

January 2012

From the Department Head



Lawrence E. Datnoff

Happy New Year!

This newsletter update is from November 2010 to August 2011. This time period was very productive for our department. Faculty published numerous refereed manuscripts and extension articles; gave numerous presentations locally,

regionally, nationally and internationally; and competed for grants to support their research and extension efforts while receiving a number of prestigious awards. Similarly, our M.S. and Ph.D. graduate students, post-doctorates as well as intern students from Brazil and Honduras were highly engaged, winning travel awards, best paper competitions and their efforts and outstanding contributions have further infused the department with vitality and enthusiasm, while helping to solve plant disease and environmental problems of importance to the clientele of Louisiana.

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 Louisiana Agriculture and beyond. Happy Reading!!!!

Soybean Viruses in Louisiana Affect Yield, Seed Quality

Rodrigo A. Valverde

Soybean viruses have been shown to cause significant yield losses throughout the soybean-producing areas of the world. In the United States, many different viruses infect soybeans. Viruses, alone or in combination, can cause foliar mosaic, leaf malformations, stunting, seed discolorations and, more important, lower yields. Because insects are the main vectors of plant viruses, the occurrence of viral diseases is often associated with an increase in insect populations.

During 2008 and 2009, soybean leaf samples showing virus-like symptoms were collected from 11 different locations across Louisiana. Samples were tested for the presence of viruses by an enzyme-linked test using blood serum containing antibodies against antigens specific for several known soybean viruses. Results indicated that the two most common viruses in Louisiana are the aphid-transmitted soybean mosaic virus and the beetle-transmitted bean pod mottle virus. These viruses have been shown to cause significant yield losses in other states. *(continued on page 3)*



The soybean foliage at the left is infected by soybean mosaic and bean pod mottle viruses. On the right is a healthy plant.

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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 Graduate Student Assistantship Fund
- Dr. C. W. Edgerton Graduate Student Honor Award
- Dr. Wes Martin Endowment Fund
- Plant Pathology & Crop Physiology Development 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:

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

For more information contact:

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Soybean Viruses in Louisiana Affect Yield, Seed Quality (continued)

Some plants showing virus-like symptoms did not give positive reactions with the test. Therefore, it is likely that these plants were infected with other viruses for which the test was not used or by soybean viruses that have yet to be described. The effects of bean pod mottle and soybean mosaic on yield depend upon the time of virus infection and the occurrence of mixed infections. In spring 2010, a greenhouse experiment was conducted to determine the effect of bean pod mottle and soybean mosaic, alone and in combination, on soybean yield. The experiment was conducted in the greenhouse rather than in the field to avoid natural spread of the viruses by insect vectors.

Maturity Group IV soybeans were planted in 1-gallon clay pots, and two weeks after emergence, plants were mechanically inoculated with soybean mosaic, bean pod mottle or a mixture of both viruses. Some plants were used as healthy controls. Plants were kept in the greenhouse until maturity. Symptoms evaluated throughout plant growth consisted of foliar mottle, mosaic, malformation and reduced plant growth.

Bean pod mottle alone induced more severe symptoms than soybean mosaic; however, the most severe symptoms were caused by mixed infections of both bean pod mottle and soybean mosaic. The severity of the symptoms was associated with reduced yields. When compared with healthy plants, the average reductions of seed weight ranged between 26-33 percent depending on the virus. Simultaneous infections by both viruses resulted in an 84 percent loss in seed weight. Stained seed was common among plants with mixed virus infections. In general, when viral infections occur late in the plant development, the effect on yields is not as severe as when the infections occur earlier in plant development.

Some plants infected with bean pod mottle alone or in combination with soybean mosaic exhibited green stem at maturity; however, not all bean pod mottle-infected plants developed the green stem disorder.

Increased insect activity, lower yields, mottled seed and green stem plants at harvest are indicators of a potential virus disease problem. Foliar

symptoms such as mottling and leaf malformation are good indicators of virus infection. Using soybean varieties resistant to these viruses and controlling insect populations are the best approaches to avoid virus problems.

This information will help soybean producers identify management options that reduce losses caused by plant viruses. Moreover, this type information is of great value to personnel conducting evaluations and selections of new soybean varieties for Louisiana.

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Take-all Root Rot

Donald M. Ferrin

Take-all root rot, caused by the soil-borne fungus *Gaeumannomyces graminis* var. *graminis* (Ggg), is a disease of all warm-season turfgrasses and occurs throughout the Southeastern U.S. Ggg is one of several ectotrophic root-infecting fungi that are associated with turfgrasses and is frequently found in association with turfgrass roots without causing significant damage. As the name implies, this is a root disease that can be quite destructive. Symptoms are generally not evident until the roots have already been severely compromised and they generally appear during periods of stress, such as during sudden or prolonged periods of heat and drought stress.

Initial symptoms of take-all root rot are a general yellowing, thinning or drought-stressed appearance of the turf (Fig. 1). The overall density of the root



Fig. 1. Initial yellowing of turf due to take-all root rot.



Fig. 2. Root systems of healthy (left) and diseased (right) turf.

system is greatly reduced (Fig. 2). As disease progresses, irregular patches of dead grass develop (Fig. 3), and diseased roots appear dark-colored and tend to be short and brittle (Fig. 4). Careful examination of stolons and the bases of the leaf sheaths with a good hand lens usually reveals the black, fungal mycelium of *Ggg* on their surfaces.

The management of take-all root rot relies primarily on the use of cultural practices to reduce stress on the turf and alter the soil environment to make it more suitable for root growth and less suitable for the pathogen. The first step is to alleviate the stress(es) that triggered the disease. These stresses can include soil compaction, drought, improper soil pH, improper mowing height and the over use of herbicides. Because the



Fig. 3. Severe take-all root rot.



Fig. 4. Dark, short, brittle roots and dead turfgrass associated with severe take-all root rot.

initial symptoms are often mistaken for drought stress or localized dry spots, the first inclination is to irrigate, which generally does very little good as there are no roots present to take up the water. Avoid overwatering; keep the soil moist but not wet. It is also important to ensure that the soil pH is at the low end of the range recommended for the turfgrass in question, generally a pH of about 6. It is then important to remember to use slow release acidifying forms of nitrogen so as not to begin raising the pH. Also, because we are actively trying to regrow roots, it is important to provide adequate potassium as well as nitrogen; the general recommendation is to supply equal amounts of nitrogen and potassium.

None of the fungicides that are readily available to homeowners are particularly effective in controlling this disease by themselves once the disease has become established. However, commercial products like the strobilurins (azoxystrobin and pyraclostrobin), and to a lesser degree the triazoles (triadimefon and propiconazole), may aid in control when they are used as part of an integrated management program. Current recommendations are to make two applications in the fall (mid to late September and again in mid to late October) and one application in the spring (mid to late March). Each application should be watered in with at least $\frac{1}{4}$ inch of water to move the fungicide into the root zone where it is needed to protect the roots.

This article was written by Dr. Don Ferrin, associate professor/extension specialist in the Department of Plant Pathology & Crop Physiology, LSU AgCenter, Baton Rouge. Telephone: (225) 578-8537; Cell phone: (225) 573-6510; E-mail: dferrin@agcenter.lsu.edu.

Faculty Research Projects

Cathie Aime

In collaboration with other AFTOL labs, we completed the whole genome sequencing of the basidiomycete extremeophile, *Wallemia sebi*, resolved the deepest phylogenetic relationships within Basidiomycota, and are overseeing the genome sequencing of an additional two enigmatic fungi that may provide clues to how pathogenicity arose in the rusts and smuts.



Zhi-Yuan Chen

We are currently working on two research projects: one is to reduce aflatoxin contamination in corn through enhancing host resistance against *Aspergillus flavus* infection; the other is to enhance soybean resistance to fungal diseases, especially soybean rust and soybean cercospora leaf blight through better understanding of host-pathogen interactions.

