

CURRICULUM VITAE

NAME: Ping Wang
DEPARTMENT: Entomology
TITLE: Professor
CAMPUS ADDRESS: Barton Laboratory
Department of Entomology
Cornell University
Cornell AgriTech
15 Castle Creek Drive
Geneva, NY 14456
PHONE: 315-787-2348
E-MAIL: pw15@cornell.edu
Lab Website: <https://blogs.cornell.edu/wang>

PROFESSIONAL EXPERIENCE

Year	Experience
2001 - present:	Assistant Professor (2001-2007), Associate Professor (2007-2017) and Professor (present), Department of Entomology, Cornell University
1998 - 2001:	Postdoctoral Associate (1998-2000) and Research Associate (2000-2001), Boyce Thompson Institute for Plant Research at Cornell University
1996 -1997:	Postdoctoral Fellow, National Institute of Allergy and Infectious Diseases, National Institutes of Health
1991 - 1996:	Graduate Research Assistant, Cornell University
1989 - 1991:	Visiting Scientist, Boyce Thompson Institute for Plant Research at Cornell University
1986 - 1989:	Assistant Research Scientist, Chinese Academy of Sciences
1983 - 1986:	Graduate Research Assistant, Fudan University, China

EDUCATION

Year	Degree	Institution
1996	Ph.D.	Cornell University
1986	M.S.	Fudan University, China
1983	B.S.	Fudan University, China

PRIMARY DEPARTMENTAL PROGRAM AREA

Insect physiology and biochemistry

AREAS OF EXPERTISE

Insect physiology, biochemistry and molecular biology; molecular interaction of insects with microbial pathogens and host plants; insect genomics and proteomics; molecular diagnostics of invasive insects; insect cell culture

FORMAL RESPONSIBILITIES

Research 75%
 Extension 10%
 Administration 15%

GRANT SUPPORT

USDA AFRI Foundational Program, NYG-621598 (**Wang**)04/2019 - 03/2022

Functional understanding of Bt toxin receptors, the critical determinants of specificity and toxicity of Bt toxins in insect pests	\$454,996
Industry Fund (Wang) Evaluating bioactivity of insecticidal proteins against cabbage Looper, <i>Trichoplusia ni</i>	11/2018 - 11/2019 \$23,220
1. Industry Fund (Wang) Evaluating bioactivity of insecticidal proteins against cabbage looper, <i>Trichoplusia ni</i>	11/2018 - 10/2019 \$20,000
2. USDA AFRI Foundational Program, NYG-621599 (Wang & Fei) Understanding the molecular mechanism of insect resistance to Bt toxin Cry2Ab	01/2016 - 12/2019 \$499,900
3. USDA Hatch Project, NYG-621452 (Wang) Genetic manipulation in cabbage looper for identification of target sites for pest control	10/2015 - 09/2018 \$90,000
4. USDA AFRI Foundational Program, 73421/A001 (Blissard, Wang & Fei) Modifying insect midgut responses to pathogen attack	02/2015 - 01/2019 \$454,996 (Wang: \$59,423)
5. USDA NIFA BRAG, NYG-621575 (Wang) Molecular genetic basis of insect resistance to Bt-crops	09/2012 - 08/2016 \$499,997
6. Industry Funds (Wang) Product testing agreements on mode of action of Bt	03/2011 - 04/2016 \$190,000
7. Federal Formula Funds, NYG-621405 (Wang & Shelton) Genetic analysis of cabbage looper populations to understand migration of the pest to New York	10/2012 - 09/2015 \$60,000
8. USDA NIFA AFRI, NYW-2010-05118 (Meihls, Wang , Jander)	09/2011-08/2013

Molecular mechanisms of resistance to <i>Bacillus thuringiensis</i> cry3bb1 toxin in <i>Diabrotica virgifera virgifera</i> (western corn rootworm)	\$130,000
9. USDA NRICGP, NYG-621540 (Wang) Understanding a novel mechanism of Bt Resistance in the cabbage looper, <i>Trichoplusia ni</i>	4/1/08 - 3/31/13 \$399,977
10. USDA CSREES PMAP 34381 (Shelton, Chen, Hallett, Wang , Kikkert & Hoepting) Providing the research and education needs for integrated pest management of swede midge, a new invasive threat to American Agriculture	8/01/08 - 7/31/10 \$251,022
11. Federal Formula Funds Initiative Program (Shelton & Wang) Managing swede midge through research-based knowledge and an outreach program	10/1/08 - 9/30/11 \$18,000
12. 13. NY Turfgrass Association, 54889 (Wang & Peck) NYS Turfgrass Association, Environmental Stewardship Fund Development of molecular diagnostic techniques for identification of invasive pest crane flies in turfgrass	2/01/07 – 1/31/09 \$36,300
13. 14. NYS Dept. of Agriculture & Markets, C200134 (Shelton & Wang) Survey of swede midge in New York State and surrounding states	6/01/07 - 12/31/07 \$12,000
14. 15. USDA Federal Formula Funds, NYG 621416 (Wang & Reissig) Understanding the genetic structure of obliquebanded leafroller populations in apple production areas in New York State	10/01/06 – 9/30/09 \$60,000
15. National Science Foundation, NSF IOB 0543164 (Wang) Study of protein constituents of Lepidoptera peritrophic membranes	02/15/06 - 1/31/10 \$480,000
16. USDA PMAP, USDA 2005-34381-16006 (Shelton, Hoepting, Kikkert, Wang & Zhao) Development and implementation of best management practices to reduce the impact in New York of the invasive insect pest, the swede midge	09/01/05 - 8/31/07 \$213,618
17. NYS Dept. of Agriculture & Markets, C200134 (Shelton & Wang) Survey for swede midge in New York State and surrounding states	5/01/05 - 12/31/05 \$20,000
18. USDA Federal Formula Hatch, NYG 621510 (Wang) Molecular basis of physiological and defense mechanisms in the insect midgut	10/01/01 - 9/30/13 \$45,000

19. 20. USDA NRICGP, NYR-1999-02648 (Granados & Wang)
Engineering midgut chitin-binding peptides for insect control

