Fangneng Huang's Major Accomplishments (mainly at LSU A&M and AgCenter)

TEACHING:

- Developed and taught two new courses at LSU: Entom 7006, Advanced Insect Pest Management (3 credits) and Entom 7008 (Special topics), U.S. Agriculture and Major Arthropod Pests (3 credits). Teaching evaluations by students (mean = 4.27/5) at LSU were higher than the average (4.06) of the College of Agriculture.
- During 2004-2008, taught two other special topics and one research problem course.
- Taught several entomological courses at Nanjing Agricultural University in Nanjing, China (1986-1993): Agricultural Entomology (60 hrs/year), Integrated Pest Management (60 hr/year), Plant Protection (30 hr/year); Sampling Techniques for Insect Populations (offered two times a year, 40 hr/year); Ornamental Entomology (for high school student, 50 hr/year).
- Co-edited a national textbook in China: Integrated Pest Management.
- At LSU, chaired for 3 Ph.D. students and served on graduate committees for 3 other students including one as the Dean's representative. One student (Xiaoyi Wu) passed his Ph.D. general examination and scheduled to graduate fall, 2008. Data generated from Wu's PhD project have been presented in several local, regional, and national meetings. Wu has received two awards for his outstanding presentations from ESA and the Louisiana Agricultural Scientists Association. One of his PhD studies was published in JEE. My other two relatively new students also presented their Ph.D. research at two regional and local meetings and one of these presentations was selected as one of the top three out of 19 PhD presentations at the 2008 ESA-SEB meeting.
- Supervised > 10 other high school, undergraduate, and graduate students, visiting professors, and research associates at LSU AgCenter.

RESEARCH:

- At Kansas State University, established the first Bt resistant European corn borer strain for studying Bt resistance evolution and management, and evaluated several novel tools for management of field crop and stored-product insect pests.
- Since 2004 after joining LSU AgCenter, 1) re-established the Corn and Small Grain Insect Research Laboratory; 2) identified and established a Bt-corn resistant sugarcane borer strain, the first and only highly Bt-resistant corn borer strain that survived and completed larval development on commercial YieldGard Bt corn plants; 3) developed a novel cost-effective F_2/F_1 screening method that can identify rare resistance alleles in corn borer populations; 4) developed and implemented a coordinated program for monitoring Bt resistance in field populations of sugarcane borer and southwestern corn borer for the mid-southern region of the United States including LA, TX, and MS (may add KS and OK in this year); 5) identified a new state record lepidopteran insect pest of corn and grain sorghum, *Moodna bisinuella*; 6) first documented sugarcane borer overwintering in north LA.
- Since 2001, received a total of > $1 million external research funding from various sources including nearly $500,000 after joining LSU AgCenter. Received three federal (NSF, USDA-CSREE, USDA-ARS) and one state (Louisiana Board of Regents) grants with a total of $292,850 after joining LSU AgCenter.

- Published >100 publications (50 refereed papers, 50 abstracts and proceedings, 3 book chapters, 2 Louisiana Agriculture articles, and 4 extension publications). Among these, 47 publications (22 refereed papers, 19 abstracts and proceedings, 1 book chapter, 2 Louisiana Agriculture articles, and 3 extension publications) were published after joining LSU AgCenter and with LSU AgCenter as the affiliation. Most of these referred papers were published in top national/international journals such as Science, Insect Biochemistry and Molecular Biology, Bulletin of Entomological Research, Entomologia Experimentalis et Applicata, Journal of Economic Entomology, Agricultural and Forest Entomology, Pest Management Science, Biochemical and Biophysical Research Communications, Journal of Stored Products Research, Pesticide Biochemistry and Physiology, Crop Science, Journal of Applied Entomology, Insect Science, etc. Since 1997, these publications have cited > 625 times.
- From 1995 to 2008, presented 98 presentations (23 invited, 33 other oral, and 42 displays) at local, regional, national, and international meetings. Among these, 49 presentations (9 invited, 23 other oral, and 17 displays) were associated with the research work at LSU AgCenter.
- After coming to LSU AgCenter, established several collaborative research projects with many other scientists including >10 from LSU AgCenter, 1 from University of Minnesota, 4 from USDA-ARS, 3 from Texas A&M University, 2 from Mississippi State University, 1 from the Max Planck Institute for Chemical Ecology in Germany, 1 from University of València in Spain, and 1 from Instituto de Biotecnologia UNAM in Mexico.

SERVICE:

- Louisiana representative in the technical committee of the USDA NC-205 Multi-state Research Project, Ecology and Management of European Corn Borer and Other Stalk-Boring Lepidoptera (2005-2010).
- Vice President (2005-2006) and Executive Board member of the Overseas Chinese Entomologists Association (2005- present).
- Proposal reviewer for China National Foundation for Natural Sciences (2007-present)
- A judge for student presentation competitions at the annual meetings of ESA and ESA-SEB.
- Organized or co-organized symposia at the annual meetings of ESA (2005 and 2008 [proposed])
- Reviewed many papers (ca.10/year) or book chapters for at least 15 scientific journals and books.
- LSU AgCenter Wheat Variety Release Committee (2004, 2005, 2006).
- Serviced (chair or a member) on four department committees

EXTENSION:

- Six state-extension publications (including multiply-updated) at LSU AgCenter and one regional extension publication at KSU
- Many presentations/demonstrations to growers, consultants, extension and industry personnel, and participated several field days since joining LSU AgCenter.

Overall program impact (Fangneng Huang)

Field corn and small grains represent substantial acreage and contribute significant crop value to agriculture in Louisiana. Compared to other regions of the United States, the weather conditions and complex agricultural ecosystems in Louisiana create a unique environment that results in development of significant pest infestations of corn and small grain crops. Two technological revolutions in management of field crop insect pests are responsible for major agro-ecological changes in modern agricultural systems in the United States, transgenic plants and seed treatments. My research efforts at the LSU AgCenter have concentrated on the use of these two technologies in managing corn and small grain insect pests. After joining the LSU AgCenter, I, along with several collaborators, have built a strong research program that has received national and international recognition in management of small grain pests and Bt resistance. Specifically, my research program combines four main aspects:

1) Risk assessment, monitoring, and management of corn borer resistance to transgenic Bt corn to ensure the long-term success of Bt corn technology as an effective IPM tool;
2) Assessing new Bt toxins and transgenic corn lines with novel Bt genes for managing Louisiana lepidopteran corn pests;
3) Evaluating novel seed treatment technologies for managing soil and seedling insect pests of corn and grain sorghum;
4) Defining field biology and population ecology of stalk borers and *Moodna bisinuella,* a new state record and a potential pest of corn and grain sorghum in Louisiana.

Transgenic Bt corn has become the primary tool for managing lepidopteran corn pests in Louisiana. Conservation of Bt susceptibility in insects has become one of the most active research areas in modern agriculture. One of the key factors for a successful resistance management plan is to have a cost-effective monitoring system that can provide information on early shifts in Bt resistance allele frequencies. Therefore, proactive measures for managing resistance can be implemented before a field control failure occurs. Developing such a monitoring program has proven to be challenging.

We have developed a cost-effective F_2/F_1 screening method that can identify rare Bt resistance alleles in field corn borer populations. Compared to the procedures established previously, our F_2/F_1 screening method considerably reduced the involved cost and labor. A landmark discovery of my research was the detection of a major Bt resistance allele in a Louisiana field population of sugarcane borer. This was the first major resistance allele to commercial Bt corn hybrids discovered in any corn stalk borer species worldwide. Based on our results, the NC-205 committee, a multi-state research group working on corn stalk borer management, passed a special motion regarding Bt resistance in sugarcane borer in 2006. A letter regarding to this motion was sent to the US EPA to inform the EPA of a potential issue. Because of our timely efforts at LSU AgCenter, the sugarcane borer has been officially listed as a target insect pest of transgenic Bt corn commercialized for managing corn stalk borers in the United States. With our F_2/F_1 screening method, a coordinated monitoring program has been developed and

implemented in Louisiana since 2004. This monitoring program has and will continue to help insure the continued success of Bt corn technology in the state. In addition, data generated from this research has become an integral part of an advanced graduate course, which was recently offered in the Department of Entomology.

Following our procedures, a similar Bt resistance monitoring program is being developed in Texas and Mississippi. The F_2/F_1 screening method has also been adopted or modified by other scientists in the United States and other countries for detecting Bt resistance in other insect species. The resistant sugarcane borer strain we established has been used for research in several other laboratories in the United States, Germany, and Spain for exploring mechanisms of Bt resistance in corn stalk borers. Two cooperative research projects led by the LSU AgCenter for studying the mechanisms and management of Bt resistance in corn borer have been established within several institutions in the United States, Spain, German, and Mexico.

In cooperation with several industries and universities, I have evaluated 10 novel Bt toxins against our Cry1Ab resistant sugarcane borer and identified 3 toxins that did not show a cross-resistance with the Cry1Ab resistant sugarcane borer. I have also evaluated several corn lines containing novel Bt genes for controlling lepidopteran corn pests in Louisiana. These studies provide industry with useful information in developing new generations of Bt corn varieties that may overcome Cry1Ab resistance.

The widespread adoption of reduced tillage practices has increased the probability and severity of soil insect problems of field corn and grain sorghum in Louisiana. Seed treatments have become a common strategy for managing soil and seedling pests during the early season because this method offers several advantages over other types of application. Since 2004, I, along with collaborators, have evaluated several novel seed treatment products for managing soil and seedling insects of corn and grain sorghum. This research provides important information for the chemical industry in developing new products to manage corn and grain sorghum insect pests.

We have documented the population structure, distribution, and overwintering of stalk borers on corn and grain sorghum in Louisiana. Our data indicates that the sugarcane borer has been the dominant stalk borer species on corn and grain sorghum across the states. During 2005 and 2006, I documented the overwintering of sugarcane borer in north LA. The finding of overwintering corn borers in north LA provides scientific evidence to support the fall control strategy recommended by the LA Cooperative Extension Service for management of stalk borers. Information generated from this study has been incorporated in updating management recommendations for corn borers in Louisiana. In 2004 and 2005, I, along with collaborators, identified a new lepidopteran pest, *Moodna bisinuella,* in corn and grain sorghum. This was the first documentation of this pest in Louisiana. A three-year field survey indicates that this pest represents a potential threat to these two crops in the state. A research project for study on the biology of this insect has been initiated. Information generated from this study should provide essential information for developing management strategies.

As of March 28, 2008, my publications have been cited at least 625 times in scientific papers, articles, or newsletters. The accomplishments I made since I joined the LSU should provide a solid foundation for the continued success of my research at the LSU AgCenter.

CURRICULUM VITA (Abbreviated) – Fangneng Huang

ACADEMIC ASSOCIATION: Department of Entomology, LSU Agricultural Center, Baton Rouge, LA 70803.

RELEVANT EMPLOYMENT AND PROFESSIONAL EXPERIENCE

2004 – Present: Department of Entomology, LSU AgCenter, Assistant Professor.
2003 – 2004: Department of Grain Science and Industry, Kansas State University, Senior Scientist.
1998 – 2003: Department of Entomology, Grain Science and Industry, Kansas State University, Research Associate.
1988 – 1993: Department of Plant Protection, Nanjing Agricultural University, China, Lecturer (Faculty Member).
1986 – 1988: Department of Plant Protection, Nanjing Agricultural University, China, Instructor (Faculty Member).

PROFESSIONAL MEMBERSHIPS AND HONOR SOCIETIES

Entomological Society of America, Southeastern Entomological Society, Louisiana Agricultural Scientists Association, Overseas Chinese Entomologists Association

Education:	
B.S. – Plant Protection	Southwest Agricultural University, Chongqing, China, 1983
M.S. – Entomology	Southwest Agricultural University, Chongqing, China, 1986
Ph.D. – Entomology	Kansas State University, 1998
Academic Rank / Date	Assistant Professor / March 1, 2004-present
Publications:	
Text Book	1 (IPM)
Book Chapter (LSU)	3(1)
Refereed (LSU/other institutions)	51 (23/28)
Louisiana Agriculture	2
Proceedings/Abstracts (LSU/KSU)	52(19/33)
Cooperative Extension Service	5 (+multi-yr. updates)
Publications Cited :	
Total Times Cited (1997-present)	>660 (updated 10/14/08, Google.com)
Times (SCI Papers) Cited by SCI (1997-present)	288 (updated 10/14/08, SCI)
Presentations (Since 1995):	
Invited (LSU/KSU)	23(9/14)
Other Oral Presentations (LSU/KSU)	33(23/10)
Poster Display Contributions (LSU/KSU)	42(17/25)
External Funding:	**$1,074,321**
LSU (PI/co-PI)	$489,375 ($427,600/$61,775)
KSU as a Co-PI	$584,946
Teaching at LSU	
Entomology 7006	Advanced Insect Pest Management, 2006. 2008
Entomology 7008	U.S. Agriculture and Major Arthropod Pests. 2006, 2007, 2008
Committees:	
Graduate Student Committees - M.S. / PhD.	1/4
Departmental and AgCenter/Professional	7/3

MAJOR RESEARCH INTERESTS

1) Biology, ecology, and management of corn, small grains, and stored-product insects
2) Efficacy and risk assessment of transgenic crops for insect pest management
3) Mechanism, monitoring and management of insecticide and Bt resistance

Appointment: 80% Research, 20% Teaching
Requested Action: Promotion to the Rank of Associate Professor with Tenure

FANGNENG HUANG

CURRICULUM VITAE

PRESENT POSITION

Assistant Professor, Department of Entomology, Louisiana Agricultural Experiment Station, Louisiana State University Agricultural Center

ADDRESS: Department of Entomology
404 Life Sciences Building
Louisiana State University
Baton Rouge LA 70803
(225)578-0111
EMAIL: fhuang@agcenter.lsu.edu

HISTORY OF EMPLOYMENT

Assistant Professor - Corn and Small Grain Research Entomologist, March 2004 – present. Department of Entomology, Louisiana Agricultural Experiment Station, Louisiana State University Agricultural Center, Baton Rouge, Louisiana.