Chris Clark

Participatory Modeling and Decision Support for Improving Sweetpotato Production Efficiency, Quality and Food Safety funded by USDA, Specialty Crops Research Initiative.

Editing Compendium of Sweetpotato Diseases and Pests, Second Edition.

Marc Cohn

Work in the Cohn lab on recalcitrant seed death continues. Yi Wang is currently identifying proteins required for tolerance to drying using comparative proteomics in collaboration with Dr. Chen. Yi presented his initial results at the 2011 Southern Society of Plant Biologists annual meeting.

Kenneth Damann

Continue to work on Hatch Project involving mitigating aflatoxin contamination of corn by biological control using non-toxicogenic isolates of *Aspergillus flavus*. Found improved results by applying our Louisiana isolated strains along with the commercial Afla-guard strain for two years running. This is consistent with our PLoS ONE work showing specificity of intraspecific aflatoxin inhibition. The spectrum of inhibition of our strains and Afla-guard strain appear to complement one another in inhibiting a broader range of potential toxigenic contaminating strains.

Jong Hyun Ham

Molecular genetics study of *Burkholderia glumae*.

Breeding and genetic mapping of rice disease resistance to bacterial panicle blight.

Identification and classification of *Xylella fastidiosa* strains isolated from Louisiana.

Clayton A. Hollier

Yield losses associated with Southern corn rust.

Yield losses associated with soybean diseases.

Fungicide efficacy for diseases of soybeans, corn and grain sorghum.

Jeff Hoy

Biology and Control of Sugarcane Diseases.

Edward C. McGawley

Management of cyst nematode with transgenic soybean.

Management of root-knot and reniform nematodes with seed-treatment nematicides.

Vector relationships between Japanese and American pine sawyer beetles and the pinewood nematode.

Variation in pathogenicity among geographic populations of reniform nematode on cotton and soybean.

Impact of plant-parasitic nematodes in urban turf ecosystems.

Faculty Research Projects (continued)

Charles Overstreet

I am working on my research project entitled "Site-specific management of Southern root-knot and reniform nematode in cotton".

Raymond W. Schneider

Effects and mechanisms of suppression of *Cercospora* leaf blight of soybean with minor elements.

Use of qPCR to monitor infection of soybean by the *Cercospora* leaf blight pathogen, *Cercospora kikuchii*, and to optimize fungicide application timing and rates based upon these findings.

Use of molecular phylogenetics to group effective and ineffective *Fusarium* endophytes of tomato with regard to suppressing infection by the tomato wilt pathogen, *Fusarium oxysporum* f. sp. *lycopersici*.

Validation of the qPCR assay currently being used to diagnose soybean rust.

Phylogenetic analysis of a worldwide collection of *Phakopsora pachyrhizi*.

Rodrigo A. Valverde

Study of dsRNA viruses of plants.

Viruses of ornamental plants.

Graduate Student Participation in Research Projects

Washington Luis da Silva

Participatory Modeling and Decision Support for Improving Sweetpotato Production Efficiency, Quality and Food Safety.

Felix Francis

Whole Genome Sequencing and Comparative genomics of *Burkholderia glumae*, strain 336-gr1.

Characterization of the ECF $\sigma 70$ gene and $\sigma 54$ -dependent response regulator gene (tepR) in *Burkholderia glumae*, strain 336-gr1.

RNA-seq analysis to study the gene expression of *Burkholderia glumae*, strain 336-gr1.

Donald Jay Nelsen

Coevolution of Mycodipiosis and rust fungi.

Addison Plaisance

Effects of plant parasitic nematodes on St. Augustine and centipede turfgrasses.

Bishnu K. Shrestha

Characterization of rice defense system associated with partial resistance to bacterial panicle blight.

Genetic mapping of quantitative trait loci associated with partial resistance to bacterial panicle blight in rice.

Everlyne Wosula

Sweetpotato virus diseases and their insect vectors in Louisiana.

Déborah M. Xavier

I am currently working on my masters project entitled "The influence of soil texture and profile within alluvial cotton fields in Louisiana on population development and damage potential of *Rotylenchulus reniformis*".

Significant Accomplishments by Faculty

Cathie Aime

In collaboration with researchers at Duke University, we discovered and published a new class of fungi, *Tritirachiomycetes* Aime & Schell.

Marc Cohn

Yi Wang (Cohn lab GRA) successfully defended his M.S. thesis work concerning optimization of heat-stable protein extraction from recalcitrant *Spartina alterniflora* seeds. Wang continues his work towards his doctorate.

Kenneth Damann

Hosted Hunsu Punnapayak, Sehanat Prasongsuk and Pongthar Lotrukul (LSU graduate student with Dr. Valverde) all of Chulalongkorn Univ., Bangkok, Thailand, July 20-22, to work on a manuscript involving effects of AVID on *Aspergillus flavus* morphology and development produced by our shared doctoral student Khanchai Danmek. Took them on a tour of Rosedown Plantation in the Felicianas.

Asked to organize, chair and speak on our work at a biocontrol session of the 2012 meeting of the National Corn Growers in Indianapolis, Indiana, June 5-6.

Work of Nipur Patel in my lab previously demonstrated a hundred-fold improvement in the efficacy of itraconazole treatment to inhibit *Aspergillus flavus* when the antifungal was encapsidated in PLGA nanoparticles (Nanomedicine 5(7)1037-1050, 2010). A subsequent paper (Nanomedicine 6(8)1381-1395, 2011) demonstrated that the same PLGA nanoparticles encapsidating or covalently labeled with a fluorescent probe were almost immediately internalized into the fungus hyphae where the fluorescence was observed. It appears that the nanoparticles are endocytosed by the fungus, thus providing a "Trojan horse" explanation of the increased antifungal efficacy described in the first paper.

Rebecca Sweany's masters work, a population biology study of *A. flavus* from corn field soil and from kernels harvested from the same field, indicated niche specialization by the fungus with

six of 16 strains (VCG's) found in the soil were able to infect corn and 10 were not found in corn. Surprisingly, 80 percent of the kernel isolates were a single strain (VCG1), while the next most frequent kernel isolate (10 percent) was VCG4 (Phytopathology 101:952-959, 2011). Further analysis of these data not previously published indicated that the mean aflatoxin production in rice culture by the over 480 isolates of VCG1 was less than 5ppb, while the mean for the over 50 isolates of VCG4 was over 20,000ppb. Both these strains were found in kernels from all 11 locations, but from soil at only 2/11 locations. This was interpreted as a natural example of biocontrol by VCG1 and helps to explain why outbreaks of aflatoxin contamination are often absent when environmental conditions are conducive. The reason is that three things must happen before a contamination event can occur: 1) highly infective high toxin producing strains must be present; 2) the environmental conditions must be conducive; and 3) there must not be a highly infective low or non-toxin producing natural biocontrol strain present.

Donald M. Ferrin

Served as a member of the A.P.S. J. Artie and Arra Browning Plant Medicine and Health Travel Award committee.

Served as vice chair of the A.P.S. Diseases of Ornamental Plants Committee.

Served as a member of the A.P.S. Extension Committee.

Served on the LSU AgCenter HORT Council.

Served as co-advisor to the PPCP Graduate Student Association.



Significant Accomplishments by Faculty (continued)

Edward C. McGawley

Featured speaker: 2011 annual meeting of the Society of Nematologists.

Raymond W. Schneider

Organized meeting of NCERA 208, October 3-4, in Baton Rouge, La.

Travelled to Taiwan with Dr. Cathie Aime and Tomas Rush to participate in a rust collection expedition and to meet with faculty, administrators and students at the Asian Vegetable Research and Development Center,

Taiwan National University and National Chung Hsing University.

Travelled to the University of Illinois to meet with faculty and students and give a presentation.

