JONG HYUN HAM

Curriculum Vitae

Dept. Plant Pathology and Crop Physiology
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EDUCATION

1993. 8 – 1998. 10	Ph.D. Plant Pathology, Cornell University
1991. 8 – 1992. 2	Second lieutenant, The 3rd Korean Army Academy
1989. 3 – 1991. 2	M.S. Plant Pathology, Korea University
1985. 3 – 1989. 2	B.S. Agricultural Biology, Korea University

PROFESIONAL EXPERIENCE

2013. 7 – present	Associate Professor, Department of Plant Pathology and Crop Physiology, Louisiana State University/Louisiana State University Agricultural Center
2007. 10 – 2013.6	Assistant Professor, Department of Plant Pathology and Crop Physiology, Louisiana State University/Louisiana State University Agricultural Center
2006.1 – 2007. 9	Research Scientist, Department of Horticulture and Crop Sciences, The Ohio State University
2004. 3 – 2006.1	Post-doctoral Researcher, Department of Horticulture and Crop Sciences, The Ohio State University
2002. 3 – 2004. 3	Post-doctoral Researcher, Department of Plant Pathology, The Ohio State University
1999. 11 – 2002. 3	Post-doctoral Researcher, Department of Plant Pathology, University of Wisconsin-Madison
1998. 10 – 1999. 8	Post-doctoral Researcher, Department of Crop Sciences, University of Illinois at Urbana-Champaign

PROFESIONAL SERVICE

Associate Editor for the journal *Phytopathology* (02/2015 – 01/2018)

Chair of the Biological Control Committee of the American Phytopathological Society (2017 – 2018) (*elected*)

Vice Chair of the Biological Control Committee of the American Phytopathological Society (2016 – 2017) (*elected*)

Member of APHIS Widely Prevalent Bacteria Committee as a regional coordinator for Louisiana, Arkansas, Texas, Mississippi, Alabama, and Oklahoma (2015 - present) (*invited*)

Chair of the Bacteriology Committee of the American Phytopathological Society (2014 – 2015) (*elected*)

Vice Chair of the APS Bacteriology Committee (2013-2014)

RESEARCH ACTIVITIES

Publications in Refereed Journals

Shrestha B. K., D. H. Oh, M. Dassanayake, and **J. H. Ham**. 2017. Analysis of genome sequence variations among three U.S. rice varieties showing differential quantitative resistance to bacterial panicle blight and sheath blight. *PLoS ONE* (under review)

Melanson, R. A., I. Barphagha, S. Osti, T. Lelis, H. S. Karki, R. Chen, B. K. Shrestha, and **J. H. Ham**. 2017. Identification of new regulatory genes involved in the pathogenic functions of the rice pathogenic bacterium *Burkholderia glumae*. *Microbiology* 163: 266-279.

C. Y. Jeong and **J. H. Ham**. 2017. Comparative analysis of the microbial community in the sediments of two constructed wetlands differentially influenced by the concentrated poultry feeding operations. *Journal of Soils and Sediments* 17: 557-566.

Jin, L., **J. H. Ham**, R. Hage, W. Zhao, J. Soto-Hernandez, S. Y. Lee, S. M. Paek, M. G. Kim, C. Boone, D. L. Coplin, D. Mackey. 2016. Direct and indirect targeting of PP2A by conserved type III-effector proteins. *PLoS Pathogens* 12(5): e1005609.

Karki, H. S. and **J. H. Ham**. 2016. Testing the effect of UV radiation on the survival of *Burkholderia glumae*. Bio-protocol 6(5) e1755.

Shrestha, B. K., H. S. Karki, D. E. Groth, and **J. H. Ham**. 2015. Isolation and characterization of rice-associated *Bacillus* spp. showing antagonistic activities against the rice pathogens *Rhizoctonia solani* and *Burkholderia glumae*. *PLoS ONE* 11(1): e0146764. DOI:10.1371/journal.pone.0146764.

Chen, R., I. Barphagha, and **J. H. Ham**. 2015. Identification of potential genetic components involved in the deviant quorum-sensing signaling pathways of *Burkholderia glumae* through a functional genomics approach. *Frontiers in Cellular and Infectious Microbiology* 5:22 doi: 10.3389/fcimb.2015.00022. eCollection 2015.

Kim, B. S. J. W. Han, J. D. Kim, J. M. Lee, **J. H. Ham**, and D. Lee. 2014. Structural elucidation and antimicrobial activity of new phencomycin derivatives isolated from *Burkholderia glumae* strain 411gr-6. *Journal of Antibiotics* 67(10):721-3. doi: 10.1038/ja.2014.50. Epub 2014 Apr 30.

Karki, H. S. and **J. H. Ham**. 2014. The roles of the shikimate pathway genes, *aroA* and *aroB*, in virulence, growth, and UV tolerance of *Burkholderia glumae* strain 411gr-6. *Mol. Plant Pathol.* 15(9): 940-947. DOI: 10.1111/mpp.12147. [Epub ahead of print]

Gangadharan A., M.-V. Sreerekha, J. Whitehill, **J. H. Ham**, and D. Mackey. 2013. The*Pseudomonas syringae* pv. *tomato* type III effector HopM1 suppresses Arabidopsis defenses independent of suppressing salicylic acid signaling and of targeting AtMIN7. *PLoS ONE* 8(12): e82032. doi:10.1371/journal.pone.0082032

Choi, H. W., D. S. Kim, N. H. Kim, H. W. Jung, **J. H. Ham**, and B. K. Hwang. 2013. *Xanthomonas* filamentous hemagglutinin-like protein Fha1 interacts with pepper hypersensitive induced reaction protein CaHIR1 and functions as a virulence factor in host plants. *Mol. Plant-Microbe Interact.* 26: 1441-1454

Francis, F., J. Kim, T. Ramaraj, A. Farmer, M. C. Rush, and **J. H. Ham**. 2013. Comparative genomic analysis of two *Burkholderia glumae* strains from different geographic origins reveal a high degree of plasticity in genome structure associated with genome islands. *Molecular Genetics and Genomics* 288:195-203.

Kim, H. Y., J. D. Kim, J. S. Hong, **J. H. Ham**, and B. S. Kim. 2012. Identification of antifungal niphimycin from *Streptomyces* sp. KP6107 by screening based on adenylate kinase assay. *J. Basic Microbiol.* 52: 1 -9.

Chen, R., I. K. Barphagha, and **J. H. Ham**. 2012. Dissection of quorum-sensing genes in *Burkholderia glumae* reveals non-canonical regulation and the new regulatory gene *tofM* for toxoflavin production. *PLoS ONE* 7: e52150.

Ham, J. H. 2012. Intercellular and intracellular signaling systems that globally control expression of virulence genes in plant pathogenic bacteria. *Mol. Plant Pathol.* 14: 308 – 322.

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

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

Karki, H. S., I. K. Barphaga, and **J. H. Ham**. 2012. A conserved two-component regulatory system, PidS/PidR, globally regulates pigmentation and virulence-related phenotypes of *Burkholderia glumae*. *Mol. Plant Pathol.* 13:785-794.

Ham, J. H.*, R. A. Melanson, and M. C. Rush. 2011. *Burkholderia glumae*: Next major pathogen of rice? *Mol. Plant Pathol.* 12: 329-339. ***:** Corresponding author.

Ham, J. H., D. R. Majerczak, K. Nomura, C. Mecey, F. Uribe, S.-Y. He, D. Mackey, and D. L. Coplin. 2009. Multiple activities of the plant pathogen type III effector proteins WtsE and AvrE require WxxxE motifs. *Mol. Plant-Microbe Interact.* 22: 703-712 (***MPMI Editor's pick***).

Ham, J. H., D. R. Majerczak, S. Ewert, M.-V. Sreerekha, D. Mackey, and D. L. Coplin. 2008. WtsE, an AvrE-family type III effector protein of *Pantoea stewartii* subsp. *stewartii*, causes cell death in nonhost plants. *Mol. Plant Pathol.* 9: 633-643.

Ham, J. H., M. G. Kim, S. Y. Lee, and D. Mackey. 2007. Layered basal defenses underlie nonhost resistance of *Arabidopsis* to *Pseudomonas syringae* pv. *phaseolicola. The Plant Journal* 51: 604-616.

Ham, J. H., D. R. Majerczak, A. R. Arroyo-Rodriguez, D. M. Mackey, and D. L. Coplin. 2006. WtsE, an AvrE-family effector protein from *Pantoea stewartii* subsp. *stewartii*, causes disease-associated cell death in corn and requires a chaperone protein for stability. *Mol. Plant-Microbe Interact.* 19: 1092-1102.