12/01/99 - 11/30/03
\$200,000

PUBLICATIONS

PEER REVIEWED JOURNAL PAPERS

- Yang, X., Chen, W., Song, X., Ma, X., Cotto-Rivera, R. O., Kain, W., Chu, H., Chen, Y.-R., Fei, Z. and Wang, P. (2019) Mutation of ABC transporter ABCA2 confers resistance to Bt toxin Cry2Ab in *Trichoplusia ni*. *Insect Biochemistry and Molecular Biology* (in press).
- Guo, W., Kain, W., and Wang, P. (2019) Effects of disruption of the peritrophic membrane on larval susceptibility to Bt toxin Cry1Ac in cabbage loopers. *Journal of Insect Physiology*, <https://doi.org/10.1016/j.jinsphys.2019.103897>.
- Shrestha, A., Bao, K., Chen, W., Wang, P., Fei, Z. and Blissard G. W. (2019) Transcriptional responses of the *Trichoplusia ni* midgut to oral infection by the baculovirus *Autographa californica* multiple nucleopolyhedrovirus. *Journal of virology*, JVI. 00353-19
- Zhao, A., Li, Y., Leng, C., Wang, P. and Li, Y. (2019) Inhibitory effect of protease inhibitors on larval midgut protease activities and the performance of *Plutella xylostella* (Lepidoptera: plutellidae). *Frontiers in Physiology*, 9:1963.
- Chen, W., Yang, X., Tetreau, G., Song, X., Coutu, C., Hegedus, D., Blissard, G., Fei, Z. and Wang, P. (2019) A high-quality chromosome-level genome assembly of a generalist herbivore, *Trichoplusia ni*. *Molecular Ecology Resources*, 19: 485-496
- Wang, S., Kain, W. and Wang, P. (2018) *Bacillus thuringiensis* Cry1A toxins exert toxicity by multiple pathways in insects. *Insect Biochemistry and Molecular Biology*, 102: 59-66.
- Leetachewa, S., Khomkhum, N., Sakdee, S., Wang, P. and Moonsom, S. (2018) Enhancement of insect susceptibility and larvicidal efficacy of Cry4Ba toxin by calcofluor. *Parasites & vectors*, 11: 515.
- Shrestha, A., Bao, K., Chen, Y.-R., Chen, W., Wang, P., Fei, Z., Blissard, G. W. (2018) Global analysis of baculovirus AcMNPV gene expression in the midgut of the lepidopteran host, *Trichoplusia ni*. *Journal of virology*, 92: e01277-18.
- Gomis-Cebolla, J., Wang, Y., Quan, Y., He, K., Walsh, T., James, J., Downes, S., Kain, W., Wang, P., Leonard, K., Morgan, T., Oppert, B. and Ferré, J. (2018) Analysis of cross-resistance to Vip3 proteins in eight insect colonies, from four insect species, selected for resistance to *Bacillus thuringiensis* insecticidal proteins. *Journal of Invertebrate Pathology*, 155: 64-70.
- Tian, J.-C., Wang, X.-P., Chen, Y., Romeis, J., Naranjo, S. E., Hellmich, R. L., Wang, P. and Shelton, A. M. (2018) Bt cotton producing Cry1Ac and Cry2Ab does not harm two parasitoids, *Cotesia marginiventris* and *Copidosoma floridanum*. *Scientific Reports*, 8: 307. doi: 10.1038/s41598-017-18620-3.

- Li, Y.-P., Gao, K., Yuan, F., Wang, P. and Yuan, X.-Q. (2017) Molecular systematics of the butterfly tribe Baorini (Lepidoptera: HesperIIDae) from China. *Journal of the Kansas Entomological Society* 90: 100-108.
- Ma, X., He, W., Wang, P. and You, M. (2017) Cell lines from diamondback moth exhibiting differential susceptibility to baculovirus infection and expressing midgut genes. Submitted to *Insect Science*, doi: 10.1111/1744-7917.12533.
- Ma, X., He, W., Chen, W., Xue, X., Qi, W., Zou, M., You, Y., Baxter, S. W., Wang, P. and You, M. (2017) Structure and expression of sulfatase and sulfatase modifying factor genes in the diamondback moth, *Plutella xylostella* (L.). *Insect Science*, doi: 10.1111/1744-7917.12487.
- Tetreau, G., Wang, R. and Wang, P. (2017) Fitness of Bt-resistant cabbage loopers on Bt-cotton plants. *Plant Biotechnology Journal* 15: 1322-1330.
- Stanton, R., Hykollari, A., Eckmair, B., Malzl, D., Dragosits, M., Palmberger, D., Wang, P., Wilson, I. B. H. and Paschinger, K. (2017) The underestimated N-glycomes of lepidopteran species. *Biochimica et Biophysica Acta (BBA) – General Subjects*, 1861: 699-714.
- Kanost, M. et al. (114 authors listed in alphabetic order by last names, except the first and last authors who were the PIs of project) (2016) Multifaceted biological insights from a draft genome sequence of the tobacco hornworm moth, *Manduca sexta*. *Insect Biochemistry and Molecular Biology*, 76: 118-147.
- Badran, A. H., Guzov, V. M., Huai, Q., Kemp, M. M., Vishwanath, P., Kain, W., Nance, A. M., Evdokimov, A., Moshiri, F., Turner, K. H., Wang, P., Malvar, T. and Liu, D. R. (2016) Continuous evolution of *B. thuringiensis* toxins overcomes insect Bt resistance. *Nature* 533: 58-63.
- Wang, R., Tetreau, G. and Wang, P. (2016) Effect of crop plants on fitness costs associated with resistance to *Bacillus thuringiensis* toxins Cry1Ac and Cry2Ab in cabbage loopers. *Scientific Reports* 6: 20959.
- Song, X., Kain, W., Cassidy, D. and Wang, P. (2015) Resistance to *Bacillus thuringiensis* toxin Cry2Ab in *Trichoplusia ni* is conferred by a novel genetic mechanism. *Applied and Environmental Microbiology* 81: 5184-5195.
- Li, X. W., Wang, P., Fail, J. and Shelton, A. M. (2015) Detection of gene flow from sexual to asexual lineages in *Thrips tabaci* (Thysanoptera: Thripidae). *PloS One* 10: e0138353.
- Yuan, X., Gao, K., Yuan, F., Wang, P. and Zhang, Y. (2015) Phylogenetic relationships of subfamilies in the family HesperIIDae (Lepidoptera: Hesperioidea) from China. *Scientific Reports* 5: 11140.
- Tetreau, G., Cao, X., Chen, Y.-R., Muthukrishnan, S., Jiang, H., Blissard, G. W., Kanost, M. R. and Wang, P. (2015) Overview of chitin metabolism enzymes in *Manduca sexta*: identification, domain organization, phylogenetic analysis and gene expression. *Insect Biochemistry and Molecular Biology* 62: 114-126.