Senior Scientist, June 2003 – February 2004. Department of Grain Science and Industry, Kansas State University, Manhattan, Kansas.

Research Associate, March 1998 – June 2003. Departments of Entomology, Grain Science and Industry, Kansas State University, Manhattan, Kansas.

Graduate Research Assistant, August 1993 – February 1998. Department of Entomology, Kansas State University, Manhattan, Kansas.

Lecturer (Faculty Member), August 1988 – August 1993. Department of Plant Protection, Nanjing Agricultural University, Nanjing, China.

Instructor (Faculty Member). July 1986 – August 1988. Department of Plant Protection, Nanjing Agricultural University, Nanjing, China.

EDUCATION

Ph. D. Major: Entomology. May 1998. Kansas State University, Manhattan, Kansas. Dissertation

title: European corn borer, *Ostrinia nubilalis* (Hübner), resistance to *Bacillus thuringiensis* Berliner formulated as Dipel.

M. S. Major: Entomology. July 1986. Southwest Agricultural University, Chongqing, China. Thesis title: Population ecology and management of citrus rust mite, *Phyllocoptruta oleivora* (Ashm.).

B. S. Major: Plant Protection. July 1983. Southwest Agricultural University, Chongqing, China. Thesis title: Sampling techniques of the bird cherry-oat aphid on wheat.

1 RESEARCH AND CREATIVE ACTIVITY

1.1 Research publications (published items only)

1.1.1 Books and monographs

None

1.1.2 Shorter works

Book chapters (chapters or essays in books except for text books)

Huang, F. 2005. Effects of transgenic Bt-plants on non-target organisms. In "Entomological Research: Progress and Prospect", (eds) by T.X. Liu and L. Kang. Science Press. Beijing, China. pp 318-335.

Huang, F. and B. Subramanyam. 2003. Effects of ultrasound on Indianmeal moth reproduction. In "Advances in Stored Product Protection", (eds) by P. F. Credland, D.M. Armitage, C.H. Bell, P.M. Cogan and E. Highley. Proceedings of the 8th International Working Conference on Stored Product Protection, July 22-26, 2002, York, UK. pp 852-857.

Huang, F., L. Qi, J. Ding, X. Cheng, and J. Du. 1991. The effects of feeding amount in standard stages of brown planthopper on rice yield loss. In G. Li and Y. Gu [eds]. Theses of the First Academic Symposium of Mid- and Young-aged Researchers in Plant Protection of China. Science and Technology Press (In Chinese). Beijing, China. pp 271-276.

Refereed Publications (51 publications: journals of national and international reputation [31]; all other referred journals [20])

Affiliation: LSU AgCenter (23 publications)

Huang, F., B.R. Leonard, S.H. Moore, D.R. Cook, J. Baldwin, K. Tindall, and D. Lee. 2008. Allele frequency of resistance to *Bacillus thuringiensis* Cry1Ab corn in Louisiana

populations of sugarcane borer (Lepidoptera: Crambidae). J. Econ. Entomol. 101: 492-498.

Huang, F., B.R. Leonard, S.H. Moore, B. Yue, R. Parker, T. Reagan, M. Stout, D.R. Cook, W. Akbar, C. Chilcutt, W. White, D. Lee, and S. Biles. 2008. Geographical susceptibility of Louisiana and Texas populations of sugarcane borer, *Diatraea saccharalis* (F.) (Lepidoptera: Crambidae) to *Bacillus thuringiensis* Cry1Ab protein. Crop Protect. 27: 799-806.

Yue, B., **F. Huang**, B.R. Leonard, S.H. Moore, R. Parker, D.A. Andow, D.R. Cook, K. Emfinger, and D.R. Lee. 2008. Verifying an F_1 screen for identification and quantification of rare *Bacillus thuringiensis* resistance alleles in field populations of sugarcane borer (Lepidoptera: Crambidae). Entomol. Exp. App. 129: 172-180. (Huang's contribution: project leader, experimental design, data analysis, manuscript writing, and corresponding author).

Huang, F., B.R. Leonard, and D.A. Andow. 2007. F_2 screen for resistance to a *Bacillus thuringiensis*-maize hybrid in sugarcane borer (Lepidoptera: Crambidae). Bull. Entomol. Res. 97: 437-444.

Li, H., L.L. Buschman, **F. Huang**, K.Y. Zhu, B. Bonning, and B. Oppert. 2007. Dipel-selected *Ostrinia nubilalis* larvae are not resistant to transgenic corn expressing *Bacillus thuringiensis* Cry1Ab. J. Econ. Entomol. 100: 1862-1870. (Huang's contribution: establishment of insect colonies, data analysis, and manuscript writing).

Huang F., B.R. Leonard, D.R. Cook, D.R. Lee, D.A. Andow, J.L. Baldwin, K.V. Tindall, and X. Wu. 2007. Frequency of alleles conferring resistance to *Bacillus thuringiensis* maize in Louisiana populations of southwestern corn borer (Lepidoptera: Crambidae). Entomol. Exp. Appl. 122: 53 - 58.

Wu, X., **F. Huang**, B.R. Leonard, and S.H. Moore. 2007. Evaluation of transgenic *Bacillus thuringiensis* corn hybrids against Cry1Ab-susceptible and -resistant sugarcane borer (Lepidoptera: Crambidae). J. Econ. Entomol. 100: 1880-1886. (Huang's contribution: project leader and corresponding author).

Huang, F. B.R. Leonard, and X. Wu. 2007. Resistance of sugarcane borer to *Bacillus thuringiensis* Cry1Ab toxin. Entomol. Exp. Appl. 124: 117-123.

Huang, F., B.R. Leonard, and D.A. Andow. 2007. Sugarcane borer resistance to transgenic *Bacillus thuringiensis*-maize. J. Econ. Entomol.100: 164-171.

Liu, C.Z., S.R. Zhou, L. Yan and **F. Huang**. 2007. Competition among the adults of three grasshoppers (Orthop: Acrididae) on an alpine grassland. J. App. Entomol.131: 153-159. (Huang's contribution: data analysis and manuscript writing).

Huang, F., Bh. Subramanyam, and X. Hou. 2007. Efficacy of spinosad against eight

stored-product insect species on hard white winter wheat. Biopestic. Int. 3: 117-125.

Huang, F. and Bh. Subramanyam. 2007. Effectiveness of spinosad against seven major stored-grain insects on corn. Insect Sci. 14:225-230.

Li, H., L.L. Buschman, K.Y. Zhu, **F. Huang**, and B. Oppert. 2007. Resistance to *Bacillus thuringiensis* endotoxins in the European corn borer (*Ostrinia nubilalis*). Biopestic. Int. 3: 96-107. (Huang's contribution: manuscript writing).

Huang, F., B.R. Leonard, and R.H. Gable. 2006. Comparative susceptibility of European corn borer, southwestern corn borer, and sugarcane borer (Lepidoptera: Crambidae) to Cry1Ab protein in a commercial Bt-corn hybrid. J. Econ. Entomol. 99: 194-202.

Huang, F. 2006. Detection and monitoring of insect resistance to transgenic Bt crops. Insect Science 13: 73-84.

Huang, F. and Bh. Subramanyam. 2006. Lack of repellency of three commercial ultrasonic devices to the German cockroach (Blattodea: Blattellidae). Insect Sci. 13: 61-66.

Li, H, B. Oppert, R.A. Higgins, **F. Huang**, L.L. Buschman, and K.Y. Zhu. 2005. Susceptibility of Dipel-resistant and -susceptible *Ostrinia nubilalis* (Lepidoptera: Crambidae) to individual *Bacillus thuringiensis* protoxins. J. Econ. Entomol. 98: 1333-1340. (Huang's contribution: establishment of insect colonies, conducting insect bioassays, data analysis, and manuscript writing).

Li H., B. Oppert, R.A. Higgins, **F. Huang,** L.L. Buschman, J.R. Gao, and K.Y.Zhu. 2005. Characterization of cDNAs encoding three trypsin-like proteinases and quantitative analysis of mRNA in Bt-resistant and -susceptible strains of *Ostrinia nubilalis*. Insect Biochem. Mol. Biol. 35: 847-860. (Huang's contribution: establishment of insect colonies and manuscript writing).

Huang, F. and Bh. Subramanyam. 2005. Management of five stored-product insects in wheat with pirimiphos-methyl and pirimiphos-methyl plus synergized pyrethrins. Pest Manag. Sci. 61: 356-362.

Huang, F., L.L. Buschman, and R.A. Higgins. 2005. Larval survival and development of susceptible and resistant *Ostrinia nubilalis* (Lepidoptera: Pyralidae) on diet containing *Bacillus thuringiensis*. Agri. Forest. Entomol. 7: 45-52.

Huang, F. and Bh. Subramanyam. 2004. Behavioral and reproductive effects of ultrasound on *Plodia interpunctella* (Hübner). Entomol. Exp. Appl. 113: 157-164.

Li, H., J. Gonzalez, B. Oppert, J. Ferre, R.A. Higgins, L.L. Buschman, G.A. Radke, K.Y. Zhu, and **F. Huang**. 2004. Binding analyses of Cry1Ab and Cry1Ac with membrane vesicles from *Bacillus thuringiensis*-resistant and –susceptible *Ostrinia nubilalis*. Biochem. Biophysi.

Res. Comm. 323: 52-57. (Huang's contribution: establishment of insect colonies and manuscript writing).

Li, H., B. Oppert, R.A. Higgins, **F. Huang**, K.Y. Zhu, and L.L. Buschman. 2004. Comparative analysis of proteinase activities of *Bacillus thuringiensis*-resistant and -susceptible *Ostrinia nubilalis* (Lepidoptera: Crambidae). Insect Biochem. Mol. Biol. 34: 753-762. (Huang's contribution: establishment of insect colonies and manuscript writing).

Affiliation: Kansas State University, 14 publications

Huang, F., Bh. Subramanyam, and M.D. Toews. 2004. Susceptibility of laboratory and field strains of four stored-product insect species to spinosad. J. Econ. Entomol. 97: 2154-2159.

Huang, F. and Bh. Subramanyam. 2003. Responses of *Corcya cephalonica* (Stainton) to pirimiphos-methyl, spinosad, and combination of pirimiphos-methyl and synergized pyrethrins. Pest Manag. Sci. 60: 191-198.

Huang, F., Bh. Subramanyam, and R. Taylor. 2003. Ultrasound affects spermatophore transfer, larval numbers, and larval weight of *Plodia interpunctella* (Hübner) (Lepidoptera: Pyralidae). J. Stored Prod. Res. 39: 413-422.

Huang, F., and Bh. Subramanyam. 2003. Effects of delayed mating on reproductive performance of *Plodia interpunctella* (Hübner) (Lepidoptera: Pyralidae). J. Stored Prod. Res. 39: 53-63.

Li, H., B. Oppert, K.Y. Zhu, R.A. Higgins, **F. Huang**, and L.L. Buschman. 2003. Transgenic plants expressing *Bacillus thuringiensis* delta-endotoxins. Entomol. Sinica 10: 155-166. (Huang's contribution: manuscript writing).

Huang, F., L.L. Buschman, R.A. Higgins, and H. Li. 2002. Survival of Kansas Dipel-resistant European corn borer (Lepidoptera: Crambidae) on Bt and non-Bt corn hybrids. J. Econ. Entomol. 95: 614-621.

Huang, F., Bh. Subramanyam, and J. Clark. 2002. Laboratory and field trials with commercial ultrasonic devices against three ant species (Hymenoptera: Formicidae). J. Agric. Urban Entomol. 19: 25-28.

Huang, F., L.L. Buschman, and R.A. Higgins. 2001. Larval feeding behavior of Dipel-resistant and susceptible *Ostrinia nubilalis* on diet containing *Bacillus thuringiensis* (Dipel ES^{TM}). Entomol. Exp. Appl. 98: 141–148.

Huang, F., K.Y. Zhu, L.L. Buschman, R.A. Higgins, and B. Oppert. 1999. Comparison of midgut proteinases in *Bacillus thuringiensis*-susceptible and -resistant European corn borer, *Ostrinia nubilalis* (Lepidoptera: Pyralidae). Pest. Biochem. Physiol. 65: 132-139.

Huang, F., R.A. Higgins, and L.L. Buschman. 1999. Heritability and stability of resistance to *Bacillus thuringiensis* in European corn borer (Lepidoptera: Pyralidae). Bull. Entomol. Res. 89: 449-454.

Huang, F., L.L. Buschman, and R.A. Higgins. 1999. Susceptibility of different instars of European corn borer (Lepidoptera: Crambidae), to *Bacillus thuringiensis*. J. Econ. Entomol. 92: 547-550.

Huang, F., L.L. Buschman, R.A. Higgins, and W.H. McGaughey. 1999. Inheritance of resistance to *Bacillus thuringiensis* toxin (Dipel ES™) in European corn borer. **Science** (Wash.). 284: 965-967.