Raghuwinder Singh

Establishment of New Plant Diagnostic Center

Rodrigo A. Valverde

Invited scientist by the University of Costa Rica, San Jose, Costa Rica to conduct a 2-week workshop on viruses of ornamental plants.



Brown rust of sugarcane.

New Collaborations with Other Departments, Universities or Agencies

Zhi-Yuan Chen

We are collaborating with Dr. Blair Buckley, Red River Research Station, LSU AgCenter, on screening soybean varieties for resistance to *Cercospora* leaf blight disease. I am also in the process of starting a new collaboration with Dr. Burt Bluhm, University of Arkansas, working on using host induced gene silencing to reduce aflatoxin contamination in corn.

Marc Cohn

Dr. Cohn has established a collaborative undergraduate research and mentoring program with Dr. Caryl Chlan, Professor of Biological Sciences, University of Louisiana, Lafayette, to study recalcitrant seed physiology and molecular biology of Louisiana native species.

Kenneth Damann

Nipur Patel, research associate in our lab, and I are in collaboration with Jeff Cary at the USDA ARS SRRL in New Orleans using nanoparticle encapsidation of siRNA to down-regulate a GFP-expressing strain of *Aspergillus flavus*. In addition we are looking at uptake of fluorescently labeled nanoparticles and gathering evidence that this is an endocytotic process. In conjunction with that study, we are looking at a diverse collection of fungi to determine the phylogenetic range of this uptake ability.

Collaborating with Ken Ehrlich, also of the SRRL, on biocontrol of aflatoxin contamination studies: this involves production of several GFP-expressing biocontrol strains and attempts to mutate Mat1-2 gene and compare microarrays of gene expression from the wild type with the mutant. The genes not expressed in the mutant are candidates for those important in corn infection that are turned on by Mat1-2. The mutant and wild type will also be compared in a field experiment to attempt to demonstrate the decreased infection efficiency of the mutant.

Collaborating with Hunsu Punnapayak of Chulalongkorn University, Bangkok, on work of our shared student, Khanchai Danmek, who is doing growth analysis studies of intraspecific aflatoxin inhibition.

Lawrence E. Datnoff

Formalized recruiting ties with Zamorano University, Honduras, for student interns and graduate students, June 28 to July 3, 2011.

Clayton A. Hollier

Why care about crop loss assessment?
Collaborators: Serge Savary, INRA (France); Andrea Ficke, Bioforsk (Norway); Letitia Willocquet, INRA (France); Paul Esker, University of Wisconsin.

Corn fungicide efficacy in the Midsouth.
Collaborators: Tom Allen, Mississippi State University; Cliff Coker; University of Arkansas.

Jeff Hoy

Development of molecular markers for resistance to leaf scald with N. Baisakh and C. Kimbeng in the School of Plant, Environmental & Soil Sciences, LSU AgCenter.

Methods of screening for brown rust resistance and molecular mechanisms of resistance with M. Pontif, N. Baisakh and C. Kimbeng in the School of Plant, Environmental & Soil Sciences, LSU AgCenter.

Edward C. McGawley

Vector relationships between Japanese and American populations of the pine sawyer beetle and the pinewood nematode (with Professor Kazuyoshi Futai of the Microbial Ecology Lab of Kyoto University, Japan).

Charles Overstreet

I am collaborating on site specific management of nematodes with scientists from Alabama, Arkansas, Missouri, Mississippi, South Carolina, Georgia, Kentucky and North Carolina.

Raymond W. Schneider

Collaborative project with Dr. Brenda Tubaña, School of Plant, Environmental & Soil Sciences, LSU AgCenter, on the effects of silicon on diseases of soybean.

New Collaborations with Other Departments, Universities or Agencies (continued)

Raghuwinder Singh

Harmon, C., Snover-Clift, K., Singh, R., Creswell, T., Ong, K., Szabo, L. J. and Vincelli, P. 2010. Improvement and Deployment of Rapid Standardized PCR Diagnostic Tools to Increase Detection Capacity for High-Impact Plant Pathogens. USDA-CSREES-AFRI, \$ 999,550 (LSU AgCenter Subcontract \$ 51,435). Co-PI

Rodrigo A. Valverde

Mississippi State University, Department of Biochemistry, Molecular Biology, Entomology and Plant Pathology. (Plant virus identification)

Laboratory of Molecular and Cellular Biology, Faculty of Agriculture, Tokyo University of Agriculture and Technology, 3-5-8 Saiwai-cho, Fuchushi, Tokyo, 183-8509 Japan. (Molecular biology of dsRNA viruses)

Instituto de Hortofruticultura Subtropical y Mediterránea "La Mayora" IHSM-UMA-CSIC Estación Experimental "La Mayora" 29750 Algarrobo-Costa (Málaga) Spain. (Molecular biology of dsRNA viruses)

Centro de Investigación en Biología Celular y Molecular, Universidad de Costa Rica, CP 11501-2060, San José, Costa Rica. (Characterization of viruses of ornamental plants)



Corn smut.

Faculty Awards & Honors

Marc Cohn

Dr. Marc Cohn was the recipient of the 2011 Alumni Association Distinguished Teaching Award from the LSU College of Agriculture.

Dr. Cohn was appointed to the American Society of Plant Biologists Foundation Committee by ASPB President, Nick Carpita, to enhance the Society's fund raising potential.

Lawrence E. Datnoff

Elected APS Caribbean Division Forum Representative, 2011.

Jong Hyun Ham

Oomycetes Genomics Workshop Travel Award (2011).

Clayton A. Hollier

2010 LSU AgCenter Extension Excellence Award.

Graduate Student Awards & Honors

Felix Francis

PPCP GSA MS Scholarship for the first period of the 2010-2011 school year. (July, 2011)

NSF Travel Fellowship for attending "Oomycete Bioinformatics Training Workshop" at Virginia Bioinformatics Institute, Virginia Tech. (May, 2011)

NSF-UT Travel Award for attending the workshop on "High Performance Computing Application of R and Other Codes for Biological Research" at the National Institute for Mathematical and Biological Synthesis (NIMBioS). (2011)

Nomination to Phi Kappa Phi (2011 – present) for being in the top 10 percent among all academic disciplines from each participating university.

Rebecca Melanson

LSU Graduate School Travel Award to attend the 2011 Annual Southern Division APS Meeting in Corpus Christi, Tx.

APS-Southern Division Travel Award to attend the 2011 Annual Southern Division APS Meeting in Corpus Christi, Tx.

Inducted as a member of Phi Kappa Phi.

Re-elected president of the PPCP GSA (2011-2012).



Dr. Jong Hyun Ham's Graduate Student Felix Francis attended the Oomycetes Genomics Workshop, Virginia Tech, June/July 2011.

Bishnu K. Shrestha

LSU Graduate School Travel Award 2011 to attend Annual APS Southern Division Meeting, at Corpus Christi, Tx.

Southern Division APS Graduate Student Travel Award 2011 to attend Annual APS Southern Division Meeting at Corpus Christi, Tx.

LSU Graduate School Travel Award 2011 to attend Annual APS Meeting at Honolulu, Hawaii.

Grants Awarded to Faculty

Zhi-Yuan Chen

A grant application to National Science Foundation BREAD program in November 2011 with SRRC and ICRISAT as partners: BREAD: Identifying new sources of resistance for eliminating aflatoxin contamination in corn and peanut (amount requested \$1,543,248).

A grant application to the Aflatoxin Mitigation Center of Excellence (AMCOE) program in October 2011: Transgenic approaches to improve aflatoxin resistance in corn (requested amount \$70,000).

Grant applications to Louisiana State Soybean and Small Grain Promotion Board in October 2011: 1.) Using molecular biology to control soybean diseases: cercospora leaf blight and rust (amount requested \$54,500), 2.) Cercospora leaf blight disease of soybean: variety differences, environmental effects and source of inocula (amount requested \$32,000) and 3.) Reducing aflatoxin in corn (amount requested \$35,050).