- Dittmer, N. T., Tetreau, G., Cao, X., Jiang, H., Wang, P., Kanost, M. R. (2015) Annotation and expression analysis of cuticular proteins from the tobacco hornworm, *Manduca sexta*. *Insect Biochemistry and Molecular Biology* 62: 100-113.
- Tetreau, G., Dittmer, N. T., Cao, X., Agrawal, S., Chen, Y.-R., Muthukrishnan, S., Jiang, H., Blissard, G. W., Kanost, M. R. and Wang, P. (2015) Analysis of chitin-binding proteins from *Manduca sexta* provides new insights into evolution of peritrophin A-type chitin-binding domains in insects. *Insect Biochemistry and Molecular Biology* 62: 127-141.
- Kain, W., Song, X., Janmaat, A. F., Zhao, J. Z., Myers, J., Shelton, A. M. and Wang, P. (2015) Resistance of *Trichoplusia ni* populations selected by *Bacillus thuringiensis* sprays to pyramided Bt cotton plants expressing Cry1Ac and Cry2Ab. *Applied and Environmental Microbiology* 81: 1884-1890.
- Chen, Y.-R., Zhong, S., Fei, Z., Gao, S., Zhang, S., Li, Z. Wang, P. and Blissard, G. W. (2014) Transcriptome responses of the host *Trichoplusia ni* to infection by the baculovirus *Autographa californica* multiple nucleopolyhedrovirus. *Journal of Virology* 88: 13781-13797.
- Li, X. W., Fail, J., Wang, P., Feng, J. N. and Shelton, A. M. (2014) Performance of arrhenotokous and thelytokous *Thrips tabaci* (Thysanoptera: Thripidae) on onion and cabbage and its implications on evolution and pest management. *Journal of Economic Entomology* 107: 1526-1534.
- Nault, B. A., Kain, W. C. and Wang, P. (2014) Seasonal changes in *Thrips tabaci* population structure in two cultivated hosts. *PLoS One* 9, e101791.
- Tian, J.-C., Long, L.-P., Wang, X.-Ping., Naranjo, S. E., Romeis, J., Hellmich, R. L., Wang, P., Shelton, A. M. (2014) Using resistant prey demonstrates that Bt plants producing Cry1Ac, Cry2Ab, and Cry1F have no negative effects on *Geocoris punctipes* and *Orius insidiosus*. *Environmental Entomology* 43: 242-251.
- Zhang, X., Kain, W. and Wang, P. (2013) Sequence variation and differential splicing of the midgut cadherin gene in *Trichoplusia ni*. *Insect Biochemistry and Molecular Biology* 43: 712-723.
- Tian, J. C., Wang, X. P., Long, L. P., Romeis, J., Naranjo, S. E. Hellmich, R. L., Wang, P., Earle, E. D. and Shelton, A. M. (2013) Bt Crops producing Cry1Ac, Cry2Ab and Cry1F do not harm the green lacewing, *Chrysoperla rufilabris*. *PLoS One* 8 (3): e60125.
- You, M., Yue, Z., He, W., Yang, G., Xie, M., Zhan, D., Baxter, S. W., Vasseur, L., Gurr, G. M., Douglas, C. J., Bai, J., Wang, P. et al. (2013) A heterozygous moth genome provides insights into herbivory and detoxification. *Nature Genetics* 45: 220-225.
- Leetachewa, S., Moonsom, S., Chaisri, U., Khomkhum, N., Yoonim, N., Wang, P., Angsuthanasombat, C. (2013). Functional characterizations of residues Arg-158 and Tyr-170 of the mosquito-larvicidal toxic *Bacillus thuringiensis* Cry4Ba. *BMB Reports* 2013 Dec 1. Pii:2490.

- Zhang, X, Tiewisiri, K., Kain, W., Huang, L. and Wang, P. (2012) Resistance of *Trichoplusia ni* to *Bacillus thuringiensis* toxin Cry1Ac is independent of alteration of the cadherin-like receptor for Cry toxins. *PLoS ONE* 7: e35991.
- Baxter, S. W., Badenes-Pérez, F. R., Morrison, A., Vogel, H., Crickmore, N., Kain, W., Wang, P., Heckel, D. G. and Jiggins, C. D. (2011) Parallel evolution of *Bacillus thuringiensis* toxin resistance in Lepidoptera. *Genetics*, 189: 675–679.
- Tiewisiri, K. and Wang, P. (2011) Differential alteration of two aminopeptidases N associated with resistance to *Bacillus thuringiensis* toxin Cry1Ac in cabbage looper. *Proc. Natl. Acad. Sci. USA* 108: 14037-14042.
- Li, Y., Romeis, J., Wang, P., Peng, Y. and Shelton, A. M. (2011) A Comprehensive assessment of the effects of Bt cotton on *Coleomegilla maculata* demonstrates no detrimental effects by Cry1Ac and Cry2Ab. *PLoS ONE* 6, e22185.
- Chen, M., Shelton, A. M., Hallett, R. H., Hoepfing, C. A., Kikkert, J. R. and Wang, P. (2011) Swede midge (Diptera: Cecidomyiidae), 10 years of invasion of crucifer crops in North America. *Journal of Economic Entomology* 104: 709-714.
- Terenius, O. et al. (74 authors in total including 4 authors from my laboratory) (2011) RNA interference in Lepidoptera: An overview of successful and unsuccessful studies and implications for experimental design. *Journal of Insect Physiology* 57: 231-245.
- Li, C., Song, X., Li, G. and Wang, P. (2009) Midgut cysteine protease-inhibiting activity in *Trichoplusia ni* protects the peritrophic membrane from degradation by plant cysteine proteases. *Insect Biochemistry and Molecular Biology* 39: 726-734.
- Chen, M., Shelton, A. M., Wang, P., Hoepfing, C. A., Kain, W. C. and Brainard, D. C. (2009) Occurrence of the new invasive insect *Contarinia nasturtii* (Diptera: Cecidomyiidae) on cruciferous weeds. *Journal of Economic Entomology* 102: 115-120.
- Wang, P., Rodrigo, A., Zhao, J.-Z., Guo, W., Kain, W., Ferre, J., Shelton, A. and Myers, J. (2007) Mechanism of resistance to *Bacillus thuringiensis* toxin Cry1Ac in cabbage looper, *Trichoplusia ni*. *Applied and Environmental Microbiology* 73: 1199-1207.
- Fang, J., Xu, X., Wang, P., Zhao, J., Shelton, A. M., Cheng, J., Feng, M. and Shen Z. (2007) Characterization of chimeric *Bacillus thuringiensis* Vip3 toxins. *Applied and Environmental Microbiology* 73: 956-961.
- Kikkert, J. R., Hoepfing, C. A., Wu, Q., Wang, P., Baur, R. and Shelton, A. M. (2006) Detection of Swede Midge (Diptera: Cecidomyiidae) in New York, A New Pest of Cruciferous Plants in the United States. *Journal of Economic Entomology* 99: 1310-1315.
- Galloway, C. S., Wang, P., Winstanley, D. and Jones, I. M. (2005) Comparison of the bacterial Enhancin-like proteins from *Yersinia* and *Bacillus spp.* with a baculovirus enhancin. *Journal of Invertebrate Pathology* 90: 134-137

