.E.** "Camellia Flower Blight". Louisiana State University Agricultural Center, Publication 3136 (online only), October 2009.

**Ferrin, D.M.** "Large Patch (formerly Brown Patch) of Warm-season Turfgrasses". Louisiana State University Agricultural Center, Publication 3133 (online only), August 2009.

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**Overstreet, C.** 2010. Looking at better ways to managing nematodes in cotton. Thirteenth Annual National Conservation Systems Cotton & Rice Conference Proceedings, pages 15-17.

**Overstreet, C.,** G. Burris, and D. Burns. 2010. Site-specific management strategies for dealing with multiple nematode pests. Proceeding of the Beltwide Cotton Conferences, New Orleans, LA January 4-7, 2010, and pages 305-311.

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**Overstreet, C., E.C. McGawley, C. Hollier, D. Ferrin and R. Singh.** Current Strategies for Sampling Plant Parasitic Nematodes in Field Crops. Louisiana Plant Pathology Disease Identification and Management Series.

**Overstreet, C., McGawley, E. C., Hollier, C. A., Ferrin, D. M., and Singh, R.** Strategies for Sampling Plant-Parasitic Nematodes in Field Crops (PDF Format Only). Louisiana State University Agricultural Center, Publication 3143, February 2010.

**Singh, R., and Ferrin, D. M.** Oleander Leaf Scorch (PDF Format Only). Louisiana State University Agricultural Center, Publication 3144, February 2010.

## Abstracts

**Aime, M.C.** 2009. Recent advances in systematics, taxonomy, and evolution of rust fungi (Pucciniales) and their relatives. *Phytopathology* 99:S196.

Xie, Y.R., **Z. Y. Chen, S. Park, R. L. Brown** (2009) Analysis of ZmPR10.1 promoter reveals regulatory regions for stress responses and strong expression in transgenic Arabidopsis. American Phytopathological Society Annual Meeting in Portland. *Phytopathology* 99:S144

Huang, C. H., Roberts, P. D. and **Datnoff, L. E.** 2010. Effect of silicon on Fusarium Crown and Root Rot development in tomato. Pg. 3. In: Indo-US Workshop on Silicon in Agriculture, 25-27 February Bangalore, India.

**Datnoff, L. E.** 2010. The role of silicon in the performance and health of different crops. Pg. 9. In: Indo-US Workshop on Silicon in Agriculture, 25-27 February Bangalore, India.

**Datnoff, L. E.** 2010. Understanding the mechanisms of silicon mediated plant disease resistance in rice. Pg. 10. In: Indo-US Workshop on Silicon in Agriculture, 25-27 February Bangalore, India.

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**Mumma, E.P. Schneider, R.W. and Robertson, C.L.** 2009. Association of specific variables with severity of Asian soybean rust as assessed by GIS analysis at the field level. *Phytopathology* 99:S91.

## Presentations

*The American Phytopathological Society annual meeting, 1-5 August 2009, Portland, OR:*

Moral J, Perez M, Arquero O, Kaiser WJ, **Aime MC**, Trapero-Casas A. Etiology and life cycle of cedar-quince rust in southern Spain.

*The Mycological Society of America Annual Meeting, 24-29 July 2009, Snowbird, UT:*

Baroni TJ, Lodge DJ, Lindner DL, **Aime MC**, Ginns J, Ryvarden L, Minnis AM. Doyle's Delight, the Maya Mountains in Belize – yet another four new genera identified (poster presentation).

*The Mycological Society of America Annual Meeting, 24-29 July 2009, Snowbird, UT:*

Fulgenzi TD, Henkel TW, Halling RE, Smith M, **Aime MC**. 2009 Boletaceae of the central Guiana Shield.

*The Mycological Society of America Annual Meeting, 24-29 July 2009, Snowbird, UT:*

Padamsee M, Pilcher WR, **Aime MC**. Investigating red yeast diversity from phyto- and mycospheres in Louisiana (poster presentation).

**Aime MC.** Basic Animal and Plant Biology ACE meeting, Invited presentation, 15 December 2009, Baton Rouge, LA Exploring the Lost World: Searching for new fungal species in the Pakaraima Mountains of Guyana.

**Aime MC.** American Phytopathological Society, National Soybean Rust Symposium, Invited speaker, 9-12 December, 2009, New Orleans, LA: Rust Phylogenetics.

**Aime MC.** North American Mycological Association 2009 Foray, Invited presenter, 26-29 November 2009, Lafayette, LA: Exploring the Lost World: Searching for Fungi in Remote Rainforests.

**Aime MC.** Louisiana State University Science Club invited lecture, 9 September 2009, Baton Rouge, LA Exploring the Lost World.

**McGawley, E.C.** "Career Opportunities in Plant Pathology and Nematology." Southeastern LA University, Biology Department, 18 March 2010.

**McGawley, E.C.** "Nematode Disease Complexes." University of Arizona, Department of Plant Sciences, 6 & 7 November 2009.