Quirino, B. F.*, R. Genger*, **J. H. Ham*,** G. Zabala, and A. Bent. 2004. Identification and functional analysis of Arabidopsis proteins that interact with resistance gene product RPS2 in yeast. *Physiol. Mol. Plant Pathol.* 65: 257-267. ***:** Co-first author.

Rojas, C. M.*, **J. H. Ham***, L. M. Schechter, J. F. Kim, S. V. Beer, and A. Collmer. 2004. The *Erwinia chrysanthemi* EC16 *hrp/hrc* gene cluster encodes an Active Hrp type III secretion system that is flanked by virulence genes functionally unrelated to the Hrp system. *Mol. Plant-Microbe Interact.* 17: 644-653. ***:** Co-first author.

Jurkowski, G. I., R. K. Smith, Jr., I. Yu, **J. H. Ham,** S. B. Sharma, D. F. Klessig, K. A. Fengler, and A. F. Bent. 2004. *Arabidopsis DND2*, a second cyclic nucleotide-gated ion channel gene for which mutation causes the "*defense, no death*" phenotype. *Mol. Plant-Microbe Interact.* 17: 511-520.

Ham, J. H., Y. Y. Cui, J. R. Alfano, P. Rodríguez-Palenzuela, C. M. Rojas, A. K. Chatterjee, and A. Collmer. 2004. Analysis of *Erwinia chrysanthemi* EC16 *pelE*::*uidA*, *pelL*::*uidA*, and *hrpN*::*uidA* mutants reveals strain-specific atypical regulation of the Hrp type III secretion system. *Mol. Plant-Microbe Interact.* 17: 184-194.

Do, H. M., J. K. Hong, H. W. Jung, S. H. Kim, **J. H. Ham**, and B. K. Hwang. 2003. Expression of peroxidase-like genes, H_2O_2 production, and peroxidase activity during the hypersensitive response to *Xanthomonas campestris* pv. *vesicatoria* in *Capsicum annuum*. *Mol. Plant-Microbe Interact.* 16: 196-205.

Rojas, C. M., **J. H. Ham,** Deng, W.-L., Doyle, J. J., and A. Collmer. 2002. HecA, a member of a class of adhesins produced by diverse pathogenic bacteria, contributes to the attachment, aggregation, epidermal cell killing, and virulence phenotypes of *Erwinia chrysanthemi* EC16 on *Nicotiana clevelandii* seedlings. *Proc. Natl. Acad. Sci. U.S.A.* 99: 13142 - 13147.

Ham, J. H., D. W. Bauer, and A. Collmer. 1998. A cloned *Erwinia chrysanthemi* Hrp (typeIII protein secretion) system functions in *Escherichia coli* to deliver *Pseudomonas syringae* Avr protein signals to plant cells and to secrete Avr proteins in culture. *Proc. Natl. Acad. Sci. U.S.A.* 95: 10206 - 10211.

Kim, J. F., **J. H. Ham**, D. W. Bauer, A. Collmer, and S. V. Beer. 1998. The *hrpC* and *hrpN* operons of *Erwinia chrysanthemi* EC16 are flanked by *plcA* and homologs of hemolysin/adhesin genes and accompanying activator/transporter genes. *Mol. Plant-Microbe Interact.* 11: 563 - 567.

Alfano, J. R., **J. H. Ham**, and A. Collmer. 1995. Use of Tn*5*tac1 to clone a *pel* gene encoding a highly alkaline, asparagine-rich pectate lyase isozyme from *Erwinia chrysanthemi* EC16 mutant with deletions affecting the major pectate lyase isozymes. *J. Bacteriol.* 177: 4553 – 4556.

Ham, J. H., Y. J. Kim, and B. K. Hwang. 1991. Induction of resistance to Metalaxyl of *Phytophthora capsici* by chemical mutagenesis. *Korean J. Plant Pathol.* 7: 133 – 139.

Ham, J. H., B. K. Hwang, Y. J. Kim, and C. H. Kim. 1991. Differential sensitivity to Metalaxyl of isolates of *Phytophthora capsici* from different geographic areas. *Korean J. Plant Pathol.* 7: 212 – 220.

Book Edited

Virulence mechanisms of plant pathogenic bacteria. 2015. Edited by N. Wang, J. Jones, G. Sundin, F. White, S. Hogenhout, C. Roper, L. De La Fuente, and **J. H. Ham**. APS Press, Saint Paul, MN. USA.

Book Chapters

J. H. Ham, J. Jones, and W. Chun. 2018. *Burkholderia*. In *Laboratory Guide for Identification of Plant Pathogenic Bacteria, Fourth Edition.* J. Jones *et al.* Eds. APS Press. Sait Paul, MN. USA. (*In preparation upon invitation*)

Melanson, R. A. and **J. H. Ham**. 2017. Virulence factors produced by plant pathogenic bacteria (Chapter 19, p 305 - 318). In *Plant Pathology: Concepts and Laboratory Exercises, Third Edition*. Robert N. Trigiano and Bonnie Ownley, Eds. Taylor and Francis Group, LLC.

Ham, J. H. and Luis da Cunha. 2015. Virulence mechanisms of soft-rot-causing plant pathogenic bacteria. In *Virulence mechanisms of plant pathogenic bacteria*. Edited by N. Wang *et al.,* pages 419-444. N. Wang *et al.* Ed. APS Press, Saint Paul, MN. USA.

Ham, J. H. 2012. Signaling systems for the regulation of virulence factors in plant pathogenic bacteria. Pages 211-242 in: *Plant Health* (in Korean). B. K. Hwang, Eds. Korea University Press.

Oard, S., **Ham, J.**, and Cohn, M. A. 2012. Thionins - nature's weapons of mass protection. Pages 472-511 in: *Small wonders: peptides for disease control. American Chemical Society Symposium Series 1095*. American Chemical Society, Washington, DC: Oxford University Press, Inc.

Ham J. H., M. G. Kim, and D. Mackey. 2006. Nonhost Resistance of Arabidopsis to *Pseudomonas syringae* pv. *phaseolicola* Is Mediated by Multiple, Independently Effective Layers of Basal Defense. Pages 260-269 in: *Biology of Plant-Microbe Interactions, Vol. 5*. Federico Sanchez, Carmen Quinto, Isabel M. Lopez-Lara, and Otto Geiger, Eds. APS press, St. Paul.

Ham, J. H. and A. F. Bent. 2002. Recognition and defense signaling in plant/bacterial and fungal interactions. Pages 198-224 in: *Plant Signal Transduction: Frontiers in Molecular*

Biology. Dierk Scheel and Claus Wasternack, Eds. Frontiers in Molecular Biology Series, Oxford University Press.

Collmer, A., Charkowski, A. O., Deng, W.-L., Fouts, D. E., **Ham, J. H**., Rehm, A. H., van Dijk, K., and Alfano, J. R. 2001. Bacterial Avr proteins: secreted agents of parasitism and elicitors of plant defense. Pages 36-45 in: *Delivery and Perception of Pathogen Signals in Plants*. N. T. Keen, S. Mayama, J. E. Leach, and S. Tsuyumu, Eds. APS Press, St. Paul.

Collmer, A., J. R. Alfano, D. W. Bauer, G. M. Preston, A. O. Loniello, A. Conlin, **J. H. Ham**, H.-C. Huang, S. Gopalan, and S. Y. He. 1996. Secreted proteins, secretion pathways, and the plant pathogenicity of *Erwinia chrysanthemi* and *Pseudomonas syringae*. Pages 159-164 in: *Biology of Plant-Microbe Interactions*, *Vol. 1,* G. Stacey, B. Mullin, and P. M. Gresshoff, Eds.

Proceedings

Jeong, C.Y. and J. Ham. 2015. Characterization of microbial community structure in wetlands sediments contaminated with animal waste. ASA-CSSA-SSSA Meeting, Nov. 15-18., Minneapolis, MN. Proceeding, P 210.

Karki, H.S., Shrestha, B.K., Groth, D.E., and **Ham, J.H.** 2014. Development of New Rice Lines Showing Broad Disease Resistance to Bacterial Panicle Blight and Sheath Blight. Proc. of the Rice Tech. Wrkg. Grp., New Orleans, LA, Feb. 18-21. 35:50.

Shrestha, B.K., H. S. Karki, D. E. Groth, X. Sha, P. K. Subudhi, H. Utomo, and **J. H. Ham**. 2012. Development of Quantitative Trait Loci (QTL) Mapping and Breeding Programs to Improve Rice Resistance to Bacterial Panicle Blight and Sheath Blight. Proceedings… 34th Rice Technical Working Group.

Subudhi, P.K., **J. Ham**, C.A. Kimbeng, J.W. Hoy, and N. Baisakh. 2012. Marker-assisted breeding to enhance disease resistance in corn, rice, and sugarcane. USDA-DOE Project Directors Meeting, Town and Country Resort Center, San Diego, CA, Jan 13, 2012. Annual Report, Pp 126-129.