- Zheng, G., Li, C., Li, G., Wang, P. and Granados, R. R. (2005) Construction and characteristics of a transformed lepidopteran cell clone expressing baculovirus p35. *Chinese Science Bulletin* 50: 2728-2732.
- Guo, W., Li, G., Pang, Y. and Wang, P. (2005) A novel chitin-binding protein identified from the peritrophic membrane of the cabbage looper, *Trichoplusia ni*. *Insect Biochemistry and Molecular Biology* 35: 1224-1234.
- Wang, P., Zhang, X. and Zhang, J. (2005) Molecular characterization of four midgut aminopeptidase N isozymes from the cabbage looper, *Trichoplusia ni*. *Insect Biochemistry and Molecular Biology* 35: 611-620.
- Wang, P., Li, G. and Kain, W. (2004) Characterization and cDNA cloning of midgut carboxypeptidases from *Trichoplusia ni*. *Insect Biochemistry and Molecular Biology* 34: 831-843.
- Janmaat, A. F., Wang, P.*, Kain, W., Zhao, J.-Z. and Myers, J. (2004) Inheritance of resistance to *Bacillus thuringiensis kurstaki* in *Trichoplusia ni*. *Applied and Environmental Microbiology* 70: 5859-5867.
- Kain, W. C., Zhao, J.-Z., Janmaat, A. F., Myers, J., Shelton, A. M. and P. Wang. (2004) Inheritance of resistance to *Bacillus thuringiensis* Cry1Ac toxin in a greenhouse-derived strain of cabbage looper (Lepidoptera: Noctuidae). *Journal of Economic Entomology* 97: 2073-2078.
- Tian, J., Li, C., Zheng, G., Li, G., Wang, P. and Granados, R. R. (2004) A new cell clone derived from *Trichoplusia ni* N5B1-4 cells. *Entomologia Sinica* 11: 165-171.
- Wang, P., G. Li and Granados, R. R. (2004) Identification of two new peritrophic membrane proteins from larval *Trichoplusia ni*: structural characteristics and their functions in the protease rich insect gut. *Insect Biochemistry and Molecular Biology* 34: 215-227.
- Wang, P. and Granados, R. R. (2003) Rapid and efficient isolation of highly specific antibodies from an antiserum against a pool of proteins. *Biotechnic & Histochemistry* 78: 201-205.
- Garcia, J. J., Li, G., Wang, P., Zhong, J. and Granados, R. R. (2001) Primary and continuous midgut cell cultures from *Pseudaletia unipuncta* (Lepidoptera: Noctuidae). *In Vitro Cellular and Developmental Biology* 37: 353-359.
- Wang, P. and Granados, R. R. (2001) Molecular structure of the peritrophic membrane (PM): Identification of potential PM target sites for insect control. *Archives of Insect Biochemistry and Physiology* 47: 110-118.
- Wang, P., Conred, J. and Shahabuddin, M. (2001) Localization of midgut specific protein antigens from the mosquito *Aedes aegypti*. *Journal of Medical Entomology* 38: 223-230.
- Wang, P. and Granados, R. R. (2000) Calcofluor disrupts the midgut defense system in insects. *Insect Biochemistry and Molecular Biology* 30: 135-143.

- Li, G., Li, T., Wang, P. and Granados, R. R. (2000) Serial passage of *Trichoplusia ni* single embedded baculovirus in homologous cell line. *Entomologia Sinica* 7: 147-154.
- Wang, P., Toung, R. and Granados, R. R. (1999) The establishment of new cell lines from *Pseudaletia unipuncta* with differential responses to baculovirus infection. *In Vitro Cellular and Developmental Biology* 35: 333-338.
- Wang, P. and Granados, R. R. (1998) Observations on the presence of the peritrophic membrane in larval *Trichoplusia ni* and its role in limiting baculovirus infection. *Journal of Invertebrate Pathology* 72: 57-62.
- Wang, P. and Granados, R. R. (1997) An intestinal mucin is the target substrate for a baculovirus enhancin. *Proceedings of the National Academy of Sciences of USA* 94: 6977-6982.
- Wang, P. and Granados, R. R. (1997) Molecular cloning and sequencing of a novel invertebrate intestinal mucin cDNA. *Journal of Biological Chemistry* 272: 16663-16669.
- Wang, P., Hammer, D. A. and Granados, R. R. (1997) Binding and fusion of *Autographa californica* nuclear polyhedrosis virus to cultured insect cells. *Journal of General Virology* 78: 3081-3089.
- Wang, P., Hammer, D. A. and Granados, R. R. (1994) Interaction of *Trichoplusia ni* granulosis virus-encoded enhancin with the midgut epithelium and peritrophic membrane of four lepidopteran insects. *Journal of General Virology* 75: 1961-1967.
- Wang, P., Granados, R. R. and Shuler, M. L. (1992) Studies on serum-free culture of insect cells for virus propagation and recombinant protein production. *Journal of Invertebrate Pathology* 59: 46-53.
- Wu, A., Wang, P., Mao, C., Qian, Y. and Sun Y. (1990) Heterogeneous recombination of an *Autographa californica* NPV transfer vector with *Bombyx mori* NPV, and the expression and stability of a recombinant protein expressed by the recombinant virus. *Chinese Journal of Biotechnology* 6: 277-281.
- Li, Y., Wang, P. and Wu, A. (1988) An insect DNA topoisomerase and the replication of a nuclear polyhedrosis virus. *Chinese Journal of Virology* 4: 335-341.

REVIEWS AND BOOK CHAPTERS

- Tetreau, G. and Wang, P. (2019) Chitinous structures as potential targets for insect pest control. In: Yang Q., Fukamizo T. (eds) Targeting Chitin-containing Organisms. Advances in Experimental Medicine and Biology, vol 1142. Springer.
- Wang, P. (2015) Mechanism of Cry1Ac resistance in cabbage loopers – A resistance mechanism selected in insect populations in an agricultural environment. In “*Bt Resistance –*

Characterization and Strategies for GM Crops Expressing Bacillus thuringiensis Toxins” (Eds: M. Soberon, Y. Gao and A. Bravo), CABI International, pp. 87-97.

Wang, P. and Granados, R. R. (2013) Chapter 150, Baculovirus enhancin. In: “*Handbook of Proteolytic Enzymes (Third Edition)*” (Eds: N. D. Rawlings and G. Salvesen), Academic Press, pp. 713-716.