Grant applications to Louisiana State University Economic Development Assistantship Program in October 2011: Trans-silencing to control soybean cercospora leaf blight disease (CLB) caused by *Cercospora kikuchii*.

Grant application to USDA Agriculture and Food Research Initiative (AFRI) in June 2011: Exploring host induced gene silencing mechanism to control soybean Cercospora leaf blight (CLB) caused by *Cercospora kikuchii* (amount requested \$499,089, declined).

Chris Clark

USDA Specialty Crop Research Initiative funded \$2,841,987 to T. P. Smith (LSU AgCenter), D. R. LaBonte (LSU AgCenter), A. Q. Villordon (LSU AgCenter), C. A. Clark (LSU AgCenter), D. Picha (LSU AgCenter), D. Miller (LSU AgCenter), R. A. Arancibia (Mississippi State), J. Schultheis (North Carolina State) and S. Stoddard (University of California, Davis) for the proposal: "Participatory Modeling and Decision Support for Improving

Sweetpotato Production Efficiency, Quality and Food Safety."

Louisiana Sweetpotato Commission - \$6,700.

Kenneth Damann

Syngenta Crop Protection Grant to do field tests on various formulations of Afla-Guard alone and in conjunction with several of our biocontrol isolates.

Louisiana Soybean and Grain Research and Promotion Board has continued to generously fund the bulk of our work.

Support from USDA-ARS-SRRL for Nipur Patel's work.

Lawrence E. Datnoff

B. S. Tubana, R. W. Schneider and L. E. Datnoff. 2011. Soil Fertility Calibration, Agronomic and Plant Pathological Research for Silicon, Edward C. Levy Company, \$93,648.

Donald M. Ferrin

N. Hummel, B. Fletcher Jr. and D. Ferrin, "Citrus Health Response Plan – Outreach for Small Growers and Homeowners in Louisiana." USDA-APHIS-PPQ, \$44,055, August 2011.

D. Ferrin, "the California-Arizona-Texas-Louisiana-Alabama & Hawaii Citrus Clean Plant Network." USDA-APHIS, \$14,850, August 2011.

Jong Hyun Ham

Louisiana Rice Research Board Grant (Characterization and Utilization of Genetic Traits for Resistance to Multiple Diseases of Rice. (PI: Jong Hyun Ham. Co-PIs: Donald Groth, Xueyan Sha, Prasanta Subudhi, Herry Utomo) Funded: \$41,700 (1/ 2011 – 12/2011).

Clayton A. Hollier

Extension IPM Coordination \$175,000.

Chemical company grants: \$12,000.

Commodity grants: \$119,500.

Grants Awarded to Faculty (continued)

Jeff Hoy

USDA AFRI CAPS, A Regional Program for Production of Multiple Agricultural Feedstocks and Processing to Biofuels and Biobased Chemicals, 2011-2016, \$17,343,165 (\$51,295), V. Kochergin PD et al.

USDA NIFA/AFRI, Managing Insect Pests and Diseases in Multi-use Landscapes of Bioenergy and Conventional Cropping Systems in the Gulf Coast, 2011-2015, \$999,640 (\$134,819), T.E. Reagan PI, J. Hoy, A. Showler, M. Way, T. Wilson, Y. Yang Co-PIs.

American Sugar Cane League, Pathology Research, \$15,000.

American Sugar Cane League, Pathogen Detection Lab, \$10,000.

Helena Chemical Company, Sugarcane Disease Detection Lab, \$17,000.

Kleentek, Sugarcane Disease Detection Lab, \$17,000.

BASF Corp., Fungicide testing, \$10,000.

Syngenta, Fungicide testing, \$5,000.

Edward C. McGawley

Bayer CropScience, Management of cyst nematode with transgenic soybean. \$50,000.

Syngenta, Seed-treatment nematicides for control of root-knot and reniform nematodes: \$10,000.

LSU Board of Regents NSF EPSCoR Links with Industry, Research Centers and National Laboratories (LINK) program: \$2,500.

Charles Overstreet

A grant to NIFA-RAMP Program for the project "Innovative Nematode Management Strategies to Reduce Pesticide Usage While Enhancing Farm Profit and Environmental Quality," 2010. A. Khalilian, J. Mueller, W. Henderson, T. Kirkpatrick, S. Monfort, T. Griffin and C. Overstreet. Requested \$1.5 million and funded for \$1.15 million for 3 years.

A grant to Cotton Incorporated State Support Committee for "Soil texture and profile in the

development of management zones against reniform or Southern root-knot nematodes," 2010. C. Overstreet. \$4,500.

A grant to the United Soybean Board for "Investigations into the occurrence, distribution, and impact of nematodes in soybean fields in the Southern United States." 2011. P. Donald, C. Canaday, D. Hershman, T. Kirkpatrick, S. Moore, K. Lawrence, J. Bond, C. Overstreet, G. Shannon, A. Wrathner, G. Lawrence, T. Allen, S. Koenning, P. Augdelo, F. Stromberg and R. Kemerait. \$181,900.

Raymond W. Schneider

Louisiana Board of Regents. LINK Program. Does *Phakopsora pachyrhizi* have an Alternate Host in Taiwan? \$8,000.

Louisiana Board of Regents. SURE Program. Phylogenetic Relationships among Nonpathogenic Strains of *Fusarium oxysporum* from Tomato. \$5,000.

United Soybean Board. Validation of the qPCR Assay for *Phakopsora pachyrhizi*. \$11,700.

Louisiana Soybean and Grain Research and Promotion Board. Biology and Control of Major Diseases Affecting Soybean. \$79,391.

Raghuwinder Singh

Singh, R., Ferrin, D., and Hummel, N. 2011. Survey of Citrus Insect and Diseases. Cooperative Agriculture Pest Survey. Louisiana Department of Agriculture and Forestry. \$25,000. PI

Singh, R. 2011. National Plant Diagnostic Network for the Food and Agriculture Initiative. USDA-NIFA. \$29,250. PI

Harmon, C., Snover-Clift, K., Singh, R., Creswell, T., Ong, K., Szabo, L. J., and Vincelli, P. 2010. Improvement and Deployment of Rapid Standardized PCR Diagnostic Tools to Increase Detection Capacity for High-Impact Plant Pathogens. USDA-CSREES-AFRI, \$999,550 (LSU AgCenter Subcontract \$51,435). Co-PI

Rodrigo A. Valverde

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Cathie Aime

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Marc Cohn

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Kenneth Damann

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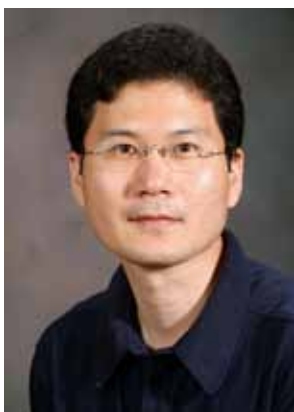
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Jong Hyun Ham

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Jeff Hoy

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Raymond W. Schneider

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Rodrigo A. Valverde

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Rebecca Melanson

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Cathie Aime

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Donald M. Ferrin

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Jeff Hoy

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Charles Overstreet

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Overstreet, C., R. Barbosa, D. Burns, R. L. Frazier, E. C. McGawley, G. B. Padgett and M. C. Wolcott. 2011. Using electrical conductivity to determine nematode management zones in alluvial soils of the mid-South. *Beltwide Cotton Proceedings*, pages 252-258.