Subudhi, P.K., **J. Ham**, C. A. Kimbeng, J.W. Hoy, N. Baisakh. 2011. Marker-assisted breeding to enhance disease resistance in corn, rice, and sugarcane. USDA-NIFA Agriculture and Food Research Initiative, Plant Genome, Genetics, and breeding Programs Project Directors Meeting, San Diego, CA, Jan 14, 2011. Annual Report, Pp 152-154.

Groth, D.E., M. C. Rush, A. K. M. Shahjahan, X. Sha, and **J. Ham.** 2010. Control options for rice bacterial panicle blight. Proc. International Rice Conf. of Latin America and the Caribbean 11:48.

Rush, M.C., D. E. Groth, **J. Ham**, and R. Nandakumar. 2010. Bacterial panicle blight causes and suggested controls. International Rice Conf. of Latin America and the Caribbean 11:45.

Ham, J.H., B. Shrestha, H. Karki, X. Sha, D. Groth, H. Utomo, R. Nandakumar, and M.C. Rush. 2010 Development of a genetic mapping and breeding program to develop resistance to the bacterial panicle blight and sheath blight diseases. Proceedings… 33rd Rice Technical Working Group. p 60.

Ham J. H. 2008. Novel functional motifs of bacterial type III effector: A new insight into the role of small G proteins in plant disease resistance. Pages 33-36 in: *New Approaches to Plant Disease Management.* Korean Society of Plant Pathology.

Annual Reports

Ham, J. H., I. K. Barphagha, and D. E. Groth. 2017. Genetic mapping, breeding, and development of new strategies to improve rice disease management for sheath blight and bacterial panicle blight. 108th Annual Research Report of Rice Research Station (for 2016), p 296 – 303.

Ham, J. H., B. K. Shrestha, J. Peng, T. Lelis, N. Jungkhun, I. Barphagha, and D. E. Groth. 2016. Genetic mapping, breeding, and development of new strategies to improve rice disease management for sheath blight and bacterial panicle blight. 107th Annual Research Report of Rice Research Station (for 2015), p 269 – 275.

Ham, J. H., B. K. Shrestha, S. Osti, I. Barphagha, and D. E. Groth. 2015. Genetic mapping, breeding, and development of new strategies to improve rice disease management for sheath blight and bacterial panicle blight. 106th Annual Research Report of Rice Research Station (for 2014), p 284 – 290.

Ham, J.H., B. Shrestha, H. Karki, S. Osti, and D. E. Groth. 2014. Genetic mapping and breeding of rice to improve rice disease resistance to bacterial panicle blight and sheath blight. 105th Annual Research Report of Rice Research Station (for 2013), p338 – 357

Ham, J.H., B. Shrestha, H. Karki, and D. E. Groth. 2013. Development of new disease control strategies for bacterial panicle blight and sheath blight. 104th Annual Research Report of Rice Research Station (for 2012), p351 – 354

Ham, J.H., B. Shrestha, H. Karki, and D. E. Groth. 2013. Genetic mapping and breeding of rice to improve rice disease resistance to bacterial panicle blight and sheath blight. 104th Annual Research Report of Rice Research Station (for 2012), p336 – 350.

Ham, J.H., B. Shrestha, H. Karki, D. E. Groth, X. Sha. 2012. Genetic studies to understand and improve rice disease resistance to bacterial panicle blight and sheath blight. 103rd Annual Research Report of Rice Research Station (for 2011), p311 – 320.

Abstracts for Conferences Published in Scientific Journals

De Paula Lelis, T. J. Peng, S. Osti, and **J. H. Ham.** 2016. The virulence function and regulation of the metalloprotease gene *prtA* in the bacterial plant pathogen, *Burkholderia glumae*. Phytopathology *In press*

Ham, J. H. and J. Peng. 2016. The negative regulatory function of *tepR* for the virulence of *Burkholderia glumae* in rice is exerted via the quorum-sensing master regulator gene *qsmR.* Phytopathology *In press*

Shrestha, B. K., D. H. Oh, D. Dassanayake, and **J. H. Ham.** 2015. Identification of genome variants of rice associated with disease resistance to sheath blight and bacterial panicle blight

through NGS sequencing. Phytopathology 105 (11):S4.127

Peng, J. and **J. H. Ham**, S. Osti, and I. K. Barphagha. 2015. Comparative transcriptomic analysis of *Burkholderia glumae* reveals the important role of *tepR* gene in regulating a multitude of cellular processes. Phytopathology 105 (11):S4.109

Ham, J. H. and R. Chen. 2014. An RNA-sequencing analysis implicates the presence of multiple cell-to-cell signaling pathways in the rice pathogenic bacterium *Burkholderia glumae*. Phytopathology 104 (11):S3.50

Osti, S., I. K. Barphagha, and **J. H. Ham**. 2014. *tepR*: A new *luxO*-type regulatory gene of the rice pathogenic bacterium, *Burkholderia glumae*. Phytopathology 104 (11):S3.87

Shrestha, B. K., H. S. Karki, and **J. H. Ham.** 2014. Genome-wide identification of molecular markers for partial resistance of rice to bacterial panicle blight using high-throughput sequencing data. Phytopathology 104 (11):S3.108

Caldera, M. A., **J. Ham**, and R. Singh. 2013. Development of a loop-mediated isothermal amplification for detection of *Burkholderia glumae*. Phytopathology 103 (6): S2.23

Shrestha, B. K., M. C. Rush, D. E. Groth, and **J. Ham**. 2013. Suppression of sheath blight development in rice and sclerotia germination of *Rhizoctonia solani* by rice-associated strains of *Bacllus* spp. Phytopathology 103 (5): S1.9 – 1.10

Karki, H. S. and **J. H. Ham**. 2013. Virulence deficiencies associated with the mutation of *aroA* and *aroB* genes of *Burkholderia glumae* strain 411gr-6. Phytopathology 103 (5): S1.6

J. H. Ham. 2013. The complex regulatory and signaling network for the virulence of the rice pathogenic bacterium *Burkholderia glumae* revealed by various molecular genetic and genomic studies. Phytopathology 103 (5): S1.5

Chen, R., F. Francis, J. Kim, and **J. H. Ham**. 2013. A transcriptome analysis to identify the regulon of the TofI/TofR quorum-sensing implies the presence of DSF-mediated signing system in *Burkholderia glumae*. Phytopathology 103 (5): S1.2

Osti, S., I. K. Barphaga, and **J. H. Ham.** 2013. The noble regulator, *tepR*, influences toxoflavin production and virulence in the rice pathogenic bacterium *Burkholderia glumae*. Phytopathology 103(5):S1.8

Melanson, R. A., I. K. Barphagha, and **J. H. Ham**. 2013. Genetic analyses of *ntpR* encoding a novel negative regulator for toxoflavin production in the rice-pathogenic bacterium *Burkholderia glumae*. Phytopathology 103(6):S2.192

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

Karki, H. S. and **J. H. Ham.** 2012. Naturally occurring avirulent strains of *Burkholderia glumae* isolated from rice fields fail to express multiple virulence genes. Phytopathology 102: S4.62

Chen, R., I. K. Barphagha, and **J. H. Ham.** 2012. *tofM* encoding a putative quorum-sensing modulator is required for the *N*-acyl homoserine lactone–independent biosynthesis of toxoflavin in *Burkholderia glumae.* Phytopathology 102: S4.22

Francis, F., J. Kim, and **J. H. Ham.** 2012. Genomic island-based plasticity among the genomes of rice pathogenic *Burkholderia glumae* and *B. gladioli* strains. Phyopathology 102: S4.41

Chen, R., I. K. Barphagha, and **J. H. Ham**. 2012. Regulation of the virulence factors by the TofI/TofR quorum-sensing system in *Burkholderia glumae*: The major pathogen causing bacterial panicle blight of rice. Phytopathology 102: S2.2.

Francis, F., J. Kim, and **J. H. Ham**. 2012. Comparative genomic analyses of the rice pathogenic *Burkholderia glumae* strains reveal plasticity among the genomes. Phytopathology 102: S2.4.

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

Karki, H. S., B. K. Shrestha, D. E. Groth, and **J. H. Ham**. 2012. Genetic and phenotypic variations among *Burkholderia glumae* strains, the causal agent of bacterial panicle blight of rice. Phytopathology 102: S2.6.

Melanson, R. A., I. K. Barphagha, H. S. Karki, B. K. Shrestha, R. Chen, and **J. H. Ham**. 2012. Transposon mutagenesis of *Burkholderia glumae* 336gr-1 and screening of mutant derivatives identified *ntpR*, a novel negative regulator of toxoflavin production. Phytopathology 102: S2.8.