Wang, P. (2008) Midgut and insect pathogens. In: Capinera, J. L. (Ed.) *Encyclopedia of Entomology*, 2nd edition. Springer. pp. 2386-2387.

Shelton, A. M., Wang, P., Zhao, J.-Z. and Roush, R. T. (2007) Resistance to insect pathogens and strategies to manage resistance: An update. In: Lacey, L. A. and Kaya, H. K. (Eds.) *Field Manual of Techniques in Invertebrate Pathology: Application and evaluation of pathogens for control of insects and other invertebrate pests*. 2nd edition. Springer. pp. 793-814.

Wang, P. and Granados, R. R. (2004) Baculovirus enhancin. In: “*Handbook of Proteolytic Enzymes*” (Eds: Barrett, A. J., N. D. Rawlings and J. F. Woessner), Academic Press, Vol. 1, pp. 469-470.

Corsaro, B. G., Gijzen, M., Wang, P. and Granados, R. R. (1993) Baculovirus enhancing proteins as determinants of viral pathogenesis. In: “*Parasites and Pathogens of Insects*” (Eds: Beckage, N. E., S. N. Thompson and B. A. Federici) vol. 2. pp. 127-145.

PRESENTATIONS

INVITED

Wang, P. (2019) Effect of the peritrophic membrane on toxicity of Bt Cry toxins in insects. Annual Meeting of the Society for Invertebrate Pathology. July 28-August 1, 2019. Valencia, Spain.

Wang, P., Ma, X., Yang, X., Chen, W., Kain' W., Song, X., Chu, H. and Fei, Z. (2018) Mutations of ABC transporters and Bt resistance in cabbage loopers. Annual Meeting of the Society for Invertebrate Pathology. Aug. 12-16, 2018. Gold Coast, Queensland, Australia.

Wang, P. (2018) Cabbage looper as a biological system for studying resistance to Bt Cry toxins in Lepidoptera from biology to genomics. Annual Meeting of the Entomological Society. November 11-14, 2018. Vancouver, BC, Canada.

Wang, P. (2018) Bt-resistance in the cabbage looper: a biological system for studying insect resistance to Bt toxins from biology to genomics. Invited Seminar, Institute of Insect Science, College of Agriculture and Biotechnology, Zhejiang University. November 27, 2018. Hangzhou, China.

Wang, P. (2018) The cabbage looper: a generalist herbivore, an agricultural pest and a biological system for studying mechanisms of Bt resistance. Invited Seminar, Institute of Vegetables, Beijing Academy of Agriculture and Forestry. June 11, 2018. Beijing, China.

- Wang, P. (2018) Resistance to Bt Cry toxins in the cabbage looper, *Trichoplusia ni*. Invited Seminar, Institute of Vegetables and Flowers, Chinese Academy of Agricultural Sciences. June 12, 2018. Beijing, China.
- Wang, P. (2018) The cabbage looper: a generalist agricultural pest and a biological system for studying mechanisms of Bt resistance. Invited Seminar, College of Plant Protection, Shenyang Agricultural University. June 13, 2018. Shenyang, China.
- Wang, P. (2018) The cabbage looper: a generalist agricultural pest and a biological system for studying mechanisms of Bt resistance. Invited Seminar, School of Life Sciences and Biotechnology, Dalian University of Technology. June 14, 2018. Dalian, China.
- Wang, P., Huang, L., Chen, W. and Fei, Z. 2017. Peritrophic membrane structural proteins, their genes and expression in *Trichoplusia ni*. Annual Meeting of the Entomological Society. November 5-8, 2017. Denver, CO.
- Wang, P. 2017. The cabbage looper: a generalist herbivore, an agricultural pest and a biological system for midgut research. Symposium “Ecological Control for Insect Pests in Subtropical Crops”. March 11-16, 2017. Fuzhou, China.
- Yang, X., Chen, W., Chu, H. Song, X., Fei, Z. and Wang, P. 2017. Understanding the Molecular Mechanism of Insect Resistance to Bt Toxin Cry2Ab. USDA NIFA AFRI Project Director’s Meeting. Oct. 30-31, 2017. Washington DC.
- Wang, P. 2016. *Bt resistance and mode of action of Cry toxins in the cabbage looper*. Symposium “Bt Mode of Action, Resistance Mechanisms and Global Patterns”, International Conference of Entomology, Orlando, FL. Sept 25-30, 2016.
- Wang, P. 2016. *The knowns, unknowns and wchallenges in understanding insect resistance to Bt in agriculture*. Symposium “Past developments, current frontiers, and future perspectives: global gathering of Chinese entomologists in 2016”. International Conference of Entomology, Orlando, FL. Sept 24, 2016.
- Wang, P. 2016. *Towards understanding the mechanism of insect resistance to Bt crops*. Institute for Plant Protection, Chinese Academy of Agricultural Sciences, Beijing, China. August 8, 2016.
- Wang, P. 2016. *Bt resistance in the cabbage looper: mechanisms of insect resistance to Bt crops*. Institute of Vegetable and Flower Research, Chinese Academy of Agricultural Sciences, Beijing, China. August 7, 2016.
- Wang, P. 2016. *Insect resistance to Bt crops*. Plant Protection Institute, Hebei Academy of Agricultural and Forestry Sciences, Baoding, China. August 9, 2016.
- Wang, P. 2015. *Molecular genetic basis of insect resistance to Bt-crops*. USDA NIFA Biotechnology Risk Assessment Grants Program Annual Project Director’s Meeting, Jun 4, 2015. Riverdale, MD.