Raymond W. Schneider

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Rodrigo A. Valverde

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Student Publications - Non-Refereed

Rebecca Melanson

Ham, J. H., and Karki, H. S., Shrestha, B., Barphagha, I. K., Melanson, R. A., Chen, R., Groth, D. E., Sha, X., Utomo, X., Subudhi, P. and Rush, M. C. 2011. Molecular genetic and genomic studies on bacterial panicle blight of rice and its causative agent *Burkholderia glumae*. (Abstr.) Phytopathology 101:S266.

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Bishnu K. Shrestha

Ham, J. H., and Karki, H. S., Shrestha, B., Barphagha, I. K., Melanson, R. A., Chen, R., Groth, D. E., Sha, X., Utomo, X., Subudhi, P., and Rush, M. C. 2011. Molecular genetic and genomic studies on bacterial panicle blight of rice and its causative agent *Burkholderia glumae*. (Abstr.) Phytopathology 101(6):S266.

Shrestha, B. K., Karki, H. S., Groth, D. E., Rush, M. C., and Ham, J. H. 2011. Suppression of bacterial panicle blight of rice by pretreatment with various chemical compounds. (Abstr.) Phytopathology 101(6):S166.

Shrestha, B. K., Nandakumar, R., Rush, M. C., and Ham, J. H. 2011. Expression of NAC-like transcription factor is involved in bacterial panicle blight resistance in rice. (Abstr.) Phytopathology 101(6):S268.

Presentations, Webinars and Posters by Faculty

Cathie Aime

Posters

The American Phytopathological Society Annual Meeting, August 6–10, 2011, Honolulu, Hawaii: Rush, T.A., Schneider, R.W., Aime, M.C., Hartman, G.L., Hambleton, S. Assessing the validity of diagnostic quantitative PCR assays for *Phakopsora pachyrhizi* and *P. meibomia*.

The Mycological Society of America Annual Meeting, August 2–5, 2011, Fairbanks, Alaska: Albu, S., Aime, M.C. Phenology of basidiomycete ballistosporic phylloplane yeasts from seven fern species growing in Baton Rouge, La.

The Mycological Society of America Annual Meeting, August 2–5, 2011, Fairbanks, Alaska: Albu, S., Blackwell, M., Aime, M.C. Gulf coast tarball-associated yeasts: understudied agents of microbial hydrocarbon degradation and potential human pathogens.

The Mycological Society of America Annual Meeting, August 2–5, 2011, Fairbanks, Alaska: Padamsee, M., Binder, M., Kumar, T.K.A., Riley, R., Boyd, A., Calvo, A., Furukawa, K., Hesse, C., Hohmann, S., James, T.Y., LaButti, K., Lapidus, A., Lindquist, E., Lucas, S., Miller, K., Shantappa, S., Hibbett, D.S., Spatafora, J.W., Grigoriev, IV, McLaughlin, D.J., Aime, M.C. The *Wallemia sebi* genome: small in size but reveals clues to surviving an osmotically challenging environment.



Charcoal rot of sweetpotato, caused by *Macrophomina phaseolina*.

The Mycological Society of America Annual Meeting, August 2–5, 2011, Fairbanks, Alaska: Rush, T.A., Aime, M.C. The genus *Meira* phylogenetic placement and description of a new species.

The Mycological Society of America Annual Meeting, August 2–5, 2011, Fairbanks, Alaska: Rush, T.A., Schneider, R.W., Hartman, G.L., Hambleton, S., Ward, N.A., Aime, M.C. Validation of diagnostic assays for *Phakopsora pachyrhizi* in the United States.

The Mycological Society of America Annual Meeting, August 2–5, 2011, Fairbanks, Alaska: Smith, M.E., Williams, G.C., Henkel, T.W., Aime, M.C., Vilgalys, R. Do different soil microhabitats associated with *Dicymbe corymbosa* trees harbor distinct communities of tropical ectomycorrhizal fungi?

The Mycological Society of America Annual Meeting, August 2–5, 2011, Fairbanks, Alaska: Toome, M., Padamsee, M., Aime, M.C. Resolving phylogenetic relationships in Pucciniomycotina.

Oral presentations

Invited symposium speaker, Global Food Security and Plant Biosecurity Symposium, November 9–10, 2010, Southern University, Baton Rouge, La.: Systematics of rust fungi: Impact on disease prediction and diagnostics.

Seminar speaker, National Taipei University, July 29, 2011, Taipei, Taiwan: Revising fungal species estimates based on new discoveries from the Neotropics.

Seminar speaker, National Chung Hsing University, July 28, 2011, Tainan, Taiwan: Revising fungal species estimates based on new discoveries from the Neotropics.

Zhi-Yuan Chen

Oral Presentations

Chanda, A. K., Chen, Z. -Y. and Schneider, R. W. 2011. The Roles of Light Induced Proteins in the Biosynthesis of Cercosporin by *Cercospora kikuchii*. Feb, 2011 at Southern Division of APS meeting.

Presentations, Webinars and Posters by Faculty (continued)

Chris Clark

Oral Presentations

Guan D., Grau B.L., Clark C.A., Loria R. and Pettis G.S. 2010. Cloning and Characterization of the Thaxtomin C Biosynthetic Gene Cluster of the Bacterial Sweet Potato Pathogen *Streptomyces ipomoeae*. American Society for Microbiology (ASM) general annual meeting, San Diego, Calif., May 2010.

Wosula, E., Clark, C. A. and Davis, J. A. 2011. Potyvirus and insect vector movement in Louisiana sweetpotato fields. *Phytopathology* 91:S270.

Villordon, A., Solis, J., LaBonte, D., Clark, C., and Sheffield, R. 2011. Further calibration of a Bayesian belief network model representing the relationship between fresh market yield and agroclimatic variables known to influence storage root initiation in 'Beauregard' sweetpotato: soil moisture and planting density. National Sweetpotato Collaborators Group Progress Report, 2010:9.

Clark, C., Sweany, R. and da. Silva, W. 2011. Stress effects on sweetpotato storage root rots, some preliminary observations. National Sweetpotato Collaborators Group Progress Report, 2010:12.

Marc Cohn

Posters

Subudhi, P.K., Parco, A., Singh, P., DeLeon, T., Cohn, M.A. [2011] Genetic dissection of seed shattering and seed dormancy in US red rice. Plant & Animal Genome Conference, San Diego Calif. January 15-19, 2011.

Subudhi, P.K., Parco, A., Singh, P., DeLeon, T., Cohn, M.A. [2010] Quantitative trait loci for seed shattering and seed dormancy in weedy red rice. Crop Science Society of America annual meeting. Long Beach, Calif.

Oral presentations

Wang, Y., Hasan, A., Chen, Z.-Y., Cohn, M.A. [2011] Comparative proteomics of recalcitrant seed death in *Spartina alterniflora*. Southern Section - American Society of Plant Biologists annual meeting. Ocean Springs, Miss. April 9-11, 2011.

Lawrence E. Datnoff

Oral Presentations

Presented an invited seminar on silicon in the life, performance and health of plants to the Department of Plant and Soil Science, University of Vermont, Burlington, February 24, 2011.

Presented an invited keynote talk on the importance of mineral nutrition in suppressing plant diseases at the Congreso de Nutricion y Fisiologia Vegetal Aplicada, Guadalajara, Mexico, July 21-23, 2011.

Presented an invited keynote talk on silicon in the life, performance and health of plants at the Congreso de Nutricion y Fisiologia Vegetal Aplicada, Guadalajara, Mexico, July 21-23, 2011.

Donald M. Ferrin

Oral and Webinar Presentations

Ferrin, D., and Singh, R. "Diseases that Plague Southern Turfgrass." Presented at the Louisiana Turfgrass Association Conference, Baton Rouge, La., January 6, 2011.

Ferrin, D., "Sweet Orange Scab". Presented at a meeting of the Plaquemine Parish Citrus Nursery and Growers, Belle Chasse, La., January 12, 2011.