Shrestha, B. K., S. Wagle, M. C. Rush, and **J. H. Ham**. 2012. Antagonistic activities of rice-associated bacteria against *Burkholderia glumae* and *Rhizoctonia solani*. Phytopathology 102: S2.8.

Karki, H. S., I. K. Barphagha, and **J. H. Ham**. 2011. Functional characterization of the PidS/PidR two-component regulatory system of *Burkholderia glumae*. Phytopathology 101:S88.

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

Chen, R., I. Barphagha, and **J. H. Ham**. 2011. A genomics study of *Burkholderia glumae* genes regulated by quorum-sensing. Phytopathology 101:S264.

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

Karki, H. S., I. Kaur, and **J. H. Ham**. 2011. Role of melanin-like pigments in the virulence of *Burkholderia glumae*. Phytopathology 101:S266.

Melanson, R. A., R. S. Sanderlin, and **J. H. Ham**. 2011. Classification of strains of *Xylella fastidiosa* isolated from pecan in Louisiana as *Xylella fastidiosa* subsp. *multiplex*. Phytopathology 101:S267.

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

Ham, J. H., I. Kaur, H. S. Karki, B. K. Shrestha, R. Melanson, R. Chen, and M. C. Rush. 2010. Identification of novel regulatory genes of *Burkholderia glumae* for virulence factors. Phytopathology 100:S47.

Karki, H., A. Shahjahan, R. Nandakumar, M.C. Rush, and **J. H. Ham**. 2009. Characterization of naturally avirulent strains of *Burkholderia glumae*, the causative agent of bacterial panicle blight of rice. Phytopathology 99:S62.

Melanson, R. A., S. Gil, **J. H. Ham**, and R. S. Sanderlin. 2009. Insect transmission and genotypic variation of pecan pathogenic *Xylella fastidiosa* strains in Louisiana. Phytopathology 99:S83.

Ham, J. H., D. R. Majerczak, D. Mackey, D. L. Coplin. 2006. Characterization and functional analysis of WtsE, an AvrE-family type III effector protein. Phytopathology 96:S45.

Ham, J. H. and D. L. Coplin. 2003. The Lon protease is a negative regulator of the Hrp type III secretion system of *Pantoea stewartii* subsp. *stewartii*. Phytopathology 93:S32.

Quirino, B. F., **J. H. Ham**, B. B. Bonacci, and A. F. Bent. 2002. Functional analysis of RPS2 interaction with putative partners in disease resistance signal transduction. Phytopathology 92:S67.

Hammond, T. M., **J. H. Ham**, and N. P. Keller. 2002. *Aspergillus* and *Arabidopsis*, elucidating the role of the host in mycotoxin production. Phytopathology 92:S33.

Ham, J. H., G. Zabala, B. B. Bonacci, and A. F. Bent. 2000. Identification of RPS2-interacting proteins of *Arabidopsis thaliana* using a yeast two-hybrid system. Phytopathology 90:S332000.

Ham, J. H., J. K. Kim, S.V. Beer, and A. Collmer. 1997. Cloning and characterization of the *Erwinia chrysanthemi* EC16 *hecA* and *hecB* genes that encode predicted hemolysin and hemolysin activator/transporter proteins and confer hemolytic activity. Phytopathology 87: S38.

Ham, J. H., J. R. Alfano, and A. Collmer. 1995. Cloning of a novel *pel* gene from a *pelABCEX pelX Erwinia chrysanthemi* EC16 mutant using transposon Tn*5*tac1. Phytopathology 85: 1156.

Abstracts for Scientific Conferences Published in Program Books

Ham, J. H., B. Bonacci, G. Zabala, and A. Bent. 2001. Identification, characterization, and functional analysis of RPS2-interacting proteins of *Arabidopsis thaliana.* In *10th International Congress MPMI.*130.

Yu, I., **J. H. Ham**, G. Jurkowski, R. Smith, K. Fengler, S. Clough, A. Bent. 1999. *DND1* and *DND2: Arabidopsis* loci conferring defense-no-death mutant phenotypes. In *9th International Congress MPMI*, 21.13.

Ham, J. H., D. W. Bauer, and A. Collmer. 1998. Secretion and signal delivery to plant cells of *Pseudomonas syringae* Avr proteins by a cloned *Erwinia chrysanthemi* Hrp (type III) secretion system in *Escherichia coli* and further functional analysis of $Harpin_{Ech}$. In *7th International Congress of Plant Pathology,* 1.6.13.

Collmer, A., J. R. Alfano, M. Ballantyne, A. O. Charkowski, W. –L. Deng, D. E. Fouts, and **J. H. Ham.** 1998. New approaches to finding bacterial Avr proteins and accessing their role in promoting parasitism. In *7th International Congress of Plant Pathology,* 1.1.4S.

Fouts, D. E., J. R. Alfano, A. O. Charkowski, **J. H. Ham**, and A. Collmer. 1998. Assessing the ability of heterologously expressed *hrp* gene clusters to deliver Avr proteins and promote bacterial pathogenesis. In *7th International Congress of Plant Pathology,* 1.6.17.

Ham, J. H., D. W. Bauer, J. R. Alfano, and A. Collmer. 1996. Differential regulaton, secretion, and role in pathogenesis of the PelE, PelL, and HrpN proteins of *Erwinia chrysanthemi* EC16. In *8th International Congress MPMI*,G-24.

Kim, J. F., **J. H. Ham**, D. W. Bauer, A. Collmer, and S. V. Beer. 1996. *hrpN* and *hrcC* operons of *Erwinia chrysanthemi* EC16 are flanked by *plcA* and a homolog of hemolysin activator genes. In *8th International Congress MPMI*, G-29.

Collmer, A., J. R. Alfano, D. W. Bauer, G. M. Preston, A. O. Loniello, A. Conlin, **J. H. Ham**, H.-C. Huang, S. Gopalan, and S. Y. He. 1996. Secreted proteins, secretion pathways, and the plant pathogenicity of *Erwinia chrysanthemi* and *Pseudomonas syringae*. In *8th International Congress MPMI*, S-49.

Other publications

Ham, J. H. 2017. Development of Alternative Strategies to Manage Crop Diseases. *Louisiana Agriculture*. 60(3): 28-30.

Ham, J. H. 2015. Breeding for resistance to bacterial panicle blight. *Rice Research Station News*. 12 (1): p 3.

Ham, J. H. and D. E. Groth. 2011. Bacterial Panicle Blight: an Emerging Rice Disease. *Louisiana Agriculture*. 54: 16-17.

Invited Seminar Presentations at Universities and Research Institutes

University of Carthage & the National Agronomy Institute of Tunis in Tunisia (10/05/2016) (**Title:** Development of alternative strategies to manage bacterial plant diseases)

Federal Rural University of Pernambuco (UFRPE) (02/17/2016) (**Title:** Signaling and regulatory mechanisms of the rice pathogenic bacterium *Burkholderia glumae* for its pathogenesis, competition, and survival)

The Citrus Research and Education Center (11/30/2015) (**Title:** Signaling and regulatory components of the rice pathogenic bacterium, *Burkholderia glumae*)

Dept. Plant Pathology, University of Florida (12/01/2015). (**Title:** The intercellular communication and global regulatory systems of the rice pathogenic bacterium, *Burkholderia glumae,* involved in pathogenesis, competition, and survival)

Rice Tec Inc. Alvin, Texas (07/16/2015) (**Title:** Genetic and genomic studies of major rice diseases in the southern United States)

Dept. Plant Pathology, Federal University of Vicosa (Universidade Federal de Viçosa), Brazil (11/12/2013) (**Title:** The signaling and regulatory systems of the rice pathogenic bacterium, *Burkholderia glumae*).