Huang, F., R.A. Higgins, and L.L. Buschman. 1999. Transgenic Bt plants: successes, challenges, and strategies. Pestology 23: 2-29.

Huang, F., R.A. Higgins, and L.L. Buschman. 1997. Baseline susceptibility and changes in susceptibility to *Bacillus thuringiensis* subsp. *kurstaki* under selection pressure in European corn borer (Lepidoptera: Pyralidae). J. Econ. Entomol. 90: 1137-1143.

Other Refereed Publications (in Chinese, 14 publications)

Wang, K., Z. Zen, and **F. Huang.** 1992. Comparison of development rate and temperature for three citrus mites. J. Southwest Agri. Univ. 14: 12-16. (Huang's contribution: conducting insect bioassays, data analysis, and manuscript writing).

Huang, F., L. Li, and J. Chen. 1992. A preliminary study on the damage and action threshold of citrus rust mite to citrus. Acta Phytophy. Sinica 19: 223-230.

Qi, L., **F. Huang,** J. Huang, and D. Li. 1991. Studies on management model for population life system of brown planthopper. Chinese J. Applied Ecol. 2: 214-220. (Huang's contribution: project co-leader, experimental design, data collection, data analysis, manuscript writing, and corresponding author).

Huang, F. and X. Cheng. 1990. Studies on the damage of brown planthopper to yield components of rice. Chinese J. Rice Sci. 4: 117-121.

Huang, F. and X. Cheng. 1990. Studies on the relationship between the parameter k and mean value m of negative binomial distribution. J. Biomathematics 5: 106-115.

Hao, K., Z. Hu, and **F. Huang. 1990.** Sampling techniques for *Archamra aerate*. J. Nanjing Agri. Univ. 13: 53-58. (Huang's contribution: data analysis and manuscript writing).

Huang, F. and X. Cheng 1989. Studies on the sampling techniques for insect populations of Neyman's and truncated negative binomial distributions. J. Nanjing Agri. Univ. 12: 39-45.

Li, L., **F. Huang**, and J. Chen. 1989. Ecological characteristics of the citrus rust mite, *Phyllocoptruta oleivora* (Ashm.). Acta Entomol. Sinica 32:184-191. (Huang's contribution: experimental design, data collection, data analysis, and manuscript writing).

Huang, F. 1988. Studies on the sampling techniques of the bird cherry-oat aphid on wheat. J. Nanjing Agri. Univ. 11: 46-50.

Li, L., **Huang, F.**, and J. Chen. 1988. Studies on the population ecology and economic threshold of citrus rust mite, *Phyllocoptruta oleivora* (Ashm.). J. Southwest Agri. Univ. 10: 217-218. (Huang's contribution: experimental design, data collection, data analysis, and manuscript writing).

Huang, F., L. Li, and J. Chen. 1988. A computer management model for the population system of citrus rust mite, *Phyllocoptruta oleivora*. J. Southwest. Agri. Univ. 10: 219-237.

Qi, L., **F. Huang**, and X. Cheng. 1988. Studies on the spatial patterns and sampling techniques of the population of brown planthopper in the initial stable-increasing stage. Chinese J. Rice Science 2: 117-122. (Huang's contribution: experimental design, data collection, data analysis, manuscript writing, and corresponding author).

Li, L., J. Chen, and **F. Huang.** 1985. Study on the bionomics and ecology of citrus rust mite, *Phyllocoptruta oleivora* (Ashm.). J. Southwest Agri. College 7: 144-146. (Huang's contribution: experimental design, data collection, data analysis, and manuscript writing).

Li, L., J. Chen, and **F. Huang.** 1985. Estimation of the economic loss caused by citrus rust mite *Phyllocoptruta oleivora* (Ashm.). J. Southwest Agri. College 7: 151. (Huang's contribution: experimental design, data collection, data analysis, and manuscript writing).

Publications in Louisiana Agriculture

Huang, F., B.R. Leonard, and J. Baldwin. 2006. Corn borers and transgenic Bt corn technology. Louis. Agri.. 49(4): 25-26.

Leonard, B.R., **F. Huang**, and J. Baldwin. 2006. New recommendations to control sorghum webworm. Louis. Agri.. 49(4): 20.

1.1.3 Miscellaneous publications

Technical bulletins/non-refereed publications (Affiliation: LSU AgCenter, 8)

Huang, F., D.R. Cook, B.R. Leonard. 2008. Evaluation of corn seed treatment with cruiser extreme (a14115) in Louisiana, 2006. Arthropod Management Tests. 33: F31

Huang, F., S.H. Moore, B.R. Leonard. 2008. Effect of sorghum seed treatments on plant emergence, plant density, insect infestation and grain yield, 2007. Arthropod Management

Tests. 33: F32

Huang, F., D.R. Cook, B.R. Leonard, and S.H. Moore. 2007. Evaluation of cruiser extreme (a14115) against soil insects in field corn, 2005. Arthropod Management Tests 32: F15.

Huang, F., S.H. Moore, D.R. Cook, and B.R. Leonard. 2007. Evaluation of a novel formulation of cruiser (a9765) for control of yellow sugarcane aphids on grain sorghum, 2006. Arthropod Management Tests 32: F44.

Huang, F., K. Tindall and B.R. Leonard. 2005. Evaluation of four selected foliar insecticides against chinch bugs. Arthropod Management Tests. 30: F23.

Huang, F., R.H. Gable, K. Emfinger, and B.R. Leonard. 2005. Evaluation of selected insecticides against black cutworm and chinch bug. Arthropod Management Tests. 30: F24.

Technical bulletins/non-refereed publications (Affiliation: Kansas State University, 10)

Huang, F. and Bh. Subramanyam. 2002. Reponses of house crickets, *Acheta domestica*, to ultrasound. (4 reports). http://www.oznet.ksu.edu/ultrasound/Project_Final.htm.

Huang, F., Bh. Subramanyam, B. Yue, and R. Charleton. 2002. Responses of the cat flea to three Weitech's ultrasonic devices designed to repel pests. http://www.oznet.ksu.edu/ultrasound/Project_Final.htm.

Huang, F., Bh. Subramanyam, and J. Clark. 2002. Laboratory and field trials with commercial ultrasonic devices against three ant species (Hymenoptera: Formicidae). http://www.oznet.ksu.edu/ultrasound/Project_Final.htm.

Subramanyam, Bh., **F. Huang**, and R. Taylor. 2002. Effects of a novel ultrasonic emitter on the reproductive performance of the Indianmeal moth, *Plodia interpunctella* (Hübner), (Lepidoptera: Pyralidae). http://www.oznet.ksu.edu/ultrasound/Project_Final.htm.

Huang, F., and Bh. Subramanyam. 2002. Response of imperil scorpion, *Pandinus imperator*, to ultrasound emitted (2 reports). http://www.oznet.ksu.edu/ultrasound/Project_Final.htm.

Huang, F. and Bh. Subramanyam. 2002. Response of long-bodied cellar spiders to ultrasound (8 reports). http://www.oznet.ksu.edu/ultrasound/Project_Final.htm.

Huang, F. and Bh. Subramanyam. 2002. Field study on the response of yellow jackets, *Vespula maculifrons* (Buysson) to ultrasound emitted from transonic Cix 0600. (3 reports). http://www.oznet.ksu.edu/ultrasound/Project_Final.htm.

Huang, F. and Bh. Subramanyam. 2001. Responses of German cockroaches to ultrasound-emitting devices designed to repel pests.

http://www.oznet.ksu.edu/ultrasound/Project_Final.htm.

Huang, F. and Bh. Subramanyam. 2000. Responses of German cockroaches to Weitech's ultrasound-emitting devices designed to repel pests. http://www.oznet.ksu.edu/ultrasound/Project_Final.htm.

Huang, F. and Bh. Subramanyam. 2000. Field study on the response of flies to three ultrasonic devices from Weitech. http://www.oznet.ksu.edu/ultrasound/Project_Final.htm.

Proceedings (Affiliation: LSU AgCenter, 15)

Wu, X., **F. Huang**, B.R. Leonard, and J. Ottea. 2008. Assessing the genetic basis of *Bacillus thuringiensis* resistance in the sugarcane borer (abstract). Proceedings, Louisiana Agricultural Scientists Association Meeting, March 26, 2008. Baton Rouge, LA.

Yang, Y., J. Ottea, Y.C. Zhu, C. Husseneder, B.R. Leonard, and **F. Huang**. 2008. Activities of amiopeptidase and alkaline phosphatase from *Bacillus thuringiensis*-susceptible and -resistant strains of the sugarcane borer (abstract). Proceedings, Louisiana Agricultural Scientists Association Meeting, March 26, 2008. Baton Rouge, LA.

Huang, F., B.R. Leonard, S.H. Moore, D.R. Cook, and D. Lee. 2008. A systematic monitoring program for detecting early changes of *Bacillus thuringiensis* resistance allele frequencies in Louisiana populations of the sugarcane borer (abstract). Proceedings, Louisiana Agricultural Scientists Association Meeting, March 26, 2008. Baton Rouge, LA.

Liu, J., **F. Huang**, A. Hammond, S.H. Moore, and B.R. Leonard. 2008. Biological studies with *Moodna bisinuella* Hampson: a potential pest of corn in Louisiana (abstract). Proceedings, Louisiana Agricultural Scientists Association Meeting, March 26, 2008. Baton Rouge, LA.

Huang, F., B.R. Leonard, S.H. Moore, B. Yue, R. Parker, T. Reagan, M. Stout, D.R. Cook, W. Akbar, C. Chilcutt, W. White, D. Lee, S. Biles. 2008. Geographical susceptibility of Louisiana and Texas populations of the sugarcane borer, *Diatraea saccharalis* (F.) (Lepidoptera: Crambidae) to *Bacillus thuringiensis* Cry1Ab protein. USDA NC-205 Annual Reports. (in CD).

Yue, B., **F. Huang**, B.R. Leonard, S.H. Moore, D.A. Andow, D.R. Cook, K. Emfinger, and D.R. Lee. 2008. Screening for rare *Bacillus thuringiensis* resistance alleles in field populations of sugarcane borer (Lepidoptera: Crambidae) Using F_1 hybridization with a resistant strain. USDA NC-205 Annual Reports. (in CD).

Wu X., **F. Huang**, B.R. Leonard, and S.H. Moore. 2007. Evaluation of transgenic *Bacillus thuringiensis* (Bt)-corn hybrids against Cry1Ab-susceptible and –resistant sugarcane borer (Lepidoptera: Crambidae). USDA NC-205 Annual Reports. (in CD).

Huang, F., B.R. Leonard, S.H. Moore, D.R. Cook, J. Baldwin, K.V. Tindall, and D.R. Lee. 2008. Allele frequency of resistance to *Bacillus thuringiensis* Cry1Ab–corn in Louisiana populations of sugarcane borer (Lepidoptera: Crambidae). USDA NC-205 Annual Reports. (in CD).

Huang F., B.R. Leonard, and X. Wu. 2007. Resistance of sugarcane borer to *Bacillus thuringiensis* Cry1Ab toxin. USDA NC-205 Annual Reports. (in CD).

Yue, B., **F. Huang**, B.R. Leonard, S.H. Moore, D.A. Andow, D.R. Cook, and D.R. Lee. 2007. Detection of *Bacillus thuringiensis* resistance alleles in field populations of sugarcane borer using an F_1 generation screening method (abstract). Proceedings, Louisiana Agricultural Scientists Association Meeting, March 27, 2007. Baton Rouge, LA.

Wu, X., **F. Huang**, B.R. Leonard, and S.H. Moore. 2007. Evaluation of seven *Bacillus thuringiensis*-corn hybrids against a Cry1Ab-resistant strain of sugarcane borer (abstract). Proceedings, Louisiana Agricultural Scientists Association Meeting, March 27. 2007, Baton Rouge, LA.

Huang, F., B.R. Leonard, and D.A. Andow. 2006. F_2 screen for resistance to a *Bacillus thuringiensis*-corn hybrid in the sugarcane borer (Lepidoptera: Crambidae). USDA NC-205 Annual Reports. pp 26-41 (in CD).

Huang, F., B.R. Leonard, J. Baldwin, and X. Wu. 2006. Sugarcane borer resistance to *Bacillus thuringiensis*: possibility and management (abstract). Proceedings, Louisiana Agricultural Scientists Association Meeting. April 6, 2006, Alexandria, LA.

Wu, X., **F. Huang**, B.R. Leonard, and S.H. Moore. 2006. Evaluation of commercial transgenic Bt corn hybrids against Cry1Ab susceptible and resistant sugarcane borer, *Diatraea saccharalis* (F.) in Louisiana (abstract). Proceedings, Louisiana Agricultural Scientists Association Meeting, April 6, 2006. Alexandria, LA.

Huang, F., B. R. Leonard, and R.H. Gable. 2005. Susceptibility of European corn borer, southwestern corn borer, and sugarcane borer to Cry1Ab protein in a commercial Bt-corn hybrid. USDA NC-205 Annual Reports, pp 14-29 (in CD).

Proceedings (Affiliation: Kansas State University, 21)

Li, H., B. Oppert, R.A. Higgins, F. **Huang**, L.L. Buschman, and K.Y. Zhu. 2004. Gut proteinase activities and Bt-toxin binding to brush border membrane vesicles of Bt-resistant and -susceptible European corn borer. USDA NC-205 Annual Reports, pp. 14-24 (in CD).

Huang, F., R.A. Higgins, and L.L. Buschman. 2004. Larval survival and development of susceptible and resistant *Ostrinia nubilalis* (Lepidoptera: Pyralidae) on diet containing

Bacillus thuringiensis (abstract). USDA NC-205 Annual Reports, p 32 (in CD).