- Wang, P. 2015. *Resistance of cabbage looper to DiPel*. Annual Meeting of the Society for Invertebrate Pathology, Vancouver, BC, Canada, July 9-13, 2015.
- Wang, P. 2015. *What mechanisms of insect resistance to Bt toxins may confer resistance to Bt crops in the field?* Institute of Insect Science, Zhejiang University, Hangzhou, China. July 8, 2015.
- Wang, P. 2015. *Bt-resistance in the cabbage looper: An opportunity to understand mechanisms of Bt-resistance evolved in agricultural systems*. Department of Entomology, Cornell University. March 11, 2015.
- Wang, P. 2014. *Bt resistance in Trichoplusia ni: mechanisms of resistance to multiple Bt toxins in a generalist insect*. International Conference on Molecular Ecology and Pest Management, Fuzhou, China, Oct. 28-31, 2014.
- Wang, P. 2014. *Understanding insecticidal Bt toxins: mode of action and mechanisms of resistance*. National Key Laboratory for Biological Control, Zhongshan University, Guangzhou, China, Jan. 12, 2014.
- Wang, P. 2013. *Variation of the midgut cadherin in the cabbage looper, Trichoplusia ni*. Symposium “Insect Resistance Management: Lessons Learned from Biochemical and Molecular Paths to Bt Resistance”, Annual Meeting of the Entomological Society of America, Nov. 13, 2013, Austin, TX.
- Wang, P. 2013. *ABC transporter-associated resistance to Bacillus thuringiensis toxins in insects*. Symposium “ABC Transporters: An important “New” Player in Insect Biology”, Annual Meeting of the Entomological Society of America, Nov. 13, 2013, Austin, TX.
- Wang, P. 2013. *What mechanisms of resistance to transgenic Bt-crops may be selected in insect populations in the field?* The First EITA Conference on Agricultural Science and Technology, Biosystems Engineering, “Precision Agriculture: Challenges and Future Directions”. Ithaca, NY, Jun 27-28, 2013.
- Wang, P. 2012. *Proteomic approaches to understand resistance to Bt toxins in Trichoplusia ni*. The Second International Symposium on Insect Midgut Biology, Guangzhou, China, Sept. 27, 2012.
- Wang, P. 2012. *Bt-resistance in cabbage looper: an opportunity to understand mechanisms of resistance evolved in agricultural systems*. Department of Entomology, University of Kentucky, Lexington, KY, Jan. 20, 2012.
- Wang, P. 2012. *Towards understanding the mechanisms of Bt resistance in insects*. National Key Laboratory for Biological Control, Zhongshan University, Guangzhou, China. May 18, 2012.
- Wang, P., 2012. *Molecular mechanisms of Bt resistance in insects*. Institute of Virology, Chinese Academy of Sciences, Wuhan, China, Sept. 22, 2012.
- Wang, P., 2012. *What mechanisms of Bt resistance may be selected in insect populations in the*

- field?* College of Life Sciences, Central China Normal University, Wuhan, China, Sept. 21, 2012.
- Wang, P., 2012. *What mechanisms of Bt resistance may be selected in insect populations in the field?* National Key Laboratory of Agricultural Microbiology, Huazhong Agricultural University, Wuhan, China, Sept. 20, 2012.
- Wang, P. 2011. *Molecular basis of resistance to Bt toxin CryIAC in Trichoplusia ni.* Symposium “State-of-the-art Molecular Research of Global Interest”, Annual Meeting of the Entomological Society of America, Reno, NV, Nov. 13, 2011.
- Wang, P. 2011. *Mechanism of Bt resistance in the cabbage looper, Trichoplusia ni.* Symposium “The Molecular Physiology of Arthropod Vectors and Pests: Towards the Development of Novel Control Agents and Approaches”, Annual Meeting of the Entomological Society of America, Reno, NV, Nov. 16, 2011.
- Wang, P., 2011. *Mechanism of insect resistance to Bacillus thuringiensis evolved in agriculture situations.* The Second International Symposium on Bombyx mori Functional Genomics and Modern Silk Road. Chongqing, China, October 22 – 23, 2011.
- Wang, P., 2011. *Bt-resistance in cabbage looper: An opportunity to understand mechanisms of resistance evolved in agricultural systems.* The Monsanto Company, St. Louise, Mo., Dec. 6, 2011.
- Wang, P. 2011. *Bt-resistance in cabbage looper: An opportunity to understand mechanisms of Bt-resistance in agricultural systems.* Institute for Integrative Genome Biology, University of California, Riverside, CA, November 18, 2011.
- Wang, P. 2011. *Bt-resistance in cabbage looper: An opportunity to understand mechanisms of resistance evolved in agricultural systems.* College of Plant Protection, Nanjing Agricultural University, Nanjing, China, Oct. 20, 2011.
- Wang, P. 2011. *Mechanisms of resistance to Bacillus thuringiensis toxins in lepidopteran pests.* Institute of Applied Ecology, Fujian Agricultural and Forestry University, Fuzhou, China, Oct 19, 2011.
- Wang, P. 2011. *Mechanisms of resistance to Bacillus thuringiensis toxins in lepidopteran pests.* Cornell Symposium of Lepidopteran Biology. Cornell University, Oct. 11, 2011.
- Wang, P. 2011. *Biochemical and molecular bases of Bt resistance in cabbage looper, Trichoplusia ni.* Institute of Insect Science, Zhejiang University, Hangzhou, China, April 13, 2011.
- Wang, P. 2011. *Biochemical and molecular bases of Bt resistance in cabbage looper, Trichoplusia ni.* College of Plant Protection, South China Agricultural University, Guangzhou, China, April 15, 2011.

- Wang, P. 2010. *Understanding a novel mechanism of Bt resistance in the cabbage looper, Trichoplusia ni*. USDA-Agriculture & Food Research Initiative (AFRI) Pest and Beneficial Insects in Plant Systems Programs Awardee Workshop. San Diego, CA, Dec. 11-12, 2010.
- Wang, P., 2010. *Identification of midgut protein alterations conferring Bt resistance in cabbage looper*. Cornell University Proteomics Group Meeting, Cornell University, Dec. 1, 2010.
- Wang, P., 2010. *The insect peritrophic membrane: Biochemistry and function in interactions with host plants and microbial pathogens*. Institute of Applied Entomology, Zhejiang University, Hangzhou, China, May 31, 2010.
- Wang, P., 2010. *Bt-resistance in cabbage looper: An opportunity to study Bt-resistance mechanisms in the field*. College of Plant Protection, Northwest Agricultural and Forestry University, Yangling, China, March 27, 2010.
- Wang, P., 2010. *Bt-resistance in cabbage looper: An opportunity to study mechanisms of field-evolved resistance to Bt-crops*. College of Plant Protection, Fujian Agricultural and Forest University, Fuzhou, China, May 25, 2010.
- Wang, P., 2010. *Biochemistry and function of the insect peritrophic membrane in interactions with host plants and microbial pathogens*. College of Plant Protection, Fujian Agricultural and Forest University, Fuzhou, China, May 26, 2010.
- Wang, P., 2010. *Biochemistry and function of the insect peritrophic membrane in interactions with host plants and microbial pathogens*. Department of Entomology (Geneva), Cornell University, Oct. 12, 2010.
- Tiewisiri, K. and Wang, P., 2010. *How Does the cabbage looper, Trichoplusia ni, become resistant to the Bt toxin CryIAc?* Department of Entomology (Geneva), Cornell University, Nov. 9, 2010.
- Wang, P., 2009. *The peritrophic membrane of insects: Structural formation and function in interactions with host plants and microbial pathogens*. International Symposium on *Bombyx mori* functional genomics and modern Silk Road. Chongqing, China, October 21 – 23, 2009.
- Wang, P., 2009. *Biochemistry and function of the insect peritrophic membrane in interactions with host plants and microbial pathogens*. Department of Biochemistry, Kansas State University, Manhattan, Kansas, April 29, 2009.
- Wang, P., 2009. *Biochemistry and function of the insect peritrophic membrane in interactions with host plants and microbial pathogens*. College of Agriculture and Biotechnology, China Agricultural University, Beijing, China, October 26, 2009.
- Wang, P., 2009. *Biochemistry and function of the insect peritrophic membrane in interactions with host plants and microbial pathogens*. College of Life Sciences, Hebei Agricultural University, Baoding, China, October 30, 2009.
- Wang, P., 2009. *Bt-resistance in cabbage looper: An opportunity to study Bt-resistance*