Dept. Biological Sciences, Louisiana State University, Baton Rouge, Louisiana (9/24/2012) **(Title:** Genetic and genomic approaches to understand the regulatory mechanism of *Burkholderia glumae*: an emerging pathogenic bacterium causing bacterial panicle blight of rice)

University of Massachusetts, Amherst, Massachusetts (4/10/2012) (**Title:** Genetic and genomic approaches to gain new insights into the virulence mechanism of *Burkholderia glumae*: an emerging rice pathogenic bacterium causing bacterial panicle blight)

Texas A and M University, College Station, Texas (3/28/2012) (**Title:** Current research progress on bacterial panicle blight of rice: An emerging threat to rice production)

University of Arkansas, Fayetteville, Arkansas (1/31/2012) (**Title:** A current outlook on the study of bacterial panicle blight of rice and its causal agent, *Burkholderia glumae*)

College of Natural Sciences, Wonkwang University, Iksan, Korea (5/20/2009) (**Title:** Virulence Factors of the Two Bacterial Plant Pathogens, *Pantoea stewartii* and *Burkholderia glumae*)

National Institute of Agricultural Science and Technology, Suwon, Korea (5/19/2009) (**Title:** Biological activities of WtsE: An AvrE-family type III effector protein of *Pantoea stewartii* subsp. *stewartii*)

College of Natural Science, Gyeongsang National University, Jinju, Korea (5/18/2009) (**Title:** Biological activities of WtsE: An AvrE-family type III effector protein of *Pantoea stewartii* subsp. *stewartii*)

College of Life Sciences, Korea University, Seoul, Korea (10/29/2008) (**Title:** Novel functional motifs of bacterial type III effector: A new insight into the role of small G proteins in plant disease resistance)

College of Applied Sciences, Jeju National University, Jeju, Korea (10/28/2008) (**Title:** Novel functional motifs of bacterial type III effector: A new insight into the role of small G proteins in plant disease resistance)

College of Agriculture and Life Sciences, Seoul National University, Seoul, Korea (10/20/2008) **(Title:** Novel functional motifs of bacterial type III effector: A new insight into the role of small G proteins in plant disease resistance)

Louisiana State University Agricultural Center, Baton Rouge, Louisiana (6/4/2007) (**Title:** Virulence Activities of Two Bacterial Proteins, HopM1 and WtsE: Modulators of Host G-Protein Signaling)

University of California-Riverside, Riverside, California (2/19/2007) (**Title:** Virulence Activities of Two Bacterial Proteins, HopM1 and WtsE: Modulators of Host G-Protein Signaling)

University of California-Riverside, Riverside, California (3/20/2006) (**Title:** Biological Activities of the AvrE-Family Effector Proteins from Bacterial Plant Pathogens)

Washington State University, Pullman, Washington (7/13/2005) (**Title:** Biological Activities of the AvrE-Family Effector Proteins from Bacterial Plant Pathogens)

Invited Presentations at National and International Scientific Conferences and Workshops

2015 Annual Meeting of American Phytopathological Society, Pasadena, CA (08/04/2015) (**Title:** Identification of genomic variants of rice associated with disease resistance to sheath blight and bacterial panicle blight through NGS sequencing)

2014 Annual Meeting of the American Phytopathological Society (8/10/2014, Minneapolis, MN) (**Title:** An RNA-sequencing analysis implicates the presence of multiple cell-to-cell signaling pathways in the rice pathogenic bacterium, *Burkholderia glumae*)

2014 TM's 3rd World Molecular & Cell Biology Online Conference (2/28/2014) (**Title:** The intercellular signaling systems for the virulence of the rice pathogenic bacterium *Burkholderia glumae*)

2014 35th Meeting of Rice Technical Working Group (2/19/2014, New Orleans, LA) Panel: Plant Breeding and Genetics (**Title:** Development of new rice lines showing broad disease resistance to bacterial panicle blight and sheath blight)

2013 OMICS Group International Congress on Bacteriology and Infectious Diseases, Baltimore, MD (11/20 – 11/22/2013) (**Title:** Intercellular and intracellular signaling systems of the rice pathogenic bacterium *Burkholderia glumae*)

2013 Korean Society of Plant Pathology International Symposium, Sunchon, Korea (10/18/2013) (**Title:** Regulation of the virulence gene expression in the rice pathogenic bacterium, *Burkholderia glumae*)

2013 The 10th International Congress of Plant Pathology. Beijing, China (8/30/2013) (**Title:** A brief overview on bacterial panicle blight of rice and its causal agent *Burkholderia glumae*)

2012 Annual Meeting of American Phytopathological Society in Providence, Rhode Island (8/8/2012) (**Title:** The global regulatory network for the virulence of *Burkholderia glumae*, the major causal agent of bacterial panicle blight of rice)

2012 34th Meeting of Rice Technical Working Group (2/27/2012) Certified Crop Advisor Session (**Title:** Genetic mapping and breeding programs to understand and improve rice disease resistance to bacterial panicle blight)

2008 Korean Society of Plant Pathology International Symposium and Annual Meeting, Muju, Korea (10/24/2008) (**Title:** Novel functional motifs of bacterial type III effector: A new insight into the role of small G proteins in plant disease resistance)

Invited Presentations at Regional Conferences and Meetings

2015 3rd LA Conference on Computational Biology and Bioinformatics, Baton Rouge, Louisiana (04/18/2015) (**Title:** The intercellular signaling systems for the virulence of the rice pathogenic bacterium, *Burkholderia glumae*)

2014 Louisiana Rice Research Board Meeting, Rice Research Station (11/04/2014) (**Title:** Characterization and utilization of genetic traits for resistance to multiple diseases of rice)

2013 Louisiana Rice Research Board Meeting, Rice Research Station (10/29/2013) (**Title:** Characterization and utilization of genetic traits for resistance to multiple diseases of rice)

First GeneLab Workshop on NGS and Bioinformatics, LSU School of Veterinary Medicine, Baton Rouge, Louisiana (6/14/2013) (**Title:** Application of high-throughput sequencing to the study of the plant pathogenic bacterium, *Burkholderia glumae*: New opportunities and barriers)

2013 APS Southern Division Meeting, Baton Rouge, LA (2/9/2013) (**Title:** The Complex regulatory and signaling network for the virulence of the rice pathogenic bacterium *Burkholderia glumae* revealed by various molecular genetic and genomic studies)

2012 Louisiana Rice Research Board Meeting, Rice Research Station (10/30/2012) (**Title:** Characterization and utilization of genetic traits for resistance to multiple diseases of rice)

Louisiana State University Agricultural Center (Departmental Seminar: 4/4/2012) (**Title:** Research on bacterial panicle blight of rice at the Department of Plant Pathology and Crop Physiology: Its past, present and future)

2012 APS Southern Division Meeting, Birmingham, AL (2/6/2012) Symposium: Bacterial Plant Pathogens and Antagonists (**Title:** Genetic dissection of the regulatory network that controls virulence genes of *Burkholderia glumae*)

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

2011 Louisiana Rice Research Board Meeting, Rice Research Station (10/25/2011) (**Title:** Characterization and utilization of genetic traits for resistance to multiple diseases of rice)

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

2009 Louisiana Rice Research Board Meeting, Rice Research Station (11/10/2009) (**Title:** Characterization and utilization of genetic traits for resistance to multiple diseases of rice)

2009 LSU Agricultural Center BAIT Conference (10/22/2009) (**Title:** Development of the expression system for antimicrobial and insecticidal defensin-like proteins from rice)

Louisiana State University Agricultural Center (Departmental Seminar: 12/3/2008) (**Title:** A brief overview of current research topics in the Phytobacteriology laboratory)

2008 Louisiana Rice Research Board Meeting, Rice Research Station (11/6/2008) (**Title:** Characterization and utilization of genetic traits for resistance to multiple diseases of rice)

Organization/Moderation of Special Seminars, Meetings and Sessions

2018 International Congress of Plant Pathology (to be held in Boston, MA, from 07/29 – 08/03/2018): Invited to serve as the organizer for the session entitled 'Development of innovative management strategies for economically important bacterial diseases'

Special seminars by Drs. Marco Da Gama and Delson Larajeira (Federal Rural University of Pernambuco, Brazil) (04/20/2017) (**Title:** Current status of Anacardiaceae angular leaf spot in Brazil / Alternatives to chemical control in Northeast Brazil)

Special seminar by Dr. Dae-Jin Yun (01/26/2015) (**Title:** Biological function of genes involved in plant stress adaptation)

2015 Annual Meeting of the American Phytopathological Society (08/04/2015): Served as the co-organizer for the special session, *Life Beyond the Plant: Bacterial Wars* (Three invited speakers)

2014 Annual Meeting of the American Phytopathological Society (8/10/2014): Served as the moderator for the technical session, *Phytobacteriology* (Five invited speakers).

2014 TM's 3rd World Molecular & Cell Biology Online Conference (2/28/2014): Served as the session chair for the session 'General Biochemistry III' (Four invited speakers)

2012 APS-Southern Division Meeting (2/5/2012 – 2/6/2012, Birmingham, Alabama): Served as the organizer and moderator of the Symposium "Bacterial Plant Pathogens and Antagonists" (Five invited speakers)

2012 APS Meeting (8/4/2012 – 8/8/2012, Providence, Rhode Island): Serve as the co-organizer and moderator for the special session "New Insights into the Virulence Mechanism of Plant-Pathogenic Bacteria" (Six invited speakers).