Ferrin, D., "Disease Issues and Management Options: Turfgrass". Presented at the 2011 Gulf States Horticultural Expo, Mobile, Ala., January 19, 2011.

Ferrin, D., "Overview of Warm Season Turfgrass Diseases." Presented at the Landscape Pest Management Workshop, Hammond, La., February 3, 2011.

Ferrin, D. "Safety with Chemicals." Presented at the 2011 Gulf District Mid-winter Workshop & Consulting Rosarian School, Natchez, Miss., February 12, 2011.

Ferrin, D., "Recognition and Control of Diseases in the Home Vegetable Garden." Presented at the Southwest Louisiana Garden Festival, Lake Charles, La., March 25, 2011.

Hummel, N.A., and Ferrin, D.M. "Asian Citrus Psyllid, *Diaphorina citri*, and Citrus Greening Disease." Protect US Online Webinar, Baton Rouge, La., February 8, 2011.

Presentations, Webinars and Posters by Faculty (continued)

Jong Hyun Ham

Oral Presentations:

2011 APS Southern Division Meeting, Corpus Christi, Tx. (2/7/2011). Molecular genetic and genomic studies on bacterial panicle blight of rice and its causative agent *Burkholderia glumae*.

Louisiana Rice Research Board Meeting, Rice Research Station (11/16/2010) Characterization and utilization of genetic traits for resistance to multiple diseases of rice.

Clayton Hollier

Oral Presentations

Why care about crop loss assessment? Crop loss assessment in the United States. 2011 APS Meeting, Honolulu, Hawaii.

Yield losses due to sheath blight disease of rice. 2011 National Conservation Meeting, Baton Rouge, La.

Edward C. McGawley

Oral Presentations

Molecular Diagnostics: a new section of "Introduction to Nematodes," Society of Nematologists 2011 Annual Meeting (Corvallis, Ore.).

History of the Society of Nematologists, Society of Nematologists 2011 Annual Meeting (Corvallis, Ore.).

"Introduction to Nematodes," An Internet-Based Education (Kyoto University, Japan).

Nematode Disease Complexes: Additivity, Antagonism and Synergy. (Kyoto University, Japan).

Variation in Reproduction and Pathogenicity Among Geographic Isolates of Reniform Nematode on Cotton and Soybean. (Kyoto University, Japan).

Poster

Molecular Diagnostics: a new section of "Introduction to Nematodes," 2011 Society of Nematologists Annual Meeting, Corvallis, Ore.

Charles Overstreet

Oral Presentations

Using electrical conductivity to determine nematode management zones in alluvial soils of the mid-South. Presented at the Beltwide Cotton Conference, Atlanta, Ga., January 5-7, 2011.

The importance of Temik 15G for crops in the Midsouth. Presented at the Beltwide Cotton Conference, Atlanta, Ga., January 5-7, 2011.

Edaphic factors involved in the delineation of management zones for *Rotylenchulus reniformis*. Presented at the Society of Nematology meeting, Corvallis, Ore., July 17-20, 2011.

Site specific nematode management- success stories in the U.S. Presented at the Site Specific Nematode Management Symposium at the Society of Nematology meeting, Corvallis, Ore., July 17-20, 2011.

Management zone development in cotton against concomitant infestation with *Meloidogyne incognita* and *Rotylenchulus reniformis* for the site-specific application of nematicides. Presented at the Organization of Nematologists of Tropical America meeting, Coimbra, Portugal, September 4-8, 2011.

Poster

Myers, G. O., J. E. Jones, J. I. Dickson, and C. Overstreet. 2011. Egg mass indexing as a tool for selecting for reniform nematode resistance in cotton. Beltwide Cotton Conference, Atlanta, Ga., January, 2011.



Pythium blight development on rough bluegrass.

Presentations, Webinars and Posters by Faculty (continued)

Raymond W. Schneider

Oral Presentations

Yield loss models for several soybean diseases and development of a yield loss calculator. Proceedings, Southern Soybean Disease Workers. March 10, 2011.

The following two presentations were given at the Asian Vegetable Research and Development Center, Taiwan National University, and National Chung Hsing University during August, 2011: i.) Biological control of seedling disease of rice, and ii.) Latent infection of soybeans with *Phakopsora pachyrhizi*.

Cercospora leaf blight of soybean. Department of Crop Sciences and the National Soybean Research Center, University of Illinois. May 10, 2011.

Raghuwinder Singh

Oral Presentations

Plant Health Diagnostics. Louisiana Master Gardener Training. Winnfield, La., August 2, 2011.

Introduction to Plant Diagnostic Center. TARC's Garden and Market Festival. Houma, La., April 30, 2011.

Turfgrass Disease ID and Management Guest Lecture, SPESS, Turfgrass Class, April 21, 2011 (12 Students) (Invited Speaker).

Plant Disease Clinic. PLHL 4001 Plant Disease Management and Control. Baton Rouge, La. April 11, 2011 (Invited Speaker).

LSU AgCenter Plant Diagnostic Center. Horticulture Council Annual Meeting. Baton Rouge, La. April 8, 2011 (Invited Speaker).

Solving Your Plant Health Problems. Spring Garden Show. New Orleans, La. April 3, 2011.

Plant Health Diagnostics. Louisiana Master Gardener Training. DeRidder, La. March 29, 2011 (15 Participants) (Invited Speaker).

Introduction to LSU AgCenter Plant Diagnostic Center. Southwest Louisiana Garden Festival. Lake Charles, La. March 25, 2011.

Plant Diagnostic Center. Spring Garden Day. Hammond, La. March 12, 2011.

Biolog Procedure. PLHL 7011 Phytobacteriology. Baton Rouge, La. February 22, 2011 (Invited Speaker).

Molecular Biology and Other Techniques for Identifying and Monitoring Plant Pathogens; PCR, Real Time PCR, Monoclonal Antibodies, ELISA, Fatty Acid Analysis, Nutrient Utilization. PLHL 4001 Plant Disease Management and Control. Baton Rouge, La. February 21, 2011 (Invited Speaker).

Methods for Identifying and Monitoring Plant Pathogen Lab. PLHL 4001 Plant Disease Management and Control. Baton Rouge, La. February 21, 2011.

Introduction to Biolog. PLHL 7011 Phytobacteriology. Baton Rouge, La. February 15, 2011 (Invited Speaker).

Utilizing LSU AgCenter Service Laboratories. Louisiana Agricultural Consultants Association Annual Meeting. Alexandria, La. February 9, 2011.

Solving your Plant Health Problems- LSU AgCenter Plant Diagnostic Center. Landscape Pest Management Workshop. Hammond, La. February 3, 2011 (80 Participants) (Invited Speaker).

Methods to Identify Bacterial Plant Pathogens. PLHL 7011 Phytobacteriology. Baton Rouge, La. February 1, 2011 (Invited Speaker).

Bacterial Disease Diagnosis. PLHL 7011 Phytobacteriology. Baton Rouge, La. February 1, 2011 (Invited Speaker).

New Improved Plant Diagnostic Center. Louisiana State Horticulture Society Annual Meeting. Baton Rouge, La. January 12, 2011 (30 Participants).

Rapid Turfgrass Diagnostics. Louisiana Turf Association and LSU AgCenter Turf Day. Baton Rouge, La. January 6, 2011.

Enzyme Immunoassay. PLHL 7040 Plant Virology. Baton Rouge, La. November 1-4, 2010 (11 Students) (Invited Speaker).

Plant Health Diagnostics. PLHL 4000 General Plant Pathology. Baton Rouge, La. October 7, 2010 (32 Students) (Invited Speaker).

Presentations, Webinars and Posters by Faculty (continued)

Rodrigo A. Valverde

Posters

Sabanadzovic, S., Valverde, R. A., and Wintermantel, W. M. 2011. Molecular characterization of an endornavirus from *Cucumis* spp. *Phytopathology* 101: S158.