- mechanisms in field*. College of Life Sciences, South China Normal University, Guangzhou, China, November 2, 2009.
- Wang, P., 2009. *Bt-resistance in cabbage looper: An opportunity to study Bt-resistance mechanisms in field*. College of Life Sciences, Zhongshan University, Guangzhou, China, November 3, 2009.
- Wang, P., 2009. *Biochemistry and function of the insect peritrophic membrane in interactions with host plants and microbial pathogens*. Symposium of Pest Management in the 21st Century, Northwest Agricultural and Forestry University, Yangling, China, November 4-5, 2009.
- Wang, P., 2009. *Biochemistry and function of the insect peritrophic membrane in interactions with host plants and microbial pathogens*. Institute of Plant Physiology and Ecology, Chinese Academy of Sciences, Shanghai, China, November 10, 2009.
- Wang, P., 2008. *The peritrophic membrane: A midgut barrier interacting with host plants and microbial pathogens*. International Symposium on Insect Midgut Biology, Guangzhou, China, Apr. 7 – 11, 2008.
- Wang, P., 2008. *Bt-resistance in cabbage looper: An opportunity to study Bt-resistance mechanisms in field*. Zhejiang University, China, Apr. 14, 2008.
- Wang, P., 2008. *The peritrophic membrane: A midgut barrier interacting with host plants and microbial pathogens*. Qingdao Agricultural University, China, Apr. 16, 2008.
- Wang, P., 2008. *Bt as biopesticides: Mechanisms of action in insects*. Qingdao Agricultural University, China, Apr. 16, 2008.
- Wang, P., 2008. *Mechanisms of Bt resistance in insects*. Qingdao Agricultural University, China, Apr. 16, 2008.
- Wang, P., 2008. *Bt-resistance in cabbage looper: An opportunity to study Bt-resistance mechanisms in field populations*. Texas A&M University, Texas, Oct. 9, 2008.
- Wang, P., 2007. *The Peritrophic membrane and the role of enhancins*. Annual Meeting of the Society for Invertebrate Pathology, Aug. 12 – 16, 2007, Quebec, Canada.
- Wang, P., 2007. *Bt resistance in cabbage looper*. The Monsanto Company, St. Louis, MO., June 18, 2007.
- Wang, P. 2006. *Mechanisms of Bt resistance in insects*. International Insect Science Symposium, (A symposium organized by the National Key Laboratory of Integrated Management of Pest Insects and Rodents, Chinese Academy of Sciences). Beijing, China, Aug. 7 – Aug. 14, 2006.
- Wang, P. 2006. *Biochemical and molecular basis of defense mechanisms in the insect midgut*. International Insect Science Symposium, Beijing, China, Aug. 7 – Aug. 14, 2006.
- Wang, P. 2006. *Biochemical and molecular basis of defense mechanisms in the midgut of the*

- cabbage looper*. Institute of Plant Protection, Chinese Academy of Agricultural Sciences, Beijing, China, Aug. 7, 2006.
- Wang, P. 2006. *Biochemical and molecular basis of defense mechanisms in the midgut of the cabbage looper*. College of Life Sciences, Central China Normal University, Wuhan, China, Aug. 26, 2006.
- Wang, P. 2006. *What mechanisms of Bt-resistance may insect populations develop in the field?* Department of Plant Breeding and Genetics, Cornell University, Oct. 3, 2006.
- Shelton, A. M., Zhao, J. and Wang, P. (2005) *Bt resistance management: Have we been lucky or smart?* Pacific Rim Conference on the Biotechnology of *Bacillus thuringiensis* and its Environmental Impact. Victoria, BC, Canada, November 2, 2005.
- Wang, P. (2005) *Bt-resistance in cabbage looper: An opportunity to study Bt-resistance mechanisms in field populations of insects*. Department of Entomology -- Ithaca, Cornell University, March 28, 2005.
- Wang, P. (2005) *Biochemical and molecular basis of defense mechanisms in the midgut of the cabbage looper*. Institute of Applied Entomology, Zhejiang University, China, July 20, 2005.
- Wang, P. (2005) *Structure and function of the midgut peritrophic membrane in the cabbage looper*. College of Plant Protection, Laiyang Agricultural College, China, July 21, 2005.
- Wang, P. (2004) *Biochemical and molecular basis of defense mechanisms in the midgut of the cabbage looper*. Department of Entomology, Rutgers University, February 20, 2004.
- Wang, P. (2003) *Understanding the biochemistry of the insect midgut*. Department of Entomology, Pennsylvania State University, September 12, 2003.
- Wang, P. (2003) *Function of the peritrophic membrane in viral pathogenesis*. Symposium "New approaches for studying toxicity, infection and pathogenesis", Annual Meeting of the Society of Invertebrate Pathology, Burlington, VT, July 27, 2003.
- Wang, P. (2002) *How do insects handle food?* Department of Food Science and Technology, NYSAES, Cornell University, May 1, 2002.
- Wang, P. (2002) *Enhancers and the biology of the insect peritrophic membrane*. The symposium "A pathological obsession with insects and disease", Boyce Thompson Institute for Plant Research, October 18, 2002.
- Wang, P. and Granados, R. R. (2000) *Molecular structure of the peritrophic membrane and its implication for insect control*. International Congress of Entomology. Iguassu Falls, Brazil, August 20-26, 2000.