Special seminar by Dr. Yong Chul Jeun (4/18/2011) (**Title:** Biological control using microorganisms on citrus diseases in Jeju Island (# of attendees: 22)

Meeting between Korean visiting scientists and LDAF and USDA officers (4/19/2011) (**Agenda:** Exchanging information about citrus diseases and citrus industries in Jeju Island and Louisiana) **(Attendees:** Yong Chul Jeun (Jeju University, Jeju, Korea), Jae Uk Hyun (Citrus Research Station of Rural Development Agency, Jeju, Korea), Philip J. Staudermann (USDA, Baton Rouge, LA), Tad N. Hardy (LDAF, Baton Rouge, LA), Ansel Rankins, Sr. (LDAF, Baton Rouge,

LA), Donald Ferrin (LSU AgCenter, Baton Rouge, LA), Jong Hyun Ham (LSU AgCenter, Baton Rouge, LA)

Memberships and services in Professional Organizations

President of the Bacteriology Committee of the American Phytopathological Society (2014 – 2015) (*elected*)
Vice president of the Bacteriology Committee of the American Phytopathological Society (2013 – 2014) (*elected*)
Member of APHIS Widely Prevalent Bacteria Committee (2015 -) (*invited*)
Member of American Phytopathological Society (1994 – present)
Member of APS Bacteriology Committee (2008 – present)
Member of American Phytopathological Society Southern Division (2008 – present)
Member of Korean Society of Plant Pathology (1990 – 1992, 2008 - present)

Awards

Tifton Team Research Award (2015)

Louisiana State University Tiger Athlete Foundation Teaching Award (2015)

Oomycetes Genomics Workshop Travel Award (2011)

LSU Inter-Institutional Biological and Recombinant DNA Safety Committee Recognition Award (2010)

LSU AgCenter Travel Grant for USDA CSREES Integrated Competitive Programs Grantsmanship Workshop (2008)

Korean Government Overseas Scholarship Award (1992)

Korea University Graduate School Scholarship Award: First place among graduate students major in science and engineering fields (1989)

Patent

Bauer, D. W., S. V. Beer, A. J. Bogdanove, A. Collmer, and **J. H. Ham**. 2003. Recombinant constructs and systems for secretion of proteins via type III secretion systems. U.S. Patent 6,596,509. Issued July 22, 2003.

Disclosure by the LSU AgCenter Intellectual Property Office

Ham, J. H. and B. K. Shrestha. 2011. Bacterial pathogen control in rice. (Ag-1117, Ag-1118)

Research Support/Grant Activities (Total Funded Amount: $1,231,520)

Pusan National University (Pusan, South Korea): A collaborative project with PNU funded by the Korean Government, entitled 'Comparative analyses of genome and in host transcriptome between plant-microbe and insect-microbe interactions to identify new virulence factors and its application. **Funded: $36,000** (04/2017 – 09/2018)

Louisiana Soybean and Feed Grains Research and Promotion Board Grant: Development of Foliar Treatment and Soil Amendment Methods to Promote Soybean Health (**PI: Jong Hyun Ham**, co-PI: Changyoon Jeong). **Funded: $30,000** (04/2017 – 03/2018)

Louisiana Rice Research Board Grant: Development of Seed Treatment Methods to Enhance Rice Health (**PI: Jong Hyun Ham**) **Funded: $29,625** (01/2017 – 12/2017)

Louisiana Rice Research Board Grant: Characterization and Utilization of Genetic Traits for Resistance to Multiple Diseases of Rice (**PI: Jong Hyun Ham.** Co-PI: Donald Groth) **Funded: $47,580** (01/2017 – 12/2018)

Testing efficacy of seed treatment materials on sheath blight control (Syngenta Inc.) (04/2016 – 09/2016) **$10,000**

Testing the efficacy of product on bacterial panicle blight (Gowan Inc.) (04/2016 – 09/2016) **$5,000**

Louisiana Soybean and Feed Grains Research and Promotion Board Grant: Development of Foliar Treatment and Soil Amendment Methods to Promote Soybean Health (**PI: Jong Hyun Ham**, co-PI: Changyoon Jeong). **Funded: $30,000** (4/2016 – 3/2017)

Louisiana Rice Research Board Grant: Development of Seed Treatment Methods to Enhance Rice Health (**PI: Jong Hyun Ham**) **Funded: $29,625** (1/ 2016 – 12/2016)

Louisiana Rice Research Board Grant: Characterization and Utilization of Genetic Traits for Resistance to Multiple Diseases of Rice (**PI: Jong Hyun Ham.** Co-PI: Donald Groth) **Funded: $47,580** (1/ 2016 – 12/2016)

Louisiana Rice Research Board Grant: Characterization and Utilization of Genetic Traits for Resistance to Multiple Diseases of Rice (**PI: Jong Hyun Ham.** Co-PI: Donald Groth) **Funded: $47,000** (1/ 2015 – 12/2015)

Testing the efficacy of product on sheath blight control (Agri-Neo Inc.) (04/2014 – 12/2014): **$13,220**

Testing the efficacy of product on bacterial panicle blight (Syngenta Inc.) (04/2014 – 12/2014): **$14,400**

Testing the efficacy of product on bacterial panicle blight (Gowan Inc.) (04/2014 – 12/2014): **$6,000**

Training a visiting scholar from Thailand (Rice Department, Bangkok, Thailand) (10/2014 – 09/2015): **$4,000**

LA Board of Regent/NSF Pilot Funding for New Initiatives (Pfund) Program. Characterization of rice defense system for disease resistance to bacterial panicle blight (**PI: Jong Hyun Ham**) **Requested**: **$10,000** (10/01/2014 – 09/30/2015) LEQSF-EPS(2015)-PFUND-405-AA **Funded**

Louisiana Rice Research Board Grant: Characterization and Utilization of Genetic Traits for Resistance to Multiple Diseases of Rice (**PI: Jong Hyun Ham.** Co-PI: Donald Groth) **Funded: $33,777** (1/ 2014 – 12/2014)

2013 USDA Borlaug Fellowship Program (PI: Susan Karimiha, co-PI: **Jong Hyun Ham**) **Funded amount: $29,009** (9/2013 – 12/2013) (Dr. Dorsaf Yahiaoui from Tunisia).
Agri-Neo (2013): Bactericide and fungicide efficacy tests. **Funded: $20,400** (04/2013 – 12/2013).

Marrone Bio Innovations (2013): Bactericide efficacy tests. **Funded: $10,800** (04/2013 – 12/2013).

Novozyme (2013): Bactericide efficacy tests. **Funded: $3,600** (04/2013 – 12/2013).

Gowan (2013): Bactericide efficacy tests. **$5,000 Funded** (04/2013 – 12/2013).

Syngenta: Utilization of rice endophytic bacterial agents to control bacterial panicle blight and sheath blight of rice (**PI: Jong Hyun Ham**) **Requested: $61,520** (3/2013 – 2/2015, ***pending***)

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: $37,530** (1/ 2013 – 12/2013)

USDA AFRI NIFA Graduate Fellowship: Characterization of a novel negative regulator of toxoflavin production in *Burkholderia glumae* that causes bacterial panicle blight of rice (PI: Rebecca Melanson, PI's mentor: **Jong Hyun Ham**) **Funded: $70,219** (8/2012 – 7/2014)(*also mentioned on page 16*)

Agri-Neo, Inc. (Quebec, Canada): AN-77V2 Greenhouse Seed Treatment Efficacy Test for Rice in Louisiana / AN-77V2 Efficacy and Yield Test for Rice in Louisiana (**PI: Jong Hyun Ham**). **Funded: $10,875** (4/2012 – 9/2012)

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/ 2012 – 12/2012)

Economic Development Assistantship: Genetic Mapping and Characterization of Broad-Spectrum Disease Resistance of Rice (**PI: Jong Hyun Ham**). **Funded: $100,000** (8/2010 – 8/2014)

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)

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: $30,000** (1/2010 – 12/2010)

LA Board of Regent/NSF Pilot Funding for New Initiatives (Pfund) Program (submitted: 10/8/2009): Genomewide screening and identification of *Burkholderia glumae* genes controlled by quorum sensing signals (**PI: Jong Hyun Ham**). **Funded: $9,960** (1/2010 – 2/2011) NSF(2010)-PFUND-194

USDA CSREES AFRI Breeding and Education Program: Marker-assisted breeding to enhance disease resistance in corn, rice, and sugarcane (PI: Prasanta Subudhi. Co-PIs: Collins Kimbeng, Jeff Hoy, **Jong Hyun Ham**, Naranjan Baikash). **Funded: $499,000 (Allocated: $118,590)** (6/2010 – 2/2015)

Louisiana Rice Research Board Grant: Characterization and Utilization of Genetic Traits for Resistance to Multiple Diseases of Rice (**PI: Jong Hyun Ham.** Co-PIs: Milton C. Rush, Donald Groth, Xueyan Sha, Prasanta Subudhi, Herry Utomo). **Funded: $21,000** (1/2009 – 12/2009)

Biotechnology AgCenter Interdiscipilinary Team (BAIT) Grant Program: Development of the expression system for antimicrobial and insecticidal defensin-like peptides from rice (**PI: Jong Hyun Ham.** Co-PIs: Milton C. Rush, Mike Stout, Alma Roy, Rangaraj Nandakumar). **Funded: $20,150 (**2/2008 – 2/2009)

Louisiana Board of Regents Research and Development Program (Research Competitiveness Subprogram): Functional genomic analysis of *Burkholderia glumae* pathogenic determinants underlying rice bacterial panicle blight: a globally emerging plant disease (**PI: Jong Hyun Ham**. Co-PIs: Milton C. Rush, Tin-Wein Yu, Rangaraj Nandakumar). **Funded: $107,200** (7/2008 – 6/2012) LEQSF(2008-11)-RD-A-02.