Li, H., R.A. Higgins, B. Oppert, L.L. Buschman, **F. Huang**, and K.Y. Zhu. 2004. Survival of Dipel-resistant and –susceptible *Ostrinia nubilalis* (Lepidoptera: Pyralidae) larvae on different tissues of transgenic Bt and non-Bt corn plants and concentrations of Cry1Ab in the Bt corn tissues (abstract). USDA NC-205 Annual Reports, pp 33 (in CD).

Li, H., B. Oppert, **F. Huang**, R.A. Higgins, L.L. Buschman, and K.Y. Zhu. 2004. Susceptibility of Dipel-resistant and -susceptible European corn borer (Lepidoptera: Crambidae) to individual *Bacillus thuringiensis* protoxins (abstract). USDA NC-205 Annual Reports, pp 33-34 (in CD).

Li, H., B. Oppert, R. Higgins, L. Buschman, K.Y. Zhu, and **F. Huang**. 2004. Reduced trypsin-like proteinase activity is a major mechanism of resistance to Cry1Ab protoxin in a Dipel-resistant European corn borer strain (abstract). Proceedings, the 59th Annual Meeting of North Central Branch, Entomological Society of America. March 28-31, 2004. Kansas City, MO.

Bowen, J., **F. Huang**, and Bh. Subramanyam. 2004. Efficacy of spinosad on corn against stored-product insects (abstract). Proceedings, the 59th Annual Meeting of North Central Branch, Entomological Society of America. March 28-31. 2004. Kansas City, MO.

Li, H., J.G. Cabrera, B. Oppert, J. Ferré, R.A. Higgins, L.L. Buschman, K.Y. Zhu, and **F. Huang**. 2003. A resistance mechanism in the European corn borer (Lepidoptera: Crambidae) to *Bacillus thuringiensis* endotoxins. Proceedings, the 58th Annual Meeting of North Central Branch, Entomological Society of America. March 23-26, 2003. Madison, WI.

Li, H., J. Gonzalez-Cabrera, B. Oppert, J. Ferré, R.A. Higgins, L.L. Buschman, K.Y. Zhu, and **F. Huang**. 2003. Resistance mechanisms to *Bacillus thuringiensis* endotoxins in the European corn borer (Lepidoptera: Crambidae) (abstract). Proceedings, the 36th Annual Meeting of the Society for Invertebrate Pathology, July 26-30, 2003. Burlington, VT.

Li, H., R.A. Higgins, B. Oppert, **F. Huang**, and L.L. Buschman. 2002. Differences in proteinase activities of Bt-resistant and -susceptible European corn borers. USDA NC-205 Annual Reports pp. 35-40 (in CD).

Li, H., R.A. Higgins, B. Oppert, L.L. Buschman, **F. Huang**, and K.Y. Zhu. 2002. Fate of Dipel-resistant and –susceptible European corn borer strains on different tissues of transgenic Bt and non-Bt corn plants. USDA NC-205 Annual Reports, pp. 41-46 (in CD).

Li, H., B. Oppert, R.A. Higgins, **F. Huang**, and L.L. Buschman. 2002. Differences in proteinase activities of Bt-resistant and –susceptible European corn borer (Lepidoptera: Crambidae) (abstract). Proceedings, the 57th Annual Meeting of North Central Branch, Entomological

Society of America. March 24-27, 2002. Easting Lansing, MI.

Li, H., B. Oppert, **F. Huang**, R.A. Higgins, L.L. Buschman, and K.Y. Zhu. 2001. Effects of individual Bt protoxins on larval survival and growth of Kansas Dipel-resistant and -susceptible European corn borer strains (abstract). Proceedings, the 56th Annual Meeting of North Central Branch, Entomological Society of America. March 25-28, 2001. Fort Collins, CO.

Huang, F., R.A. Higgins, and L.L. Buschman. 2000. Fitness of Dipel-susceptible and Dipel resistant strains of European corn borer (abstract). Proceedings, the 55th Annual Meeting of North Central Branch, Entomological Society of America. April 13-16, 2000. Minneapolis, MN.

Huang, F., R.A. Higgins, and L.L. Buschman. 1999. Preliminary studies of susceptibility of the Kansas Dipel-resistant and susceptible European corn borer strains to Bt Cry toxins (abstract). Proceedings, the 54th Annual Meeting of North Central Branch, Entomological Society of America. March 28-31, 1999. Des Moines, IA.

Huang F., R.A. Higgins, and L.L. Buschman. 1998. Practical resistance management recommendations based on genetic studies of European corn borer (abstract). Proceedings, the 53rd Annual Meeting of North Central Branch, Entomological Society of America, p 55. March 8-11, 1998. Sioux Falls, SD.

Huang, F., R.A. Higgins, and L.L. Buschman. 1998. Susceptibility of different instars and responses of European corn borer to *Bacillus thuringiensis* under laboratory selection. USDA NC-205 Annual Reports, 1-6.

Huang, F., R.A. Higgins, and L.L. Buschman. 1998. Genetics of resistance to *Bacillus thuringiensis* in European corn borer. USDA NC-205 Annual Reports, 1-12.

Huang, F., R.A. Higgins, and L.L. Buschman. 1997. A review of progress for Dipel resistance in laboratory colonies of European corn borer (abstract). Proceedings, the 52nd Annual Meeting of North Central Branch, Entomological Society of America, p 56. March 23-26, 1997. Columbus, OH.

Huang, F., R.A. Higgins, and L.L. Buschman. 1997. Initial assessment of inheritance of resistance to *Bacillus thuringiensis* in European corn borer. USDA NC-205 Annual Reports, 142-148.

Huang, F., R. A. Higgins, and L.L. Buschman. 1996. European corn borer resistance studies using Dipel in the laboratory as the Bt source (abstract). Proceedings, the 51st Annual Meeting of North Central Branch, Entomological Society of America, D-36. March 24-27, 1996. Omaha, NE.

Huang, F., R.A. Higgins, and L.L. Buschman. 1995. European corn borer response to *Bacillus thuringiensis* applied as Dipel to diet (abstract). Proceedings, the 50th Annual Meeting of North Central Branch, Entomological Society of America, D-199. March 26-29, 1995. Lexington, KY.

1.2 Listing of other publications accepted for publication but not yet published

Huang, F., and B.R. Leonard. 2008. Detection and monitoring of *Bacillus thuringiensis* resistance alleles in the sugarcane borer, *Diatraea saccharalis* (F.). In "Genetically Modified Plants: New Research Trends", (eds) by T.V. Wolf and J. P. Koch. Nova Science Publishers, Hauppauge, NY. In press. (ISBN: 978-1-60456-696-3).

Akbar, W., J. A. Ottea, J. M. Beuzelin, T.E. Reagan, and **F. Huang**. 2008. Selection and life history traits of tebufenozide-resistant sugarcane borer (Lepidoptera: Crambidae). J. Econ. Entomol. In press (Huang's contribution: one insect colony, data analysis, and paper writing).

Wu, X., B.R. Leonard, Y-C Zhu, C.A. Abel, G.P. Head, and **F. Huang**. 2009. Susceptibility of Cry1Ab-resistant and -susceptible sugarcane borer (Lepidoptera: Crambidae) to four *Bacillus thuringiensis* toxins. Journal of Invertebrate Pathology. In press. (Huang's contribution: project leader and corresponding author)

Xu, Z., F. Liu, J. Chen, **F. Huang**, D.A. Andow, J. Shen, and Y.C. Zhu. 2009. Using F_2 screen to monitor resistance allele frequency to Bt cotton in field populations of *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae). Pest Management Science. In press 02/08/08. (Huang's contribution: data analysis and manuscript writing).

Huang, F., R. Parker, B.R. Leonard, Y. Yong, and Jin Liu. 2009. Frequency of resistance alleles to *Bacillus thuringiensis*-corn in Texas populations of the sugarcane borer, *Diatraea saccharalis* (F.) (Lepidoptera: Crambidae). Crop Protection. In press.

1.3 Other creative and artistic contribution

1.4 Participation in professional meetings, symposia, workshops, and conferences

Participation in symposia, workshops, conferences, etc.

2008. Louisiana Wheat Management Meeting. July 24, 2008. Alexandria, LA.

2008. Hessian Fly Web Conference June 30, 2008.

2008. Web seminar, Insect Resistant Management Recommendations. National Corn Growers Association. May 2, 2008.

2008. Annual Meeting of North Central Multistate Project (NC-205): Ecology and Management of European Corn Borer and Other Lepidopteran Pests of Corn. Jan. 28-29, 2008. St. Louis, MO.

2007. Louisiana Wheat Management Meeting. Oct. 10, 2007. Alexandria, LA.

2007. SBIR/STTR Technology Commercialization Workshop. April 24, 2007. Baton Rouge, LA.

2006. The 2006 CSREES Southern Region Grantsmanship Workshop. Feb. 8-9, 2006. Cincinnati, OH.

2005. Co-organizer (with Y.P. Chen, USDA-ARS), Overseas Chinese Entomologists Association Symposia-Road to success. 2005 Annual Meeting of Entomological Society of America. Dec. 15-18, 2005. Fort Lauderdale, FL.

2005. CSREES, USDA Awardee Workshop on Biologically-based Pest Management. Dec.14, 2005. Fort Lauderdale, FL.

2005. NSF Day Workshop at Louisiana State University. March 2005. Baton Rouge, LA

2003. Fourth Stored Product Pest Management & Heat Treatment Workshop. Aug. 5-7, 2003. Manhattan, KS.

2001. Third Stored Product Pest Management & Heat Treatment Workshop, Aug. 6-8, 2001. Manhattan, KS.

2000. Second Stored Product Pest Management & Heat Treatment Workshop, Aug. 14-16, 2000. Manhattan, KS.

Invited presentations (Affiliation: LSU AgCenter, 9)

Leonard, B.R., F. **Huang**, and J. Baldwin. 2008. Grain IPM update: Bt corn traits in Louisiana and their associated codes. Louisiana Technology and Management Conference. Feb. 6-8, 2008. Alexandria, LA.

Huang, F. and B.R. Leonard. 2007. Use of F_2 screening to identify sugarcane borer resistance in Bt corn: How can this technique be employed more broadly? Annual Meeting of Entomological Society of America. Dec. 9-12, 2007. San Diego, CA.

Leonard, B.R., J. Baldwin, and **F. Huang.** 2007. Compatibility of insecticide seed treatments with pest management strategies in southern field corn. Annual Meeting of Entomological Society of America. Dec. 9-12, 2007. San Diego, CA.

Huang, F. 2007. Detection of rare Bt resistance alleles in sugarcane borer. May 16, 2007. USDA-ARS, Stoneville, MS.

Huang, F. 2007. Detection and monitoring of insect resistance to Bt crops. Department of Entomology, LSU AgCenter. March 9, 2007. Baton Rouge, LA.

Leonard, B.R. and **F. Huang**. 2006. Adapting IPM strategies to the evolving needs in biotech

cotton and field corn. The 5th National IPM Symposium. April 4-6, 2006. St. Louis, MO.

Leonard, R.B., J.L. Baldwin, and **F. Huang**. 2006. Field corn and grain sorghum IPM: seed treatments, corn borers, and new pests. Louisiana Technology and Management Conference. Feb. 15-17, 2006. Alexandria, LA.

Huang, F. and R.B. Leonard. 2005. Assessing high dose/refuge strategy for managing sugarcane borer, *Diatraea saccharalis* (F.) resistance to transgenic Bt-corn in the mid-southern region of the United States. Semi-Annual Meeting of the Industry Advisory Board NSF Center for IPM. Nov. 21-22, 2005. Raleigh, NC.

Leonard, R.B. and F. **Huang.** 2005. Corn and grain sorghum insect update and management recommendations. Louisiana Technology and Management Conference. Feb. 16-18, 2005. Alexandria, LA.

Invited presentations (Affiliation: Kansas State University, 14)

Huang, F. 2003. Novel biorational techniques for managing post-harvested insect pests. Zhongshuan University, Nov. 20, 2003. Guangzhou, China.

Huang, F. 2003. Current status of transgenic Bt corn and resistance management in the United States. Zhongshuan University, Nov. 21, 2003. Guangzhou, China.

Huang, F. 2003. Use of spinosad and heat treatment to manage insect pests in the post-harvested environments. Nanjing Agricultural University, Nov. 23, 2003. Nanjing, China.

Huang, F. 2003. IRM for transgenic Bt corn. Nanjing Agricultural University, Nov. 23, 2003. Nanjing, China.

Subramanyam, Bh. and **F. Huang**. 2003. Ultrasound and Indian meal moth reproduction. Annual Meeting of Entomological Society of America. Oct. 26-29, 2003. Cincinnati, OH.

Huang, F. 2002. Transgenic Bt corn: successes, challenges, and strategies. International Rice Research Institute (IRRI). Aug. 2002. IRRI, Philippines.

Huang, F., Y.B. Liu, and J. Liu. 2001. Publication experiences in Science, Nature, and Annual Review of Entomology. Annual Meeting of Entomological Society of America. Dec. 9-12, 2001. San Diego, CA. (by the Overseas Chinese Entomologists Association).

Huang, F. 2001. Ultrasound: Can it be an effective pest management tool? Department of Entomology, Kansas State University, Manhattan, KS.

Huang, F. 2001. Transgenic Bt corn: implications and prospects. Monsanto, St. Louis, MO.