**McGawley, E.C.** "Introduction to Nematodes: A New Multimedia Production" University of Arizona, Department of Plant Sciences, 6 & 7 November 2009.

**McGawley, E.C.** "Agri-Terra: Colloidal Ingredient Synergy and Environmental Responsibility." Mediterranean Society of Plant Pathology annual meeting, Rome, Italy, 22 June 2010.

**McGawley, E.C.** "Current research with *Rotylenchulus reniformis* in Louisiana." Nematology Division of CRA, Bari, Italy, 28 & 29 June 2010.

**McGawley, E.C.** "Introduction to Nematodes: A New Multimedia Production." Department Of Plant Pathology, Bari, Italy, 28 & 29 June 2010.

**McGawley, E.C.** "Variation in Reproduction and Pathogenicity of Geographic Isolates of *Rotylenchulus reniformis*." Society of Nematologists annual meeting, Boise, Idaho, 13 July 2010.

**McGawley, E.C.** "Introduction to Nematodes: A New Multimedia Production." Society of Nematologists annual meeting, Boise, Idaho, 13 July 2010.

**McGawley, E.C.** "Rotylenchulus reniformis: virulence phenotypes, effectiveness of colloid nematicides for population management and influence of exudates from weed roots on eclosion and hatch of eggs." Dept. Plant Pathology & Crop Physiology, LSU, 8 Sept. 2010.

**McGawley, E.C.** "Variation in Reproduction and Pathogenicity of Geographic Isolates of *Rotylenchulus reniformis* on Soybean." European Society of Nematology, Vienna, Austria, 22 Sept. 2010.

**Overstreet, C., E.C. McGawley, E. Burris, D. Burns, B. Padgett and R.L. Frazier.** Site-specific management strategies used in Louisiana. Presented at a Site Specific Management of Nematodes: A Multi-State Evaluation of Fumigation and Selected Nematicides Workshop at the Beltwide Cotton Conferences, New Orleans, LA January 4-7, 2010.

**Overstreet, C.** Using the right management strategies for dealing with plant-parasitic nematodes. Presented at the 13<sup>th</sup> Annual National Conservation Systems Cotton & Rice Conference, Tunica, MS January 12-13, 2010

**Overstreet, C., E.C. McGawley, D. Burns and M. Wolcott.** Using apparent electrical conductivity and verification strips to define nematode management zones in cotton. Presented at the Forty-Ninth Annual Meeting of the Society of Nematologists, Boise, Idaho July 11-14, 2010

**S. Park, M. C. Ganiger, A. A. Fortunato, and Z.-Y. Chen (2009)** Proteomic analysis of soybean accessions resistant and susceptible to soybean rust (*Phakopsora pachyrhizi*). National Soybean Rust Symposium in New Orleans.

**S. Park, Y. R. Xie, Y. Raruang, and Z. Y. Chen** (2009) Proteomic analysis of soybean accessions resistant and susceptible to *Phakopsora pachyrhizi* urediniospores from Louisiana. *Phytopathology* 99:S144. American Phytopathological Society Annual Meeting in Portland.

**Singh, R.**, Plant Disease Diagnostic Clinic. Master Gardeners Training Session. Café Hope, Marrero, Louisiana. July 19, 2010.

**Singh, R.**, Utilizing the AgCenter's Plant Disease Diagnostic Clinic. 2nd Landscape Pest Management Workshop. Hammond Research Station. Hammond, Louisiana. 05-11-2010.