Economic Development Assistantship Program: Molecular genetic analysis of *Burkholderia glumae*: the causal agent of bacterial panicle blight in rice (**PI: Jong Hyun Ham**). **Funded: $100,000** (8/2008 – 8/2012).

Flagship Assistantship Program (submitted: 10/2007 along with Drs, Chen and Aime in the name of the Departmental Chair). **Funded: $ 60,000** (8/2008 – 8/2012)

MENTORING AND SUPERVISING

1. Graduate Students

Major advisor of:

Bishnu K. Shrestha (6/2008 – 12/2014), Ph. D. program (received M. S. degree in 12/2011 and Ph.D. degree in 12/2014)

Hari S. Karki (8/2008 – 12/2013), Ph. D. program (received M.S. program in 12/2010 and Ph. D. degree in 12/2013)

Rebecca A. Melanson (8/2008 – 12/2014), Ph. D. program (received M. S. degree in 12/2011 and Ph.D. degree in 12/2014)

Ruoxi Chen (8/2008 – 12/2013), Ph. D. program (received M. S. degree in 12/2011 and Ph. D. degree in 12/2013)

Felix Francis (8/2010 – 5/2012), M. S. program (received M. S. degree in 6/2012)

Maria Caldera (8/2011 – 5/2014), M. S. program (co-advising with Dr. Raghuwinder Singh)

Surenda Osti (6/2012 – 12/2014), M. S. program (received M.S. degree in 12/2014)

Jingyu Peng (8/2013 – present), M. S. program

Cecilia Freitas (8/2014 – 5/2015), Ph. D. program (*transferred to Ohio State University*)

Tiago Lelis (8/2014 – present), Ph. D. program

Usha Bhatta (1/2016 – 12/2016) Ph. D. program (*transferred to University of Georgia*)

Rosalie Calderon (8/2016 – present) Ph. D. program

Ateet Marhajan (8/2016 – present) M. S. program

Isaack Kikway (01/2017 – 06/2017) Ph. D. program (*transferred to North Carolina State University*)

Jhonson Leonard (08/2017 – present) M.S. program

Member of graduate committees for:

Jeff West (Dept. Biological Science, Ph.D. student) 2008 - 2009

Freddy Garces (Dept. PPCP, Ph.D. student) 2007 – 2011

Dongli Wang (Dept. Biological Sciences, Ph.D. student) 2010 – 2011

Washington da Silva (Dept. PPCP, MS student) 2011 – 2013

James Young (Dept. PPCP, MS student) 2011

Andres Gutierrez Viveros (Dept. PPCP, M.S. student) 2012 – 2014

Surasak Khankhum (Dept. PPCP, Ph.D. student) 2012 – present

Ben Meritt (School of Plant Environment and Soil Sciences, Ph.D. student) 2014 - present

Dominique Clark A. Galam (School of Plant Environment and Soil Sciences, Ph.D. student) 2015 – present

Adam Bigott (Dept. PPCP, MS student) 2015 – 2017

Blake Wilson (Entomology, PhD) 2016 (defense date: 3/30/2016)

Robert J. DiMario (Biological Sciences, PhD) 2016 (defense date: 3/2016)

Isaak Kikway (PPCP, MS) co-advisor (5/2016 – 12/2016)

Pradip Panta (Dept. Biological Sciences, Ph.D.) 2016 – present

Addison Topher (SPESS, Ph.D.) 2017- present

2. Professionals

Inderjit Kauer Barphagha (M. S.), Research Associate (3/2008 – present)

Jung Nam Lee, Postdoctoral Fellow (1/2009 – 6/2009, currently Research Professor in Dankook University in Korea)

Tiyakhon Chatnaparat, Intern Research Associate (From Dept. Plant Pathology, Kasetsart University, Bangkok, Thailand)(5/2008 – 8/2008)

Pavinee Suttiviriya, Intern Research Associate (Dept. Genetics, Kasetsart University, Bangkok, Thailand)(5/2009 – 8/2009)

Eng-Orn Srikeaw, Intern Research Associate (Dept. Genetics, Kasetsart University, Bangkok, Thailand)(5/2010 – 8/2010)

Rachadapron Keawwan, Intern Research Associate (Dept. Plant Pathology, Kasetsart University, Bangkok, Thailand)(5/2011 – 8/2011)

Daniel Forestieri (Agricultural Science and Production Program, Zamorano University, Zamorano, Honduras)(1/2013 – 4/2013)

Dr. Dorsaf Yahiaoui (Technical Center of Citriculture, Tunisia)(9/2013 – 12/2013) (Borlaug Fellowship Program 2013 – North Africa)

Katherine N. Rubio (Zamorano University, Honduras) (Visiting period: 05/2014 – 07/2014)

Nootjarin Jungkhun (Chiangrai Rice Research Center, Chiangrai, Thailand) (Visiting period: 10/2014 – 09/2015)

Chaithath Boonjan (Chulalongkorn University, Bangkok, Thailand) (Visiting period: 08/2015 – 10/2015)

Elder Villanueva (Universidad Nacional de Agricultura, Olancho, Honduras) (10/2015 – 12/2016)

Pablo Vargas (Zamorano University, Honduras) (Visiting period: 5/2016 – 12/2016)

Min-kyu Kang (Kangwon National University, South Korea) (05/2017 – 08/2017)

Soheila Zarbafi (University of Guilan, Iran) (07/2017 – 12/2017)

3. Undergraduate Students

Samjhauta Wagle, Major in Biology (01/2010 – 08/2011)

Daniel Whitman, Pre-Med and Major in Biology (01/2009 – 08/2009)

4. *High/Middle School Students*

Brad Fraizer (John Curtis Christian School, River Ridge, LA) (07/2012)

Carlie Whitty (Kenilworth Science and Technology Charter School) (09/2014 – 12/2014)

Theses/Dissertations Directed

Jingyu Peng. 2015. Genetic and transcriptomic analyses of the rice pathogenic bacterium, *Burkholderia glumae*, reveal the important roles of the regulatory gene, *tepR*, for bacterial survival in environmental stresses. M.S. thesis

Bishnu Shrestha. 2014. Genetics and genomics studies of rice disease resistance and development of alternative disease management methods for bacterial panicle blight and sheath blight. Ph.D. dissertation

Rebecca Melanson. 2014. Characterization of a novel negative regulator of toxoflavin production, *ntpR*, in the plant pathogen *Burkholderia glumae* that causes bacterial panicle blight of rice. Ph.D. dissertation

Surendra Osti. 2014. Characterization of a sigma 54-dependent response regulator, *tepR*, in the rice-pathogenic bacterium *Burkholderia glumae* and development of biocontrol strategies for bacterial panicle blight of rice. M.S. thesis

Chen, Ruoxi. 2013. Integrated functional analysis of quorum-sensing in the rice pathogenic bacterium *Burkholderia glumae*. Ph. D. dissertation

Karki, Hari S. 2013. A genetic study on the virulence mechanism of *Burkholderia glumae* and rice resistance to bacterial panicle blight of rice. Ph. D. dissertation

Francis, Felix. 2012. Comparative genomics, transcriptome analysis, and characterization of selected regulatory genes of *Burkholderia glumae*. M. S. Thesis

Melanson, R. A. 2011. A systematic study of *Xylella fastidiosa* strains isolated from pecan, grapevine, oleander, and sycamore in Louisiana. M. S. Thesis

Chen, Ruoxi. 2011. A molecular genetic study on the TofI/TofR quorum-sensing system of *Burkholderia glumae*: The major pathogen that causes bacterial panicle blight of rice. M. S. thesis

Shrestha, Bishnu K. 2011. Characterization and utilization of rice defense system associated with partial resistance to bacterial panicle blight: An emerging rice disease problem in the southern United States. M. S. Thesis

Karki, Hari S. 2010. Physiological, biochemical and molecular characteristics associated with virulence of *Burkholderia glumae*: The major causative agent of bacterial panicle blight of rice. M. S. Thesis

TEACHING ACTIVITIES

Major Course (PLHL 7011 Phytobacteriology, 4 credit hours)