Higgins R.A., L.L. Buschman, **F. Huang**, K.Y. Zhu, and B. Oppert. 1999. Bt resistance

management in transgenic Bt corn. Grain Marketing Lab. USDA-ARS, Manhattan, KS.

Huang, F., R.A. Higgins, and L.L. Buschman. 1999. Transgenic Bt plants: successes, challenges, and strategies. The II Asia Pacific Crop Protection Conference. Feb. 18-20, 1999. Mumbai, India (Plenary presentation).

Huang F., R.A. Higgins, and L.L. Buschman. 1998. Practical resistance management recommendations based on genetic studies of European corn borer. The 53rd Annual Meeting of North Central Branch, Entomological Society of America. March 8-11, 1998. Sioux Falls, SD.

Huang, F. and R.A. Higgins. 1997. Resistant colony update-Kansas State. Monsanto/YieldGard Academic Data Review. Oct. 27-28, 1997. Monsanto, St. Louis, MO.

Huang, F., R.A. Higgins, and L.L. Buschman. 1997. B.T. resistance in corn borers. Entomology Research/Extension Update. Nov. 20, 1997. Manhattan, KS.

Selected other oral presentations (Affiliation: LSU AgCenter, 23)

Wu, X., **F. Huang**, B.R. Leonard, and J. Ottea. 2008. Assessing the genetic basis of *Bacillus thuringiensis* resistance in the sugarcane borer. Louisiana Agricultural Scientists Association Meeting, March 26, 2008. Baton Rouge, LA.

Wu, X., **F. Huang**, B.R. Leonard, and J. Ottea. 2008. Inheritance of resistance to the Cry1Ab *Bacillus thuringiensis* toxin in *Diatraea saccharalis* (Lepidoptera: Crambidae). The 82nd Annual Meeting of Southeastern Branch, Entomological Society of America. Mar. 2-5, 2008. Jacksonville, FL.

Huang, F, B.R. Leonard, S.H. Moore, D.R. Cook, B. Yue, J. Baldwin, and D.R. Lee. 2007. Detection and monitoring of sugarcane borer resistance to transgenic Bt corn in Louisiana. The 81st Annual Meeting of Southeastern Branch, Entomological Society of America. Mar. 4-7, 2007. Knoxville, TN.

Huang, F. and B.R. Leonard. 2007. Emerging insect corn pest problems in field corn and grain sorghum. Louisiana Soybean and Grain Research and Promotion Board Meeting. Nov. 15-16, 2007. LSU AgCenter, Baton Rouge, LA.

Leonard, B.R., **F. Huang,** and J. Baldwin . 2007. Refining field corn and grain sorghum insect pest management strategies. Louisiana Soybean and Grain Research and Promotion Board Meeting. Nov. 15-16, 2007. LSU AgCenter, Baton Rouge, LA.

Huang, F. 2007. Corn borer research in Louisiana. USDA NC205 Annual Meeting. Feb. 1-2, 2007. Dallas, TX.

Huang, F., B.R. Leonard, D.R. Cook, S.H. Moore, K. Tindall, D. Lee and X. Wu. 2006. Frequency

of resistance to a *Bacillus thuringiensis*-corn hybrid in Louisiana populations of sugarcane borer. Annual Meeting of Entomological Society of America. Dec. 9-13, 2006. Indianapolis, IN.

Huang, F. and B.R. Leonard. 2006. Emerging insect corn pest problems in field corn and grain sorghum. Louisiana Soybean and Grain Research and Promotion Board Meeting. Nov. 16-17, 2006. LSU AgCenter, Baton Rouge, LA.

Leonard, B.R., **F. Huang,** and J. Baldwin . 2006. Refining field corn and grain sorghum insect pest management strategies. Louisiana Soybean and Grain Research and Promotion Board Meeting. Nov. 16-17, 2006. LSU AgCenter, Baton Rouge, LA.

Huang, F., B.R. Leonard, J. Baldwin, and X. Wu. 2006. Sugarcane borer resistance to *Bacillus thuringiensis*: possibility and management. Louisiana Agricultural Scientists Association Meeting. April 6, 2006. Alexandria, LA.

Wu, X., **F. Huang**, B.R. Leonard, and S.H. Moore. 2006. Evaluation of commercial transgenic Bt corn hybrids against Cry1Ab susceptible and resistant sugarcane borer, *Diatraea saccharalis* (F.) in Louisiana. Louisiana Agricultural Scientists Association Meeting. April 6, 2006. Alexandria, LA.

Huang, F. and B.R. Leonard. 2006. Performance of Herculex Bt corn against Cry1Ab-susceptible and –resistant sugarcane borer. The 80th Annual Meeting of Southeastern Branch, Entomological Society of America. March 5-8, 2006. Wilmington, NC.

Huang, F, B.R. Leonard, and D.A. Andow. 2006. Corn borer research in Louisiana. USDA NC-205 Annual Meeting. Jan. 21-23, 2006. Toronto, Canada.

Huang, F. and B.R. Leonard. 2005. F_2 screen for resistance to a commercial Bt-corn hybrid in a Louisiana population of sugarcane borer (Lepidoptera: Crambidae). Annual Meeting of Entomological Society of America. Dec.15-18, 2005. Fort Lauderdale, FL.

Huang, F. and R.B. Leonard. 2005. Emerging insect corn pest problems in field corn and grain sorghum. Louisiana Soybean and Grain Research and Promotion Board Meeting. Nov. 10-11, 2005. LSU AgCenter, Baton Rouge, LA.

Leonard, B.R., **F. Huang,** and J. Baldwin . 2005. Refining field corn and grain sorghum insect pest management strategies. Louisiana Soybean and Grain Research and Promotion Board Meeting. Nov. 10-11, 2005. LSU AgCenter, Baton Rouge, LA.

Huang, F. B.R. Leonard, R. Gable. 2005. Susceptibility of European corn borer, southwestern corn borer, and sugarcane borer to a commercial Bt-corn hybrid. USDA NC-46/NC-205 Annual Meeting. Jan. 24-27, 2005. Beltsville, MD.

Gable, R.H., B.R. Leonard, **F. Huang**, K.V. Tindall, and M.M. Willrich. Residual efficacy of

methoxyfenozide against sugarcane borer and southwestern corn borer in field corn. The 79th Annual Meeting of Southeastern Branch, Entomological Society of America. March 6-9, 2005. Tunica, MS.

Huang, F. and B.R. Leonard. 2005. Estimation of resistance allele frequencies to a commercial Bt-corn hybrid in a Louisiana sugarcane borer population. The 79th Annual Meeting of Southeastern Branch, Entomological Society of America. March 6-9, 2005. Tunica, MS.

Huang, F. and B.R. Leonard. 2005. Comparative susceptibility of sugarcane borer, southwestern corn borer, and European corn borer to Cry1Ab toxin in transgenic Bt corn plants. The 79th Annual Meeting of Southeastern Branch, Entomological Society of America. March 6-9, 2005. Tunica, MS.

Huang, F., B.R. Leonard, and R. Gable. 2004. Susceptibility of southwestern corn borer and sugarcane borer to Cry1Ab toxin in a commercial Bt-corn hybrid. Annual Meeting of Entomological Society of America. Nov. 14-17, 2004. Salt Lake City, UT.

Huang, F. and R.B. Leonard. 2004. Emerging insect corn pest problems in field corn and grain sorghum. Louisiana Soybean and Grain Research and Promotion Board Meeting. Nov. 18-19, 2004. LSU AgCenter, Baton Rouge, LA.

Leonard, B.R., **F. Huang,** and J. Baldwin . 2004. Refining field corn and grain sorghum insect pest management strategies. Louisiana Soybean and Grain Research and Promotion Board Meeting. Nov. 18-19, 2004. LSU AgCenter, Baton Rouge, LA.

Selected other oral presentations (Affiliation: Kansas State University, 10)

Bowen, J., **F. Huang**, and Bh. Subramanyam. 2004. Efficacy of spinosad on corn against stored-product insects. The 59th Annual Meeting of North Central Branch, Entomological Society of America. March 28-31, 2004. Kansas City, MO.

Li, H., B. Oppert, R.A. Higgins, L.L. Buschman, K.Y. Zhu, and **F. Huang**. 2004. Reduced trypsin-like proteinase activity is a major mechanism of resistance to Cry1Ab protoxin in a Dipel-resistant European corn borer strain. The 59th Annual Meeting of North Central Branch, Entomological Society of America. March 28-31, 2004. Kansas City, MO.

Huang, F., Bh. Subramanyam, R. Roesli, and M. Toews. 2003. Baseline susceptibility of four stored-product insects from northeast kansas to spinosad. Annual Meeting of Entomological Society of America. Oct. 26-29, 2003. Cincinnati, OH.

Huang, F. and Bh. Subramanyam 2003. Evaluation of spinosad as a grain protectant against stored-grain insects on corn, wheat, sunflower and birdseeds. Dow AgroSciences Spinosad Data Review and Product Update Meeting. May 20-21, 2003. Manhattan, KS.

Huang, F. and Bh. Subramanyam. 2003. Baseline susceptibility of four stored-product insects from northeast Kansas to spinosad. Dow AgroSciences Spinosad Data Review and Product Update Meeting. May 20-21, 2003. Manhattan, KS.

Li, H., J. Gonzalez-Cabrera, B. Oppert, J. Ferré, R.A. Higgins, L.L. Buschman, KY. Zhu, and **F. Huang**. 2003. Resistance mechanisms to *Bacillus thuringiensis* endotoxins in the European corn borer (Lepidoptera: Crambidae). The 36th Annual Meeting of the Society for Invertebrate Pathology, July 26-30, 2003. Burlington, VT.

Huang, F. Bh. Subramanyam, and R. Taylor. 2002. Effects of ultrasound on adult movement, courtship and mating behaviors of Indianmeal moth. Annual Meeting of Entomological Society of America. Nov. 17-20, 2002. Fort Lauderdale, FL.

Subramanyam, Bh., M. Toews, L. Fang, R. Roesi, and **F. Huang**. 2002. Spinosad: a potential grain protectant. Annual Meeting of Entomological Society of America. Nov. 17-20, 2002. Fort Lauderdale, FL.

Huang, F., Bh. Subramanyam, and M. Toews. 2002. Efficacy of Actellic against stored grain insects on corn and sunflower seeds. Second Annual USDA RAMP Meeting, Oct. 28-29, 2002. Purdue University, IN.

Huang F., R.A. Higgins, and L.L. Buschman. 1998. Performance of the Kansas Dipel-Resistant and Dipel-susceptible European corn borer colonies on different Bt corn hybrids. Annual Meeting of Entomological Society of America. Nov. 8-12, 1998. Las Vegas, NV.

Poster displays at professional meetings (Affiliation: LSU AgCenter, 17)

Huang, F., B.R. Leonard, S.H. Moore, D.R. Cook, and D. Lee. 2008. A systematic monitoring program for detecting early changes of *Bacillus thuringiensis* resistance allele frequencies in Louisiana populations of the sugarcane borer. Louisiana Agricultural Scientists Association Meeting. March 26, 2008. Baton Rouge, LA.

Liu, J., **F. Huang**, A. Hammond, S.H. Moore, and B.R. Leonard. 2008. Biological studies with *Moodna bisinuella* Hampson: a potential pest of corn in Louisiana. Louisiana Agricultural Scientists Association Meeting. March 26, 2008. Baton Rouge, LA.

Yang, Y., J. Ottea, Y.C. Zhu, C. Husseneder, B.R. Leonard, and **F. Huang**. 2008. Activities of amiopeptidase and alkaline phosphatase from *Bacillus thuringiensis*-susceptible and –resistant strains of the sugarcane borer. Louisiana Agricultural Scientists Association Meeting. March 26, 2008. Baton Rouge, LA.

Huang, F., D.R. Cook, B.R. Leonard, and S. Martin. 2008. Evaluation of corn seed treatment with Cruiser Extreme (A14115) in Louisiana. The 82nd Annual Meeting of Southeastern Branch,

Entomological Society of America. March 2-5, 2008. Jacksonville, FL.

Liu, J., B.R. Leonard, A. Hammond, S.H. Moore, and **F. Huang**. 2008. Biology of *Moodna bisinuella* Hampson: a new state record and a potential pest of corn and grain sorghum in Louisiana. The 82nd Annual Meeting of Southeastern Branch, Entomological Society of America. March 2-5, 2008. Jacksonville, FL.

Yang, Y., J. Ottea, Y.C. Zhu, C. Husseneder, B.R. Leonard, and **F. Huang**. 2008. Enzymatic analysis of *Bacillus thuringiensis*-susceptible and -resistant strains of the sugarcane borer, *Diatraea saccharalis* (F.). The 82nd Annual Meeting of Southeastern Branch, Entomological Society of America. March 2-5, 2008. Jacksonville, FL.

Huang, F., S.H. Moore, D.R. Cook, B.R. Leonard, and S. Martin. 2007. Effect of sorghum seed treatments on seed emergence, plant stand, insect occurrence and grain yield. Annual Meeting of Entomological Society of America. Dec. 9-12, 2007. San Diego, CA.

Wu, X., **F. Huang**, B.R. Leonard, and Y.C. Zhu. 2007. Susceptibilities of Cry1Ab–resistant and -susceptible sugarcane borer to Bacillus thuringiensis Cry1Aa and Cry1Ac toxins. Annual Meeting of Entomological Society of America. Dec. 9-12, 2007. San Diego, CA.