Valverde, R. A, Sabanadzovic, S., and Singh, R. 2011. Detection of the begomovirus Clerodendrum golden mosaic China virus in *Salvia splendens* cv. Dancing Flame. *Phytopathology* 101:S181.

Oral Presentations

Invited seminar speaker at Centro de Investigación en Biología Celular y Molecular University of Costa Rica, San Jose, Costa Rica. Title

of presentation: Viruses of ferns and ornamental plants. April 12, 2011.

2011 Annual Noble Foundation Virology Retreat. April 29-30, 2011. Ardmore, Okla. "A geminivirus associated with leaf variegation in *Salvia splendens* and other viruses that cause aesthetic effects in ornamental plants.

4th Conference of the International Group on Legume and Vegetable Viruses. May 17-20, 2011. Antequera, Spain.

Invited speaker to the annual conference of the Society for the Advancement of Chicanos and Native Americans in Science. October 27-30, 2011. San Jose, Calif. Title of the presentation: Viruses that increase the aesthetics of some ornamental plants: beauty or beast?

Presentations, Webinars and Posters by Graduate Students

Washington Luis da Silva

Oral presentation

Histochemical analysis of wheat resistance to leaf blast mediated by silicon. APS Southern Division Annual Meeting, Corpus Christi, Texas, 2011,

Rebecca Melanson

Oral presentation

2011 Annual American Phytopathological Society Meeting – Southern Division, Corpus Christi, Texas, February 6-7, 2011

"Classification of strains of *Xyella fastidiosa* isolated from pecan in Louisiana as *Xylella fastidiosa* subspecies multiplex."

Bishnu K. Shrestha

Oral Presentations

2011 Annual American Phytopathological Society Southern Division Meeting, February 6-7, 2011, Corpus Christi, Texas -- "Expression of NAC-like transcription factor is involved in bacterial panicle blight resistance in rice."

2011 Annual American Phytopathological Society Meeting, August 6-10, 2011, Honolulu, Hawaii. -- "Suppression of bacterial panicle blight of rice by pretreatment with various chemical compounds."

Everlyne Wosula

Oral presentation

Wosula, E., Clark, C. A. and Davis, J. A. 2011. Potyvirus and insect vector movement in Louisiana sweetpotato fields. *Phytopathology* 91:S270.

Meetings Attended by Faculty

Zhi-Yuan Chen

APS Annual Meeting in Honolulu, Hawaii, August, 2011.

NCERA-208 Annual Meeting, Baton Rouge, La., October, 2011.

APS Field Crop Rust Symposium, San Antonio, Texas, December, 2011.

Chris Clark

Sweetpotato SCRI Annual Meeting, National Sweetpotato Collaborators Group Annual Meeting, U. S. Sweetpotato Council Conference - 1/21-26/11, Orange Beach, Ala.

Southern Division, American Phytopathological Society - 2/5-7/11, Corpus Christi, Texas.

Donald M. Ferrin

Southeast Fruit & Vegetable Conference, January 7-8, 2011, Savannah, Ga.

Blueberry SCRI Advisory Board Meeting, January 9, 2011, Savannah, Ga.

All about Blueberries CoP Advisory Board Meeting, January 9, 2011, Savannah Ga.

Sweetpotato SCRI Planning and Review Meeting, January 21, 2011, Orange Beach, Ala.

Sweetpotato Collaborators Meeting, January 22, 2011, Orange Beach, Ala.

Southern Division of A.P.S. annual meeting, February 6-7, 2011, Corpus Christi, Texas.



Dr. Chris Clark updating producers at the Sweetpotato Field Day.

National Clean Plant Network Education/ Outreach Work Group Meeting, February 17-18, 2011, Dallas, Texas.

A.P.S. annual meeting, August 6-10, 2011, Honolulu, Hawaii.

LSU AgCenter Sweetpotato Field Day, August 24, 2011, Oak Grove, La.

Jong Hyun Ham

2011 Oomycetes Genomics Workshop, Virginia Tech, Va., 6/28 – 7/1/2011.

2011 APS Southern Division Meeting, Corpus Christi, Texas, 2/6 – 2/7/2011.

2010 LSU AgCenter ACE group meeting, Crowley, La., 11/18/2010.

Clayton Hollier

2011 APS Meeting, Honolulu, Hawaii.

2011 National Conservation Meeting, Baton Rouge, La.

2011 Southern Division, APS, Corpus Christi, Texas.

Jeff Hoy

Annual Meeting of the American Society of Sugar Cane Technologists, New Orleans, La.

Edward C. McGawley

Beltwide Cotton Meeting, Atlanta, Ga., January 2011.

Regional Project S-1046, Atlanta, Ga., January 2011.

Society of Nematologists Annual Meeting, Corvallis, Ore., July 2011.

Charles Overstreet

Beltwide Cotton Conference, Atlanta, Ga., January 5-7, 2011.

Society of Nematology meeting, Corvallis, Ore., July 17-20, 2011.

Organization of Nematologists of Tropical America meeting, Coimbra, Portugal, September 4-8, 2011.

Meetings Attended by Faculty (continued)

Raymond W. Schneider

Southern Soybean Disease Workers. Pensacola Beach Fla., March 10-11, 2011.

NCERA 208. Soybean Rust, a New Threat to the U.S. Soybean Industry. Baton Rouge, La., October 3-4, 2011.

Raghuwinder Singh

American Phytopathological Society Annual Meeting. Honolulu, Hawaii, August 5-10, 2011.

89th Louisiana Farm Bureau Federation Annual Meeting. New Orleans, La., July 7-9, 2011.

Mid-South Green Industry Conference. Raymond, Miss., June 23-24, 2011.

Louisiana Legislative Fete. Baton Rouge, La., May 17, 2011.

Master Gardener Appreciation Day. Hammond, La., May 13, 2011.

LSU AgCenter AgMagic. Baton Rouge, La., May 1-3, 2011.

USDA-APHIS-AAVLD Quality Management System Training for Lab Accreditation Star-D Project. Ames, Iowa, April 12-14, 2011.

Louisiana Agricultural Consultants Association Annual Meeting, Alexandria, La., February 9-11, 2011.

Louisiana State Horticulture Association Annual Meeting. Baton Rouge, La., February 3, 2011.

Louisiana Turfgrass Association Annual Meeting. Baton Rouge, La., January 6, 2011.

Landscape Pest Management Workshop. Hammond Research Station, Hammond, La., February 3, 2011.

USDA APHIS PPQ CPHST NPBGL *Ralstonia solanacearum* R3B2 Workshop. Beltsville, Md., November 7-10, 2010.

Garden Shows

Honorary Mention for the Plant Health Clinic at the New Orleans Spring Garden Show, New Orleans, La., April 2, 2011.



Gray mold of strawberry caused by *Botrytis cinerea*.

Burden Center Garden Festival. Baton Rouge, La., June 18, 2011.

Master Gardener Appreciation Day. Hammond, La., May 13, 2011.

Tarc's Garden and Market Festival. Houma, La., April 30, 2011.

New Orleans Spring Garden Show, New Orleans, La., April 2, 2011.

New Orleans Spring Garden Show, New Orleans, La., April 3, 2011.

Baton Rouge Spring Garden Show, Baton Rouge, La., March 27, 2011.

Baton Rouge Spring Garden Show, Baton Rouge, La., March 26, 2011.

Southwest Louisiana Garden Festival, Lake Charles, La., March 25, 2011.

Northshore Spring Garden Show, Covington, La., March 19, 2011.

Hammond Spring Garden Day, Hammond, La., March 12, 2011.

Meetings Attended by Graduate Students

Washington Luis da Silva

APS Southern Division Annual Meeting, Corpus Christi, February 6-7, 2011, Corpus Christi, Texas, USA.