2009 Spring (8 students enrolled): overall SPOT score 4.72 (CoA average: 4.03)

2011 Spring (13 students enrolled): overall SPOT score 4.70 (CoA average: 4.08)

2013 Spring (11 students enrolled): overall SPOT score 4.53 (CoA average: 4.07)

2015 Spring (12 students enrolled): overall SPOT score 4.36 (CoA average: 4.20)

2017 Spring (8 students enrolled): overall SPOT score 4.86 (CoA average: 4.20)

Other Courses Taught/Organized

PLHL7080 Host-parasite interactions: Guest lecture 3 hrs, 2008 Spring

PLHL4000 Introductory Plant Pathology: Guest lecture (3 lecture hrs), 2008 Fall

PLHL4001 Plant Disease Management: Guest lecture (3 lecture & 3 lab hrs), 2009 Spring

PLHL4001 Plant Disease Management: Guest lecture (3 lecture hrs), 2010 Spring

PLHL4000 Introductory Plant Pathology: Guest lecture (3 lecture & 3 lab hrs), 2010 Fall

PLHL4001 Plant Disease Management: Guest lecture (3 lecture hrs), 2011 Spring

PLHL4001 Plant Disease Management: Guest lecture (3 lecture hrs), 2012 Spring

PLHL4000 Introductory Plant Pathology: Guest lecture (3 lecture & 3 lab hrs), 2012 Fall

PLHL7052 Plant Pathology and Crop Physiology Seminar Series, 2012 Fall

PLHL7052 Plant Pathology and Crop Physiology Seminar Series, 2013 Spring

PLHL4000 Introductory Plant Pathology: Co-lecturer (8 lecture & 6 lab hrs). 2016 Fall

Service Activities for Teaching

Provided an informal lecture to the four graduate students and one research associate in my laboratory on basic molecular biology and DNA manipulation techniques (8/2008 – 1/2009, 1 – 2 hr/week)(Text book used: Gene Cloning and Manipulation 2nd Ed.(2007), by C. Howe, Cambridge Univ. Press).

Established a bi-weekly journal club for the graduate students (currently 5) and one research associate in my laboratory (8/2008 – 8/2009).

Publication for Teaching

Melanson, R. A. and **J. H. Ham**. 2017. Virulence factors produced by plant pathogenic bacteria (Chapter 19, p 305 - 318). In *Plant Pathology: Concepts and Laboratory Exercises, Third Edition*. Robert N. Trigiano and Bonnie Ownley, Eds. Taylor and Francis Group, LLC.

Meetings and Conferences on Teaching

2017 LSU Faculty Colloquium and Workshop: 'Small Teaching: From Minor Changes to Big Learning' (01/05/2017)

2016 LSU Faculty Colloquium and Workshop: 'Building a Better Lecture' (01/07/2016)

LSU College of Agriculture, Dean's Teaching Conference (1/2009, 1/2011, 1/2013, 1/2014)

Teaching Award

Tiger Athlete's Foundation Teaching Award (05/05/2015)

A. COLLABORATIVE ACTIVITIES

Comparative genomics and molecular genetics of *B. glumae* : Dr. Young-su Seo (Pusan National University, South Korea)

Rice genetics and disease management study: Dr. Adam Famoso and Dr. Donald Groth (Rice Research Station, LSU AgCenter)

Rice breeding for disease resistance: Dr. Steve Linscombe and Dr. James Oard (Rice Research Station, LSU AgCenter)

Soil microbial community study: Dr. Changyoon Jeong (Red River Research Station, LSU AgCenter)

Genomics and bioinformatics studies of rice disease resistance: Maheshi Dassanayake (Biological Sciences, LSU), Dong-Ha Oh (Biological Sciences, LSU)

Characterization and Utilization of Genetic Traits for Resistance to Multiple Diseases of Rice (for the LA Rice Research Board Grant): Milton C. Rush (PPCP, emeritus professor), Donald Groth (Rice Research Station), Xueyan Sha (Rice Research Station), Prasanta Subudhi (SPESS), Herry Utomo (Rice Research Station).

Marker-assisted breeding to enhance disease resistance in corn, rice, and sugarcane (for the USDA AFRI grant): Prasanta Subudhi (SPESS), Collins Kimbeng (Sugar Research Station), Jeff Hoy (PPCP), Niranjan Baisakh (SPESS).

Development of the expression system for antimicrobial and insecticidal defensin-like peptides from rice (for the BAIT grant): Milton C. Rush (PPCP, emeritus), Mike Stout (Entomology), Alma Roy (Veterinary Medicine), Huangen Ding (Biological Sciences).

Functional genomic analysis of *Burkholderia glumae* pathogenic determinants underlying rice bacterial panicle blight (for the LA Board of Regents grant): Milton C. Rush (PPCP, emeritus), Tin-Wein Yu (Biological Sciences).

Comparative genomics and structural biology of *Burkholderia glumae*: Joohyun Kim (Center for Computation and Technology), Yong-Hwan Lee (Biological Sciences).

Detection of *Spiroplasma kunkelii* and characterization of microbial community associated with maize rhizosphere in corn fields: Frank Bastian (Veterinary Science)

Development of new detection systems for *Burkholderia glumae* and *B. gladioli* using the loop mediated isothermal amplification (LAMP) technique: Dennis Gross (Texas A & M University).

Functional and structural analyses of chemicals associated with virulence and antagonistic ability of bacteria (for future proposal development): Beom Seok Kim (Korea University).

Determination of the relationship between the amount of ascorbic acid in rice panicles and the disease resistance to bacterial panicle blight: Argelia Lorence (Arkansas State University).

B. PROFESSIONAL AND COMMUNITY SERVICE ACTIVITIES

University Service

Member of the ad hoc committee for the future make-up of the PPCP department (6/2015 - present)

Chair of the PPCP Department Safety Committee (9/2013 - present)

Committee member for the LSU-COA Distinguished Dissertation Award (1/2013)

LSU A&M Faculty Senate (8/2012 – present)

Member of Inter-Institutional Biological and Recombinant DNA Safety Committee (8/2009 - present)

Member of Science Fair Review Committee (1/2009 – present)

Member of Courses and Curricula Committee (Dept. Plant Pathology and Crop Physiology)(1/2008 – present)

Member of Graduate Student Recruiting Committee (Dept. Plant Pathology and Crop Physiology)(1/2008 – present)

Member of the LSU AgCenter ACE group for rice (1/2008 – present)

Member of the Plant Pathology Laboratory Committee (12/2011 – present)

Member of the Departmental CSREES Project Review Committee (for the 'pathogen' and 'rice' groups)(2008)

Associate Member of the Graduate Faculty (11/2007 - present): Graduate Committee chair for 5 graduate students and member for 3 graduate students (*see* <u>*Research Activities*</u> *V. Mentoring and Supervising*)

Dean's representative for Blake Wilson's General exam for the Ph.D. degree in Dept. Entomology (6/10/2015)

Dean's representative for Jamie S. Hayes's General exam for the Ph.D. degree in Dept. Chemistry (4/2/2012)

Dean's representative for Timothy M. Jones' General exam for the Ph.D. degree in Dept. Biological Sciences (4/30/2012)

Dean's representative for Timothy M. Jones' General (4/22/2013) and final (12/08/2014) exams for the Ph.D. degree in Dept. Biological Sciences

Dean's representative for Robert Dimario's General exam for the Ph.D. degree in Dept. Biological Sciences (4/29/2013)

<u>Other Professional Services</u>

- *Ad hoc* reviewer for manuscripts submitted to:
European Journal of Plant Pathology, *Journal of Applied Microbiology*, *Plant Health Progress*, *Plant Disease*, *Molecular Plant-Microbe Interactions*, *Canadian Journal of Microbiology*, *PLoS ONE*, *Crop Protection*, *Crop Science*, *Life Sciences*, *Applied and Environmental Microbiology*, *Medical Microbiology*, *Journal of Phytopathology*, *Biological Control*, *Physiological and Molecular Plant Pathology*, *Phytopathology*, *the Plant Pathology Journal*, *Journal of Agricultural Science*, *Canadian Journal of Plant Pathology*, *Journal of Basic Microbiology*, *Molecular Plant Pathology*, *Microbiology*, *Theoretical and Applied Genetics*

- *Ad hoc* reviewer for proposals submitted to: UC Pierce's disease research grants program, HATCH, and NSF

- Panelist of the review panel for the USDA NIFA Specialty Crop Research Initiatives (05/08/2017 - 05/12/2017, Washington, D.C.).

- Panelist of the review panel for the USDA NIFA awards for the Food Safety Program (09/29/2014 - 10/03/2014, Washington, D.C.).

- Panelist of the review panel for the USDA NIFA awards for the Understanding Plant Associated Microorganisms Program (11/14/2011-11/17/2011, Washington, D.C.).

- RDA Honorary Scientist and Scientific Advisor on Agricultural Green Technology by the Rural Development Agency of Korea (2008 - present).