Yue, B., **F. Huang**, B.R. Leonard, S.H. Moore, D. A. Andow, D.R. Cook, and D.R. Lee. 2007. Detection of *Bacillus thuringiensis* resistance alleles in field populations of sugarcane borer using an F_1 generation screening method. Louisiana Agricultural Scientists Association Meeting. March 27, 2007. Baton Rouge, LA.

Wu, X., **F. Huang**, B.R. Leonard, and S.H. Moore. 2007. Evaluation of seven *Bacillus thuringiensis*-corn hybrids against a Cry1Ab-resistant strain of sugarcane borer. Louisiana Agricultural Scientists Association Meeting. March 27, 2007. Baton Rouge, LA.

Yue, B, **F. Huang**, B.R. Leonard, S.H. Moore, D.R. Cook, and D.R. Lee. 2007. Screening rare Bt resistance alleles in field populations of sugarcane borer using hybridization with Bt-resistant colony. The 81st Annual Meeting of Southeastern Branch, Entomological Society of America. March 4-7, 2007. Knoxville, TN.

Wu X., **F. Huang**, B.R. Leonard and S.H. Moore. 2006. Confirmation of a Cry1Ab-resistant sugarcane borer (Lepidoptera: Crambidae) strain on Bt corn plants in Louisiana. Annual Meeting of Entomological Society of America. Dec. 10-13, 2006. Indianapolis, IN.

Wu, X., **F. Huang**, B.R. Leonard, and S.H. Moore. 2006. Evaluation of transgenic Bt corn against susceptible and resistant sugarcane borer. The 80th Annual Meeting of Southeastern Branch, Entomological Society of America. March 5-8, 2006. Wilmington, NC.

Tindall, K.V., **F. Huang**, B.R. Leonard, G.E. Coburn, C. Carlton, and V.M. Bayless. 2006. *Moodna bisinuella* Hampson: a potential pest to corn and grain sorghum in Louisiana. The

80th Annual Meeting of Southeastern Branch, Entomological Society of America. March 5-8, 2006. Wilmington, NC.

Wu, X., **F. Huang**, B.R. Leonard, and S.H. Moore. 2005. Assessment of a 'high dose' qualification for seven commercial Bt-corn hybrids against the sugarcane borer (Lepidoptera: Crambidae). Annual Meeting of Entomological Society of America. Dec. 15-18, 2005. Fort Lauderdale, FL.

Tindall, K.V., **F. Huang**, B.R. Leonard, G.E. Coburn, C. Carlton, V.M. Bayless. 2005. *Moodna bisinuella* Hampson: A new state record for Louisiana and a potential threat to corn. Annual Meeting of Entomological Society of America. Dec. 15-18, 2005. Fort Lauderdale, FL.

Leonard, B.R., **F. Huang**, J. Temple, and K. Tindall. 2004. Residual efficacy of methoxyfenozide against southwestern corn borer and sugarcane borer on corn. Annual Meeting of Entomological Society of America. Nov. 14-17, 2004. Salt Lake City, UT.

Poster displays at professional meetings (Affiliation: Kansas State University, 25)

Huang, F. and Bh. Subramanyam. 2003. Efficacy of spinosad against several stored-product insects on hard white winter wheat. Annual Meeting of Entomological Society of America. Oct. 26-29, 2003. Cincinnati, OH.

Li, H., K.Y. Zhu, B. Oppert, R. Higgins, L. Buschman, and **F. Huang.** 2003. Molecular mechanisms of reduced proteinase activity in European corn borer larvae resistant to *Bacillus thuringiensis* endotoxins. Annual Meeting of Entomological Society of America. Oct. 26-29, 2003. Cincinnati, OH.

Li, H., J.G. Cabrera, B. Oppert, J. Ferré, R.A. Higgins, L.L. Buschman, K.Y. Zhu, and **F. Huang.** 2003. A resistance mechanism in the European corn borer (Lepidoptera: Crambidae) to *Bacillus thuringiensis* endotoxins. The 58th Annual Meeting of North Central Branch, Entomological Society of America. March 23-26, 2003. Madison, WI.

Li, H., B. Oppert, R.A. Higgins, **F. Huang**, L.L. Buschman, and K.Y. Zhu. 2002. Gut proteinase activities and Bt-toxin binding to brush border membrane vesicles of Bt-resistant and susceptible European corn borer. Annual Meeting of Entomological Society of America. Nov. 17-20, 2002. Fort Lauderdale, FL.

Huang, F. and Bh. Subramanyam. 2002. Effects of ultrasound on Indianmeal moth reproduction. The 8th International Working Conference on Stored Product Protection, July 22-26, 2002. York, UK.

Li, H., B. Oppert, R.A. Higgins, **F. Huang**, and L.L. Buschman. 2002. Differences in proteinase activities of Bt-resistant and -susceptible European corn borer (Lepidoptera: Crambidae).

The 57th Annual Meeting of North Central Branch, Entomological Society of America. March 24-27, 2002. East Lansing, MI.

Huang, F., Bh. Subramanyam, and R. Taylor. 2001 Reponses of house crickets and field crickets to ultrasound. Annual Meeting of Entomological Society of America. Dec. 9-12, 2001. San Diego, CA.

Subramanyam, Bh, **F. Huang,** and R.D. Taylor. 2001. Effects of a novel ultrasonic device on Indian meal moth reproduction. Annual Meeting of Entomological Society of America. Dec. 9-12, 2001. San Diego, CA.

Li, H., R.A. Higgins, B. Oppert, L.L. Buschman, **F. Huang,** and K.Y. Zhu1. 2001. Survival and damage of Dipel-resistant and -susceptible European corn borer on different parts of transgenic Bt and non-Bt corn plants Annual Meeting of Entomological Society of America. Dec. 9-12, 2001. San Diego, CA.

Li, H., B. Oppert, **F. Huang,** R.A. Higgins, L.L. Buschman, and K.Y. Zhu. 2001. Effects of individual *Bt* protoxins on larval survival and growth of Kansas Dipel-resistant and -susceptible European corn borer strains. The 56th Annual Meeting of North Central Branch, Entomological Society of America. March 25-28, 2001. Fort Collins, CO.

Huang, F., B. Subramanyam, and R. Taylor. 2000. Responses of the German cockroach to ultrasound-emitting devices. Annual Meeting of Entomological Society of America. Dec. 3-6, 2000. Montreal, Canada.

Subramanyam, Bh., and **F. Huang.** 2000. Effects of delayed mating on reproductive performance and longevity of the Indianmeal moth. Annual Meeting of Entomological Society of America. Dec. 3-6, 2000. Montreal, Canada.

Li, H., B. Oppert, **F. Huang,** R.A. Higgins, L.L. Buschman, and K.Y. Zhu. 2000. Susceptibility of the Kansas State Dipel-resistant European corn borer strain to individual Bt protoxins. Annual Meeting of Entomological Society of America. Dec. 3-6, 2000. Montreal, Canada.

Huang, F., R.A. Higgins, and L.L. Buschman. 2000. Fitness of Dipel-susceptible and Dipel resistant strains of European corn borer. The 55th Annual Meeting of North Central Branch, Entomological Society of America. March 26-29, 2000. Minneapolis, MN.

Huang, F., R.A. Higgins, and L.L. Buschman. 1999. Survival and feeding damage on different Bt corn hybrids by the Kansas Dipel-resistant and susceptible European corn borer. Annual Meeting of Entomological Society of America. Dec. 12-16, 1999. Atlanta, GA.

Huang, F., R.A. Higgins, and L.L. Buschman. 1999. Preliminary studies of susceptibility of the Kansas Dipel-resistant and susceptibility European corn borer strains to Bt Cry toxins. The 54th Annual Meeting of North Central Branch, Entomological Society of America. March

28-31, 1999. Des Moines, IA.

Huang F., R.A. Higgins, and L.L. Buschman. 1998. Survival of European corn borer colonies on different Bt corn hybrids. K-State Research and Extension Annual Conference. Manhattan, KS.

Huang, F., R.A. Higgins, and L.L. Buschman. 1997. Behavior of resistant and susceptible European corn borer (Lepidoptera: Pyralidae) exposed to Dipel in diet. Annual Meeting of Entomological Society of America. Dec. 13-18, 1997. Nashville, TN.

Higgins, R.A., **Huang, F.**, and L.L. Buschman. 1997. European corn borer resistance to Bt. K-State Research and Extension Annual Conference. Nov. 3-4, 1997. Manhattan, KS.

Huang, F., R.A. Higgins, and L.L. Buschman. 1997. A review of progress for Dipel resistance in laboratory colonies of European corn borer. The 52nd Annual Meeting of North Central Branch, Entomological Society of America. March 23-26, 1997. Columbus, OH.

Huang, F., R.A. Higgins, and L.L. Buschman. 1996. Initial assessment of inheritance of resistance to *Bacillus thuringiensis* in European corn borer, *Ostrinia nubilalis* Hübner (Lepidoptera: Pyralidae). Annual Meeting of Entomological Society of America. Dec. 8-12, 1996. Louisville, KY.

Huang, F., R.A. Higgins, and L.L. Buschman. 1996. Laboratory selection of resistance within European corn borer colonies to Dipel. Annual Meeting of the Kansas (Central States) Entomological Society. April, 1996. Lawrence, KS.

Huang, F., R.A. Higgins, and L.L. Buschman. 1996. European corn borer resistance studies using Dipel in the laboratory as the Bt source. The 51st Annual Meeting of North Central Branch, Entomological Society of America. March 24-27, 1996. Omaha, NE.

Huang, F., R.A. Higgins, and L.L. Buschman. 1995. Susceptibility and behavioral responses of different instars of European corn borer, *Ostrinia nubilalis* Hübner (Lepidoptera: Pyralidae), to Dipel in diet. Annual Meeting of Entomological Society of America. Dec. 17-21, 1995. Las Vegas, NV.

Huang, F., R.A. Higgins, and L.L. Buschman. 1995. European corn borer response to *Bacillus thuringiensis* applied as Dipel to diet. The 50th Annual Meeting of North Central Branch, Entomological Society of America. March 26-29, 1995. Lexington, KY.

1.5 Other scholarly or creative or other contributions to the profession

1.5.1 Membership in professional organizations

Entomological Society of America (1994- present)
Louisiana Agricultural Scientists Association (2004- present)

Overseas Chinese Entomologists Association (1998 - present)
Sigma Xi (1998-2001)
New York Academy of Science (1998-1999)
Entomological Society of China (1986-1993)
Ecological Society of China (1986-1993)

1.6 Other awards, lectureships, or prizes that show recognitions to the profession

2006 Southern region grantsmanship workshop travel award. LSU AgCenter.

1998 Second place; Linnaean Game Competition. The 53rd Annual Meeting of NCB, ESA, March 8-11, 1998. Sioux Falls, SD.

1997 R. C. Smith Ph.D. Award in Entomology as an outstanding doctoral graduate student. Department of Entomology, Kansas State University, Manhattan, KS.

1996 President's Prize, First Place for Student Competition. Annual Meeting of Entomological Society of America, Dec. 8-12, 1996. Louisville, KY..

1996 Prize for Student Competition. Annual Meeting of the Central States Entomological Society. April, 1996, Lawrence, KS.

1993 Netherlands Fellowship Program. The Minister for Development Cooperation of Netherlands (Awards including China-Netherlands round-trip airline fee plus other expenses for participating in a 3.5-month-long (March to July) International Course on Integrated Pest Management 110-d visit in the Netherlands).

1990 Second Prize for Scientific and Technological Progress---Insect community and integrated pest management (as a major participant), Sichuan Provincial Government, China.

1990 Excellent Thesis ---- Yield loss of rice damaged by brown plant planthopper. Chinese Society of Plant Protection, China.

1987 Second Prize for Scientific and Technological Progress---Agricultural mite ecology (as a major participant). Sichuan Provincial Government, China.

1.7 Research support / grant activities (Funded proposals, $1,074,321)

***State and federal competitive grants* ($391,946)**

2008-2011. Enhancing sustainable use of transgenic Bt-corn through resistance management for the mid-southern region of the United States. (As lead PI, B.R. Leonard, T-X Liu, S. Biles (TX), D.R. Cook, C. Daves (MS) co-PIs). $133, 900. *USDA-CSREES, Southern Region IPM programs.* Note: It is the only proposal ranked "high" in funding priority from both the

Technical and Relevant Panels out of 25 proposals submitted.

2006-2009. Characterizing *Bacillus thuringiensis* resistance in the sugarcane corn borer, *Diatraea Saccharalis* (F.). $105,100. *Louisiana Board of Regents' Research and Development Program.* (As the lead-PI, shared with B.R. Leonard). Note: The proposal is one of the 14 first-ranked proposals in a total of 131 proposals submitted in 2005.

2005-2007. Assessing "high dose/refuge strategy" for managing sugarcane borer, *Diatraea saccharalis* (F.), resistance to transgenic *Bt*-corn in the mid-southern region of the United States. $23,000. *National Sciences Foundation Center for IPM.* (As the lead-PI, shared with B.R. Leonard). Note: Nationally only a total of five proposals were selected for finding in 2005.

2003-2005. Development and implementation of a thermal death kinetic model for management of Indianmeal moth and red flour beetle in food processing environments. $ 40,000 (As a co-PI, shared with Bh. Subramanyam (lead-PI) and S. Alavi (KSU). *USDA NC-213.*

2003. FQPA and management of insects in stored wheat: perceptions and implementation of OP alternatives by Kansas farmers. $ 39,946 (As a co-PI, shared with Bh. Subramanyam (lead-PI). *US EPA.*

2001. Effects of a novel ultrasonic emitter on the mating behavior and reproductive performance of the Indianmeal moth-a common pest associated with grains and processed food products. $50,000. (As a co-PI, shared with Bh. Subramanyam (lead-PI), KSU). *USDA- MAFMA.*

***Commodity, industry, and other grants at LSU AgCenter* ($227,375)**

2008. Emerging insect pest problems in field corn and grain sorghum. $19,500. *Louisiana Soybean and Grain Research and Promotion Board.* (As the lead-PI, shared with B.R. Leonard).