**Singh, R.**, Diseases and Pests of Roses. New Orleans Old Rose Garden Society. New Orleans, Louisiana. May 4, 2010.

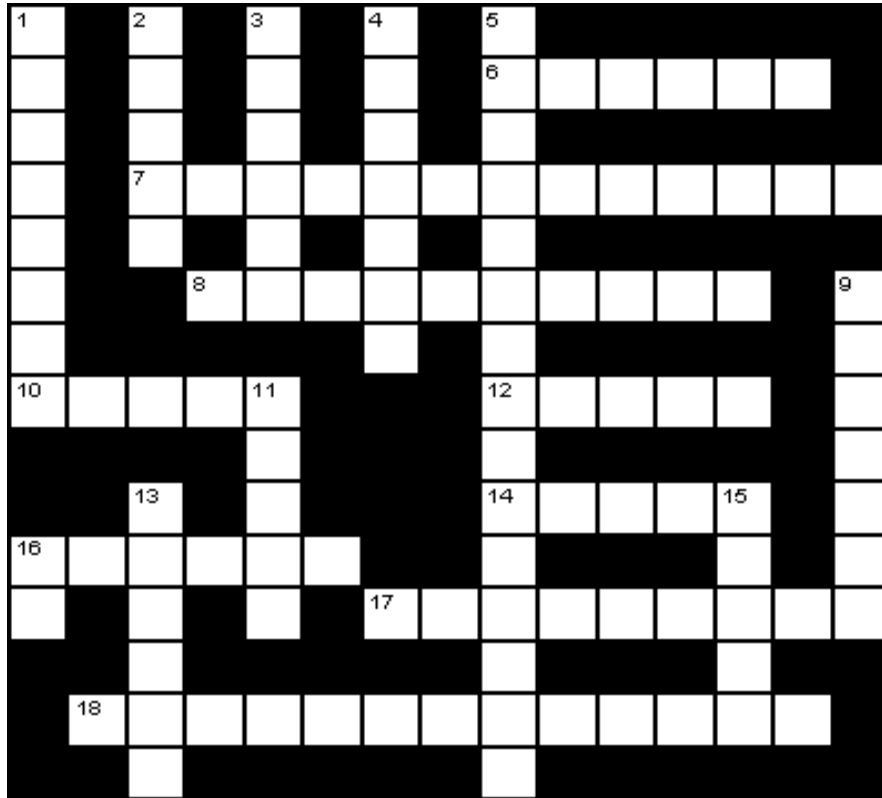
**Singh, R.**, Identification and Management of Turfgrass Diseases. Golf Course Operation. School of Plant Environmental and Soil Sciences, LSU AgCenter, Baton Rouge, Louisiana. April 4, 2010.

**Singh, R.**, Demonstration on Using Immunostrips, Enzyme-Linked Immunoassay and Polymerase Chain Reaction to Detect and Identify Plant Pathogens of National Importance. 3rd Plant Bio-Security Symposium. Southern University and A & M College, Baton Rouge, Louisiana. November 12, 2009.

**Singh, R.**, Bacterial Leaf Scorch of Ornamental, Landscape and Fruit Trees Caused by *Xylella fastidiosa*". 3rd Plant Bio-Security Symposium. Southern University and A & M College, Baton Rouge, Louisiana. November 11, 2009.

**Singh, R.**, Rapid Turfgrass Disease Diagnostics- A New Service Offered by LSU AgCenter Plant Disease Diagnostic Clinic. LSU Ornamental/Turfgrass Field Day. Baton Rouge, Louisiana. October 15, 2009.

# Crossword



## Across

- 6** Member of the class Hexapoda (phylum Arthropoda) possessing three sets of limbs attached to a central body segment (6)
- 7** Application of a biological agent, chemical substance, or physical treatment to seed, to protect the seed or plant from pathogens or to stimulate germination or plant growth (4,9)
- 8** Thick-walled resting or overwintering spore produced by the rust fungi (Uredinales) and smut fungi (Ustilaginales) in which karyogamy occurs; it germinates to form a

- promycelium (basidium) in which meiosis occurs (10)
- 10** Unicellular ascomycetous fungus that reproduces asexually by budding (5)
- 12** Structure composed of two guard cells and the opening between them in the epidermis of a leaf or stem, functioning in gas exchange (5)
- 14** A Submicroscopic, intracellular, obligate parasite consisting of a core of infectious nucleic acid (either RNA or DNA) usually surrounded by a protein coat (5)
- 16** Small fragment of nucleic acid with a free 3'-hydroxyl group necessary for initiation of DNA, and, sometimes, RNA

synthesis; often specific fragments chosen for use in polymerase chain reaction (PCR) for rapid identification of pathogens (6)

**17** A chemical used for killing plants or inhibiting plant growth, e.g. a weed or grass killer (9)

**18** An essential element needed by plants for growth and required in very small amounts (13)

## Down

**1** A method using the specificity of the antigen-antibody reaction for the detection and identification of antigenic substances and the organisms that carry them (8)

**2** A serological test in which the sensitivity of the reaction is increased by attaching an enzyme that produces a colored product to one of the reactants (5)

**3** Any of one or more alternative forms of a gene (6)

**4** A nitrogen-containing organic compound composed of units called amino acids (7)

**5** The measure of damage done by a disease (7,8)

**9** Generally spherical organelle within a plant cell bound by a membrane and containing dissolved materials such as metabolic precursors, storage materials, or waste products (7)

**11** Concentration of a virus (5)

**13** Central, thickened vein of a leaf (6)

**15** Portion of a shoot used for grafting onto the root stock (5)

**16** Negative logarithm of the effective hydrogen ion concentration; a measure of acidity (2)

The American Phytopathological Society. "Illustrated Glossary of Plant Pathology." *Education Center*. 2001.

<http://www.apsnet.org/education/illustratedGlossary/default.htm> July 02 2010.

Across: 6 Insect, 7 Seed treatment, 8 Teliospore, 10 Yeast, 12 Stoma, 14 Virus, 16 Primer, 17 Herbicide, 18 Micronutrient. Down: 1 Serology, 2 ELISA, 3 Allele, 4 Protein, 5 Disease severity, 9 Vacuole, 11 Titer, 13 Midrib, 15 Sclerenchyma, 16 PH.