49th Annual Meeting & Convention of THE UNITED STATES SWEET POTATO COUNCIL, January 23-25, 2011, Orange Beach, Ala.

Felix Francis

"Oomycete Bioinformatics Training Workshop" at Virginia bioinformatics institute, Virginia Tech. (June 29- July 1, 2011).

Workshop on "High Performance Computing Application of R and Other Codes for Biological Research" at the National Institute for Mathematical and Biological Synthesis (NIMBioS), University of Tennessee. (May 9-11, 2011).

Rebecca Melanson

2011 Annual American Phytopathological Society Meeting – Southern Division, Corpus Christi, Texas, February 6-7, 2011.

2011 Annual American Phytopathological Society Meeting – Honolulu, Hawaii, August 6-11, 2011.

Bishnu K. Shrestha

2011 Annual American Phytopathological Society Southern Division Meeting, February 6-7, 2011, Corpus Christi, Texas.

2011 Annual American Phytopathological Society Meeting, August 6-10, 2011, Honolulu, Hawaii.

Everlyne Wosula

Southern Division American Phytopathological Society meeting 6-7th February 2011 Corpus Christi, Texas.

Déborah M. Xavier

2011 Beltwide Cotton Conference – January 4-7 – Atlanta, Ga.

Aime and Schneider Present Work in Taiwan

In July 2011, faculty and staff at the Asia Vegetable Research and Development Center, Taiwan, got a glimpse into the fascinating and strange world of fungi when Drs. M. Catherine Aime and Raymond W. Schneider, Plant Pathology & Crop Physiology, LSU AgCenter, presented their work. Dr. Schneider spoke about the mycoparasite *Simplicillium lanosoniveum*, which was as effective as chemical fungicides when sprayed in field trials to control soybean rust (*Phakopsora pachyrhizi*). He also discussed research on using a simple sugar to control damping-off pathogens (*Pythium spp.*) in rice seedlings.

Dr. Aime's special interest is documenting the biodiversity of fungi—a daunting task, as only about 5-10 percent of the probable 1.5 million fungal species have been described so far, and that's just for temperate regions. She led an informal discussion about fungal systematics and taxonomy with Dr. Jaw-Fen Wang, Global Theme Leader - Production, members of the Center's plant pathology group and Tomas Rush, an LSU AgCenter graduate student co-advised by Drs. Aime and Schneider. Rush recently completed a two-month stay at the Center to search for an alternate host for soybean rust.

Visiting Scientists/Students

Cathie Aime

Post doctoral researcher, Dr. Merje Toome, arrived Dec. 2010 from Estonia, working on the Assembling the Fungal Tree of Life grant.

Visiting scientist Dr. Gregory Heller arrived Dec. 2010 and is developing microsatellite markers for potential biocontrol agents of rust.

Visiting scientist Alistair McTaggart, arrived Jan. 2011 from Agri-Science, Queensland Australia, working on DNA barcodes for rust fungi.

Doctoral student Rachel Koch arrived Aug. 2011 from the University of Notre Dame and is jointly advised by Drs. Aime and Husseneder in the Department of Entomology.

Masters student Donald Nelson arrived Aug. 2011 from Minnesota.

Jong Hyun Ham

Rachadapron Keawwan, intern research associate (Dept. Plant Pathology, Kasetsart University, Bangkok, Thailand)(5/11 – 8/11)

Charles Overstreet

I have an Intern, Leonardo Momingues de Figueiredo, working with me from Federal University of Viçosa (UFV), Brazil.

Rodrigo A. Valverde

During July, several scientists (plant virologists) visited my laboratory:

Dr. Elliot Kitajima, plant virologist from Universidade de Sao Paulo, Piracicaba, Brazil.

Dr. Hiro Moriyama and Graduate Student Ryo Okada from Laboratory of Molecular and Cellular Biology, Faculty of Agriculture, Tokyo University of Agriculture and Technology, Fuchushi, Tokyo, Japan.

Dr. Pongtharin Lotrakul, (former graduate student from my laboratory), Dept. of Botany, Chulalongkorn University (Bangkok, Thailand).

Nicole Ward Earns Her Doctorate



Nicole A. Ward graduated with her Ph.D. in May 2011. She examined the mycoparasite, *Simplicillium lanosoniveum*, and investigated its potential for biological control of the soybean rust pathogen, *Phakopsora pachyrhizi* under the direction of Dr. Raymond Schneider. While at LSU, Nicole received numerous prestigious awards, honors and speaking invitations, and is the senior author of the Cercospora leaf blight section in the newly revised Compendium of Soybean Diseases and Pests, Fifth Edition, to be published by APS PRESS. In August 2011, she joined the Department of Plant Pathology at the University of Kentucky as an assistant professor of Extension Plant Pathology. She will focus her extension/research program on woody plants, fruits and ornamentals.



Dr. Nicole Ward and her major professor, Dr. Raymond Schneider.



Diseased boxwood. (photo by R. Singh)

LSU AgCenter's Newly Enhanced Plant Diagnostic Center

Raghuwinder Singh

Plants get sick just like we do. Plant health problems are caused by a variety of plant pathogens, nematodes, insect pests and mites. Weeds compete with crops for space, sunlight and nutrients. Adverse environmental conditions also can contribute to plant health problems. Plant problems caused by different agents may exhibit similar symptoms, or those caused by similar agents may show different symptoms. Misdiagnosis of these problems may add to the losses, significantly increase cost of production and decrease profits. Accurate and rapid diagnosis is required for selecting the best management practices at the most effective time. Before you attempt to correct a problem, you must first

determine its cause and this is where we can help! The newly enhanced Plant Diagnostic Center is a one stop shop for all your plant health related problems. Whether it's an insect problem, a weed problem, a nematode problem or a plant disease problem, the answer can be found at the LSU AgCenter Plant Diagnostic Center. Services available through the center include plant disease diagnosis (biotic and abiotic causes), insect and mite diagnosis/identification (plant related only), nematode diagnosis/ identification and weed identification. For more information please visit our webpage: <http://www.lsuagcenter.com/plantdiagnostics>.

Graduate Student Association

2010-2011 Outgoing Officers

President: Rebecca Melanson

Vice-president: Andrew Rodriguez

Secretary: Deborah Xavier

Treasurer: Bishnu Shrestha

Faculty Advisor: Dr. Clark

2011-2012 Incoming Officers

President: Rebecca Melanson

Vice-president: James Young

Secretary: Felix Francis

Treasurer: Washington Da Silva

Faculty Advisors: Drs. Overstreet and Ferrin



Graduate students visit USDA-ARS Southern Regional Research Center in New Orleans January 11, 2011.



2011 Southern Division APS Meeting, San Antonio, Tx.



Graduate students attending the annual APS Meeting in Honolulu, Hawaii.



Seminar Speaker Dr. Brett Tyler visits the Department in April, 2011.

GSA Invited Speaker

The Graduate Student Association hosted Dr. Brett Tyler, a professor at the Virginia Bioinformatics Institute and in the Department of Plant Pathology, Physiology and Weed Science at Virginia Polytechnic Institute and State University, on April 26 and 27, 2011. During his visit to LSU, Dr. Tyler was introduced to the rich culture of Louisiana and the South as he joined students for meals and discussions at The Chimes and at Boutin's Restaurant and for a tour of Burden's Rural Life Museum. Dr. Tyler met with PPCP faculty and students to learn about the research being conducted and to share his own experiences and knowledge as a professional. He presented a seminar entitled, "How effectors of oomycete and fungal plant pathogens enter host cells and promote disease."

Dr. Tyler was nominated as the third PPCP GSA spring seminar speaker since Dr. Datnoff's institution of the PPCP GSA Spring Seminar Speaker in 2008. Previous invited seminar speakers were Dr. Duroy Navarre and Dr. Joyce Loper.



PPCP NEWS



Department of Plant Pathology & Crop Physiology