2008. Refining field corn and grain sorghum insect pest management strategies. $17,500. *Louisiana Soybean and Grain Research and Promotion Board.* (As a co-PI, shared with B.R. Leonard [the lead-PI]).

2008. Evaluation of Avicta against soil insects in field corn. $2,000. *Syngenta Seeds Inc.* Golden Valley, MI. (As the PI).

2007. Susceptibility of a Cry-resistant colony of sugarcane borer to insecticidal proteins. $12,500. *Dow AgroSciences LLC*, Indianapolis, IN. (As the PI).

2007. Susceptibility of a Cry1Ab-resistant colony of sugarcane borer to two new Bt proteins. $5,750. *Monsanto Company.* St. Louis, MO. (As the PI).

2007. Evaluation of MIR162 ear-stage corn against fall armyworm and sugarcane borer. $16,500.

Syngenta Seeds Inc. Golden Valley, MI. (As the PI).

2007. Emerging insect pest problems in field corn and grain sorghum. $15,000. *Louisiana Soybean and Grain Research and Promotion Board.* (As the lead-PI, shared with B.R. Leonard).

2007. Refining field corn and grain sorghum insect pest management strategies. $14,500. *Louisiana Soybean and Grain Research and Promotion Board.* (As a co-PI, shared with B.R. Leonard [the lead-PI]).

2006-2008. Characterizing mechanisms of *Bacillus thuringiensis* resistance in sugarcane corn borer. $30,850. USDA-ARS Cooperative Agreement. (As the PI).

2006. Evaluation of a novel formulation of cruiser (a9765n) for control of yellow sugarcane aphids or chinch bugs in grain sorghum. $ 5,500. *Syngenta Seeds Inc.* Golden Valley, MI. (As the PI).

2006. Evaluation of Vip3A (MIR162) ear-stage corn for sugarcane borer protection. $ 10,500. *Syngenta Seeds Inc.* Golden Valley, MI. (As the PI).

2006. Emerging insect pest problems in field corn and grain sorghum. $15,000. Louisiana *Soybean and Grain Research and Promotion Board.* (As the lead-PI, shared with B.R. Leonard).

2006. Refining field corn and grain sorghum insect pest management strategies. $14,500. *Louisiana Soybean and Grain Research and Promotion Board.* (As a co-PI, shared with B.R. Leonard [the lead-PI]).

2005. Effect of corn seed treatments on seed emergence, plant stand, and grain yield. $5,000. *Syngenta Seeds Inc.* Golden Valley, MI. (As the PI).

2005. Broad Lepidopteran insect-protected GMO corn trails. $10,000. (As the PI). *Syngenta Seeds Inc.* Golden Valley, MI. (As the PI).

2005. Emerging insect pest problems in field corn and grain sorghum. $17,500. *Louisiana Soybean and Grain Research and Promotion Board.* (As the lead-PI, shared with B.R. Leonard).

2005. Refining field corn and grain sorghum insect pest management strategies. $15,275. *Louisiana Soybean and Grain Research and Promotion Board.* (As a co-PI, shared with B.R. Leonard [the lead-PI]).

***Commodity and industry grants at Kansas State University* ($455,000)**

2003-2005. Improved protocols for evaluating efficacy of ultrasound technology against economically important urban pests. $ 180,000 (As a co-PI, shared with Bh. Subramanyam (lead-PI) and L. Zurek, Kansas State University). *Applica*, Miami Lakes, FL.

2003. Evaluation of ultrasonic devises for management of stored product moths and urban arthropods. $120,000. (As a co-PI, shared with Bh. Subramanyam (lead-PI), A. Broce, and M. Dryden, Kansas State University). *Koston Technologies*. Irvine, CA.

2003. Evaluation of spinosad for protection of stored corn from insect attack and damage. $30,000. (As a co-PI, shared with Bh. Subramanyam (lead-PI) and R. Roesli, Kansas State University). *Kansas Corn Commission.*

2002. Characterization of spinosad as a stored grain and stored product protectant. $105,000. (As a co-PI, shared with Bh. Subramanyam (lead-PI) and M. Toews, KSU). *Dow Agrosciences*, Indianapolis, IN.

2001. Efficacy of Actellic® on sunflower seeds. $20,000. (As a co-PI, shared with Bh. Subramanyam (lead-PI) and M. Toews, KSU). *Agriliance LLC*, St. Paul, MN

Funded proposals at Nanjing Agricultural University, China

1992. Migration mechanisms of migratory insects. (As a co-PI, shared with G. Li (lead-PI), Chinese Academy of Agricultural Sciences (CAAS), Beijing; D. Luo, CAAS; X. Cheng, NAU, and Z. Zhang, China National Rice Research Institute, Hongzhou, China). *Key Projects of China National Science Foundation.*

1991. Physiological and biochemical mechanisms of wing differentiation of migratory insects. (Shared with X. Cheng and G. Xu, NAU). *China National Science Foundation.*

1991. Estimation of yield losses caused by whitebacked planthopper on rice. (As a co-PI, shared with J. Ding (lead-PI) and L. Qin, NAU). *China National Science Foundation.*

1991. Mid-term forecasting for brown planthopper. (as a co-PI, shared with X. Cheng (lead-PI), J. Ding, L. Qin, and G. Xu, NAU). *Key Projects of China National Eighth Five-Year Program.*

Pending Proposals

Rejected proposals

2007. Understanding evolution of resistance to *Bacillus thuringiensis*-corn in sugarcane borer: from field ecology to molecular mechanisms. $898,879 requested. NSF CAREER Program. (Ratings from 5 reviewers: 3 good, 1 very good, 1 excellent). (As the PI).

2006. Sustaining transgenic Bt-corn efficacy through resistance management for the mid-southern region of the United States. $245,440 requested. USDA-CSREES, Southern Region Sustainable Agriculture Research and Education Program. (As lead PI, co-PIs: B.R. Leonard, R. Parker (TX), D. Parker (MS), G. Lorenz (AR), and J. Glaser (EPA)).

2004. Developing a monitoring system for management insect resistance to transgenic Bt corn in the southern region. (As the lead PI; B.R. Leonard, co-PI). $ 16,000 requested (pre-proposal rejected). USDA-CSREES, *Southern Region Southern Region Sustainable Agriculture Research and Education Program.*

2002. Management of economically important stored product moth pests using alternatives to conventional pesticides. (As a co-PI; Bh. Subramanyam, the lead-PI). $118,810 requested. *USDA PMAP.*

1.8 Thesis/Dissertations Directed: (1).

As major advisor at LSU

Xiaoyi Wu, Ph.D. 2005 -

Yulong Yang, Ph D. 2006 -

Jin Liu, Ph. D. 2006-

As member of graduate committee at LSU

Jason C. Hamm, MS. 2004 --

Rhett H. Gable, MS. (graduated in 2006)

Nan Jiang, PhD (2005 - Dean's Representative)

Ashok Badigannavar, PhD (2008- Dean's Representative)

Postdoctoral/Visiting Scientists supervised at LSU

Dr. Bisong Yue (the Director of the College of Life Sciences, Sichuan University, Chengdu, China), Visiting Professor (August, 2006 -- January 2007).

Mukti Ghimire, Research Associate (February 1, 2008 -).

As a major supervisor at Nanjing Agricultural University, Nanjing China.

Guided 20-30 undergraduate theses for > 90 undergraduate students major in Entomology and Plant Protection (1987 - 1992).

1.9 Major areas of research interest

Biology, ecology, and management of corn, small grains, and stored-product insects
Efficacy and risk assessment of transgenic crops for insect pest management
Mechanism, monitoring and management of insecticide and Bt resistance

1.10 Outreach – field days, trade-shows, direct clientele contact

14 April-05 May 2008. Visiting wheat fields with two other LSU AgCenter professors and Dwayne Conlon (Ag-consultant) to check Hessian fly damage in central Louisiana.

10 October, 2007. Louisiana Wheat Management Meeting. Alexandria, LA.

23 August, 2007. Dean Lee Research Station Field Day. Alexandria, LA.

06 September 2006. Helped in identification of sorghum stalk borers in sorghum fields at LSU Rice Research Station in Crowley, LA.

14 June, 2006. Attended LSU AgCenter's Northeast Research Station Crop Production and Pest Management Field Day.

09 May 2006. Helped Keith Normand (County Agent, St. Landry Parish) in identification of corn borer species.

July - December, 2006. Cooperated with several AgCenter faculty, county agents, and students conducted field surveys of a new identified grain pest, *Moodna bisinuella*, across central and northeast Louisiana.

August - December, 2006. Attended the LSU AgCenter Annual Conference, ACE Meeting, field days in St. Joseph and Alexandria, LA.

August - October, 2005. Cooperated with several AgCenter faculty, county agents, and agricultural consultants, conducted field surveys of a new identified grain pest, *Moodna bisinuella*, across central and northeast LA.

August - September, 2005. Attended the 2005 AgCenter ACE Meeting; field days in St. Joseph and Alexandria, LA.

August, 2004. Attended the Combined ACE Meeting, Soybean, Feed Grain, and Plant Improvement ACE Groups Macon Ridge Station, Winnsboro, LA.

10 August 2004. Helped Marc Grabert (BASF) in identification of corn pest problems in his experimental fields in Pointe Coupee Parish, LA.

11 August 2004. Field demonstrations of corn borer sampling. East Carroll Parish, LA.

March-December, 2004. Visited Northeast, Macon Ridge, Dean Lee, St. Gabriel and Rice Stations to acquaint myself with faculty and staff and their research and extension activities in these AgCenter's Stations, at the same time, participated in several other on-station activities such as field days.

August 2004. Helped in identification of a "new" corn pest, *Moodna bisinuella* Hampson

(Lepidoptera: Pyralidae), insects were collected by Dr. Grady Coburn.

1.11. Cooperative/collaborative efforts with other faculty

Within the Department of Entomology, LSU Agricultural Center and the main campus

Risk assessment, monitoring, and management of corn borer resistance to transgenic Bt corn (Roger Leonard, Steven Moore, Jack Baldwin, Don Cook, Donna Lee, Jin Wang)

Ecology and management of corn and grain sorghum arthropod pests (Roger Leonard, Jack Baldwin, Thomas Reagan, Mike Stout, Steven Moore, Don Cook)

Biology and ecology of *Moodna hisinuella*, a new state record and a potential pest of corn and grain sorghum in Louisiana (Roger Leonard, Abner Hammond, Steven Moore, Christopher Carlton, Donna Lee)

Characterizing mechanisms of *Bacillus thuringiensis* resistance in sugarcane borer (James Ottea, Claudia Husseneder, Rogers Leonard)

Evaluation of survival and plant damage of stack borers on different grain sorghum varieties (Dustin Harrell, Henry Mascagni Jr., Rogers Leonard).

With faculty from other institutions in the USA

Risk assessment, monitoring, management of corn borer resistance to transgenic Bt corn (David Andow, University of Minnesota; Roy Parker, Charles Chilcut, and Stephen Biles, University of Texas A&M; Larry Buschman, Kansas State University; Brenda Oppert, USDA-ARS; Don Cook and Chris Daves, Mississippi State University)

Characterizing mechanisms of *Bacillus thuringiensis* resistance in sugarcane borer (Yu-Cheng Zhu, USDA-ARS)

Management of insect pests of stored-wheat, –corn, and -sorghum (Bhadriraju Subramanyam, Kansas State University)

Identifying biotypes of Louisiana populations of Hessian fly (Ming-shun Chen, USDA-ARS)

Geographical susceptibility of fall armyworm populations to *Bacillus thuringiensis* toxins (Carlos Blanco, USDA-ARS)

International collaborations

Characterizing mechanisms of *Bacillus thuringiensis* resistance in sugarcane corn borer (Juan Ferré, a Professor and the Head of the Department of Genetics at the University of València in Spain. Dr. Ferré is recognized worldwide for his work in Bt binding studies. David

Heckle, a Professor and the Director of the Department of Entomology at the Max Planck Institute for Chemical Ecology in Germany. Dr. Heckle is recognized worldwide for his work in genetics of Bt resistance evolution).

Assessing novel Cry toxins against Cry1Ab susceptible- and resistant sugarcane borer (Dr Alejandra Bravo, National Autonomous University of Mexico, Mexico)

1.12. Community involvement (as it relates to the AgCenter mission)

2006, 2007, 2008 AgMagic participant

1.13. Overall program impact

Field corn and small grains represent substantial acreage and contribute significant crop value to agriculture in Louisiana. Compared to other regions of the United States, the weather conditions and complex agricultural ecosystems in Louisiana create a unique environment that results in development of significant pest infestations of corn and small grain crops. Two technological revolutions in management of field crop insect pests are responsible for major agro-ecological changes in modern agricultural systems in the United States, transgenic plants and seed treatments. My research efforts at the LSU AgCenter have concentrated on the use of these two technologies in managing corn and small grain insect pests. After joining the LSU AgCenter, I, along with several collaborators, have built a strong research program that has received national and international recognition in management of small grain pests and Bt resistance. Specifically, my research program combines four main aspects:

1) Risk assessment, monitoring, and management of corn borer resistance to transgenic Bt corn to ensure the long-term success of Bt corn technology as an effective IPM tool;
2) Assessing new Bt toxins and transgenic corn lines with novel Bt genes for managing Louisiana lepidopteran corn pests;
3) Evaluating novel seed treatment technologies for managing soil and seedling insect pests of corn and grain sorghum;
4) Defining field biology and population ecology of stalk borers and *Moodna bisinuella,* a new state record and a potential pest of corn and grain sorghum in Louisiana.

Transgenic Bt corn has become the primary tool for managing lepidopteran corn pests in Louisiana. Conservation of Bt susceptibility in insects has become one of the most active research areas in modern agriculture. One of the key factors for a successful resistance management plan is to have a cost-effective monitoring system that can provide information on early shifts in Bt resistance allele frequencies. Therefore, proactive measures for managing resistance can be implemented before a field control failure occurs. Developing such a monitoring program has proven to be challenging.

We have developed a cost-effective F_2/F_1 screening method that can identify rare Bt resistance alleles in field corn borer populations. Compared to the procedures established previously, our

F_2/F_1 screening method considerably reduced the involved cost and labor. A landmark discovery of my research was the detection of a major Bt resistance allele in a Louisiana field population of sugarcane borer. This was the first major resistance allele to commercial Bt corn hybrids discovered in any corn stalk borer species worldwide. Based on our results, the NC-205 committee, a multi-state research group working on corn stalk borer management, passed a special motion regarding Bt resistance in sugarcane borer in 2006. A letter regarding to this motion was sent to the US EPA to inform the EPA of a potential issue. Because of our timely efforts at LSU AgCenter, the sugarcane borer has been officially listed as a target insect pest of transgenic Bt corn commercialized for managing corn stalk borers in the United States. With our F_2/F_1 screening method, a coordinated monitoring program has been developed and implemented in Louisiana since 2004. This monitoring program has and will continue to help insure the continued success of Bt corn technology in the state. In addition, data generated from this research has become an integral part of an advanced graduate course, which was recently offered in the Department of Entomology.

Following our procedures, a similar Bt resistance monitoring program is being developed in Texas and Mississippi. The F_2/F_1 screening method has also been adopted or modified by other scientists in the United States and other countries for detecting Bt resistance in other insect species. The resistant sugarcane borer strain we established has been used for research in several other laboratories in the United States, Germany, and Spain for exploring mechanisms of Bt resistance in corn stalk borers. Two cooperative research projects led by the LSU AgCenter for studying the mechanisms and management of Bt resistance in corn borer have been established within several institutions in the United States, Spain, German, and Mexico.

In cooperation with several industries and universities, I have evaluated 10 novel Bt toxins against our Cry1Ab resistant sugarcane borer and identified 3 toxins that did not show a cross-resistance with the Cry1Ab resistant sugarcane borer. I have also evaluated several corn lines containing novel Bt genes for controlling lepidopteran corn pests in Louisiana. These studies provide industry with useful information in developing new generations of Bt corn varieties that may overcome Cry1Ab resistance.

The widespread adoption of reduced tillage practices has increased the probability and severity of soil insect problems of field corn and grain sorghum in Louisiana. Seed treatments have become a common strategy for managing soil and seedling pests during the early season because this method offers several advantages over other types of application. Since 2004, I, along with collaborators, have evaluated several novel seed treatment products for managing soil and seedling insects of corn and grain sorghum. This research provides important information for the chemical industry in developing new products to manage corn and grain sorghum insect pests.

We have documented the population structure, distribution, and overwintering of stalk borers on corn and grain sorghum in Louisiana. Our data indicates that the sugarcane borer has been the dominant stalk borer species on corn and grain sorghum across the states. During 2005 and 2006, I documented the overwintering of sugarcane borer in north LA. The finding of overwintering corn borers in north LA provides scientific evidence to support the fall control strategy recommended by the LA Cooperative Extension Service for management of stalk borers. Information generated

from this study has been incorporated in updating management recommendations for corn borers in Louisiana. In 2004 and 2005, I, along with collaborators, identified a new lepidopteran pest, *Moodna bisinuella*, in corn and grain sorghum. This was the first documentation of this pest in Louisiana. A three-year field survey indicates that this pest represents a potential threat to these two crops in the state. A research project for study on the biology of this insect has been initiated. Information generated from this study should provide essential information for developing management strategies.

As of October 14, 2008, my publications have been cited at least 660 times in scientific papers, articles, or newsletters. The accomplishments I made since I joined the LSU should provide a solid foundation for the continued success of my research at the LSU AgCenter.

2 SERVICE ACTIVITIES

2.2 Recruitment of students and faculty

Department of Entomology

2005. Xiaoyi Wu, PhD student
2006. Yunlong Yang, PhD student
2006. Jin Liu, PhD student
2007. Dr. Jeff Davis, Soybean IPM Assistant Professor

2.3 University service (department, college, university, and faculty senate committee)

Department committee assignments

Seminar Committee (7/1/08 – present)
Student Admissions Committee (7/1/06-6/31/08, Chair 7/1/07-6/31/08)
Graduate Coordination Committee (7/1/07-present)
Search Committee for the soybean IPM position (2007)
Student Awards Committee (7/1/05-6/31/07, Chair 7/1/06-6/31/07)
Courses and Curriculum Committee (7/1/04-6/31/06)

University and AgCenter Experiment Station Committee

LSU AgCenter Wheat Variety Release Committee (2004, 2005, 2006).

2.4 Professional service

Judge for the Ph.D. oral presentation competitions at the ESA Annual Meeting, Dec. 9-12, 2007.

San Diego, CA.

Proposal reviewer for China National Foundation for Natural Sciences (2007-present)

Executive Board member of the Overseas Chinese Entomologists Association (2005- present).

Louisiana Representative in the Technical Committee of the USDA NC-205 Multi-state Research Project, Ecology and Management of European Corn Borer and Other Stalk-Boring Lepidoptera (2005-2010).

Vice President of the Overseas Chinese Entomologists Association (2005-2006).

Judge for the MS poster competition at the ESA-SEB meeting (2005).

Expert Panel member for The International Conference of the Asia-Pacific Rice Integrated Pest Management. July -August, 1988. Shanghai, Suzhu, and Hongzhu, China.

Reviewed manuscripts for the following journals and books:

Journal of Economic Entomology (USA)
Pesticide Biochemistry and Physiology (International)
Entomologia Experimentalis et Applicata (International, Netherland)
Biopesticides International (International, India)
Insect Science (International, China)
Pest Management Science (International)
Annals of the Entomological Society of America (USA)
Crop Protection (International)
SABRAO Journal (Philippines)
Acta Entomol. Sinica (China)
Plant Protection (Beijing, China)
Environmental Entomology (USA)
Encyclopedia of Pest Management (Editor: David Pimentel, USA)
Journal of Nanjing Agricultural University (Nanjing, China)
Entomological Knowledge (Beijing, China)

2.5 Other external service

Presentations/demonstrations to growers, consultants, and extension personnel

26 March 2008. Syngenta Product Meeting. Baton Rouge, LA.

03 March 2008. Monsanto update on Bt corn traits. Jacksonville, FL.

6-8 February, 2008. PowerPoint presentation: Bt corn traits in Louisiana and their associated

codes. Louisiana Technology and Management Conference. Alexandria, LA.

02 March 2006. Syngenta Product Meeting. Alexandria, LA.

16 February 2006. PowerPoint presentation: Corn and grain sorghum insect update and management recommendations. Louisiana Technology and Management Conference. Alexandria, LA.

17 February 2005. PowerPoint presentation: Corn and grain sorghum insect update and management recommendations. Louisiana Technology and Management Conference. Alexandria, LA.

Extension publications at LSU AgCenter

Liu, T.X, **F. Huang**, and B.R. Leonard. 2008. Moodna bisinuella & pink cornworm could become destructive pests to the corn industry in southern United States. Corn Pest Alert. TX AgriLife.

Baldwin, J. B.R. Leonard, and **F. Huang**. 2008. Managing corn and grain sorghum insect pests. LSU AgCenter publication 2284. 16 pp. (updated).

Baldwin, J. B.R. Leonard, and **F. Huang**. 2007. Managing corn and grain sorghum insect pests. LSU AgCenter publication 2284. 16 pp. (updated).

Baldwin, J. F. **Huang**, and B.R. Leonard. 2006. Corn borer pests in Louisiana corn. LSU AgCenter publication 2947. 5 pp.

Baldwin, J., B.R. Leonard, and **F. Huang**. 2006. Managing corn and grain sorghum insect pests. LSU AgCenter publication 2284. 16 pp (updated).

Baldwin, J. B.R. Leonard, and **F. Huang**. 2005. Chinch bugs as a pest of corn and grain sorghum. LSU AgCenter publication 2496.

Baldwin, J. B.R. Leonard, and **F. Huang**. 2005. Managing corn and grain sorghum insect pests. LSU AgCenter publication 2284.

3 TEACHING

3.1 Documentation of teaching activities and effectiveness

3.1.1 Teaching Evaluations

- 2008 Spring, ENTM 7008/001: 4.04/5, college average: 4.01/5

  Student comments: Although the questionnaire doesn't match with the course curriculum,

this is a very useful course for improving our general understanding of agriculture and crops in this country. It is very useful for our international students. Dr. Huang is one of the brightest young scientists and teachers in our department. This course serves a vital need in helping not only international but non-traditional students understand the importance of agriculture in the U.S. It is also helpful in giving a background of all economically important pests of several crops even some that do not exist in LA. This class helped me understand U.S. agriculture more. Dr. Huang is very passionate about teaching. This class was very clear on what was expected & assignments broaden the overall intellectual knowledge of the class. Dr. Huang is very passionate about teaching the importance of agriculture & pest management needs more teachers who are as passionate & care about students as much as he & Dr. Reagan do.

- 2007 Spring, ENTM 7008/001: 4.45/5, college average: 4.09/5

  Student comments: Course was very valuable in helping to find ways to get information. Assignments were straight forward but challenging and definitely useful.

- 2006 Fall, ENTM 7006: 4.08/5, college average: 4.03/5

3.1.2 Teaching history

- ***Courses instructed, co-instructed, or coordinated at LSU***

  2008 Fall, Entomology 7006. *Advanced Insect Pest Management*. (Guest lectures from T.E. Reagan, S. Johnson, J. Ottea, M. Stout, L. Foil, D. Ring, B.R. Leonard)

  2008 Summer, Entomology 8900. Advanced Insect Pest Management Technology (Research Problems, 1 student).

  2008 Spring, Entomology 7008. *U.S. Agriculture and Major Agricultural Arthropod Pests* (Special topics, 4 students).

  2007 Spring, Entomology 7008. *U.S. Agriculture and Major Agricultural Arthropod Pests* (Special topics, 4 students).

  2006 Fall, Entomology 2006. *Advanced Insect Pest Management* (5 students and 3 auditors, (Guest lectures from T.E. Reagan, S. Johnson, J. Ottea, M. Stout, L. Foil, D. Ring, B.R. Leonard).

  2006 Spring, Entomology 7008. *U.S. Agriculture and Major Agricultural Arthropod Pests* (Special topics, 1 student).

  2005 Summer, Entomology 7008. *Genetic Modified Crops* (Special topics), summer, 2005 (1 student). The course has now become a part of ENTM 7006, Advanced Insect

Pest Management.

- ***Courses instructed at Nanjing Agricultural University in Nanjing, China (1986-1993)***

Undergraduate courses (1986-1993): Agricultural Entomology (60 hrs/year), Integrated Pest Management (60 hr/year), Plant Protection (30 hr/year).
Undergraduate and graduate course (1986-1993): Sampling Techniques for Insect Populations (40 hr /year).

- ***Courses instructed at Nanjing Professional High School, Nanjing, China***

Ornamental Entomology, Nanjing Maqun Professional High School (1988-1989, 50 hr/year).

- ***New courses developed***

2006. Entomology 7006, *Advanced Insect Pest Management*. Graduate-level (3 credit hs).
2006. Entomology 7008 (Special topics). *U.S. Agriculture and Major Arthropod Pests* (1-3 credit hs)

- ***Graduate committees***

Graduate committees chaired: 3 (Xiaoyi Wu, 2005 -; Yunlong Yang, 2006-; Jin Liu, 2006-). Xiaoyi Wu passed his Ph.D. general examination in January 2008, and scheduled to graduate fall, 2008.

Service on other graduate committees: Member of graduate committee (2 students: Jason C. Hamm, MS. 2004 – and Rhett H. Gable, MS), Dean's representative (2 student: Nan Jiang, Department of Biology; Ashok Badigannavar, Dept of Plant, Environmental & Soil Sciences).

3.2 Listing of publications concerning instruction

3.2.1 Text book

Chen, J., X. Cheng, J. Cheng, and **F. Huang** (eds). 1990. Integrated Pest Management. Agricultural Press. Beijing, China. 270 pp. (In Chinese, the only national IPM text book approved by the China National Agricultural Text Book Committee. (Huang contributed two of the seven chapters of the book: Chapter 4. System analysis and insect pest management; Chapter 6. Integrated insect pest management of major field crops in China).

3.4 Participation in professional meetings, symposia, workshops, and conferences on teaching and local instructional activities

2008. LSU College of Agriculture, Dean's Teaching Conference. Baton Rouge, LA, January 11, 2008. (Participated).

2007. LSU College of Agriculture, Dean's Teaching Conference. Baton Rouge, LA, January 9, 2007. (Participated).