ADDITIONAL RESEARCH PRESENTATIONS

- Shrestha, A., Bao, K., Chen, W., Wang, P., Fei, Z. and Blissard, G.W. (2019) Transcriptional responses of the *Trichoplusia ni* midgut to oral infection by the baculovirus *Autographa californica* multiple nucleopolyhedrovirus. Annual Meeting of the Society for Invertebrate Pathology. July 28-August 1, 2019. Valencia, Spain.
- Pfannenstiel, L., Yang, X. and Wang, P. 2018. Mapping of a Bt Cry1Ac Resistance Gene in *Trichoplusia ni*. NYSAES Summer Scholars Program Undergraduate Research Symposium. NYSAES, Geneva, NY, July 27, 2017.
- Cotto, R. and Wang, P. 2018. Understanding the molecular genetic basis of *Bt* resistance in insect pests. The Entomological Society of America, Entomological Society of Canada and the Entomological Society of British Columbia Joint Annual Meeting, Nov. 11-14, 2018. Vancouver, BC. Canada
- Yang, X., Chen, W., Chu, H. Song, X., Fei, Z. and Wang, P. 2017. Mapping of Bt Cry2Ab resistance gene in the cabbage looper, *Trichoplusia ni*. Annual Meeting of the Entomological Society. Denver, CO, November 5-8, 2017.
- Joaquín, G.-C., Walsh, T., Downes, C., Kain, W., Wang, P., Leonard, K., Morgan, T., Oppert, B. and Ferré, J. 2017. Analysis of cross-resistant of resistant insect colonies from different species to Vip3Ca from *Bacillus thuringiensis*. Annual Meeting of the Society for Invertebrate Pathology. La Jolla, CA, August 13-17, 2017.
- Chu, H., Yang, X. and Wang, P. 2017. Analysis of ABCC1 and ABCC2 gene variation and expression in Cry2Ab resistant *Trichoplusia ni*. NYSAES Summer Scholars Program Undergraduate Research Symposium. NYSAES, Geneva, NY, July 28, 2017.
- Wang, P. and Fei, Z. 2016. *Understanding the Molecular Mechanism of Insect Resistance to Bt Toxin Cry2Ab*. USDA NIFA Project Director Meeting, AFRI Plant-Associated Insects and Nematodes Program. Orlando, FL, Sept 24, 2016.
- Blissard, G., Wang, P. and Fei, Z. 2016. *Modifying insect midgut responses to pathogen attack*. USDA NIFA Project Director Meeting, AFRI Plant-Associated Insects and Nematodes Program. Orlando, FL, Sept 24, 2016.
- Tetreau, G., Wang, R. and Wang, P. 2016. *Fitness costs associated with multi-toxin resistance in the cabbage looper (Trichoplusia ni)*. Annual Meeting of the Society for Invertebrate Pathology. Tours, France, July 27, 2016.
- Cotto, R., Yang, X. and Wang, P. 2016. *Variations of the midgut cadherin protein in populations of the cabbage looper*. NYSAES Summer Scholars Program Undergraduate Research Symposium. NYSAES, Geneva, NY, July 29, 2016.
- Wang, P., Ma, X., Chen, W., Kain, W. and Fei, Z. 2014. *Molecular genetic basis of insect resistance to Bt-crops*. USDA NIFA Biotechnology Risk Assessment Grants Program Annual Project Director's Meeting. Riverdale, MD, Jun 4, 2014.

- Wang, P. 2013. *Molecular genetic basis of insect resistance to Bt-crops*. USDA NIFA Biotechnology Risk Assessment Grants Program Annual Project Director's Meeting. Riverdale, MD, Jun 14, 2013.
- Struble, J. and Wang, P. 2013. *Sequencing the mitochondrial COI gene from agricultural pest insects for molecular barcoding and population analysis*. NYSAES Summer Scholars Program Undergraduate Research Poster Session. July 31, 2013, NYSAES, Geneva, NY.
- Wang, P. 2013. *Introduction of the Tang Cornell-China Scholars Program*. The Northwest Agricultural and Forestry University, Yangling, China, Sept 9, 2013.
- Song, X. and Wang, P. 2013. *Biochemical analysis of resistance to Bacillus thuringiensis toxin Cry2Ab in cabbage looper, Trichoplusia ni*. The 2nd Cornell Annual Entomology Symposium, Ithaca, NY.
- Tetreau, G., Song, X., Chen, Y.-R., Gao, S., Fei, Z., Blissard, G. and Wang, P. 2013. *Midgut transcriptome of the cabbage looper, Trichoplusia ni*. Annual Meeting of the Entomological Society of America. Austin, TX, Nov. 10 – 13, 2013.
- Song, X. and Wang, P. 2012. *Resistance to Bacillus thuringiensis toxins Cry1Ac and Cry2Ab in cabbage looper, Trichoplusia ni*. The 1st Cornell Annual Entomology Symposium, Ithaca, NY.
- Song, X. and Wang, P. 2011. *Is resistance to Bacillus thuringiensis toxin Cry2Ab associated with mutations of Cry1Ac-receptor genes in Trichoplusia ni?* Annual Meeting of the Entomological Society of America. Reno, NV., Nov. 14, 2011.
- Wang, P., Tiewisiri, K. and Kain, W. 2010. *Understanding the mechanism of Bt resistance in the cabbage looper, Trichoplusia ni*. USDA-Agriculture & Food Research Initiative (AFRI) Arthropods & Nematodes Biology & Management Programs Awardee Workshop. Washington DC, March 23-24, 2010.
- Song, X. and Wang, P., 2010. *Multiple resistance or cross resistance? A case study of dual resistance to Bacillus thuringiensis toxins Cry1Ac and Cry2Ab in Trichoplusia ni*. Annual Meeting of the Entomological Society of America. San Diego, CA. Dec. 12 – 15, 2010.
- Tiewisiri, K. and Wang, P., 2009. *Analysis of Bacillus thuringiensis toxin Cry1Ac binding proteins in midgut brush border membranes of Trichoplusia ni larvae*. Annual Meeting of the Entomological Society of America. Indianapolis, Indiana, Dec. 13 – 16, 2009.
- Song, X., Li, C., Li, G. and Wang, P., 2009. *Identification and characterization of cysteine protease inhibiting activity in the midgut fluid of Trichoplusia ni larvae*. Annual Meeting of the Entomological Society of America. Indianapolis, Indiana, Dec. 13 – 16, 2009.
- Li, J. and Wang, P., 2009. *Role of midgut peritrophic membranes in regulating digestive protease activities*. Annual Meeting of the Entomological Society of America. Indianapolis, Indiana, Dec. 13 – 16, 2009.

- Wang, P., 2009. *Molecular tools for insect identification and population analysis (a 15-min powerpoint presentation followed by a discussion with questions)*. Agriculture and Food Systems In-service Conference. Ithaca, NY, November 12, 2009.
- Zhang, X., Huang, L., and Wang, P., 2008. *Genetic linkage analysis of the midgut cadherin gene with resistance to Bacillus thuringiensis toxin CryIAc in the cabbage looper, Trichoplusia ni*. Annual Meeting of the Entomological Society of America. Reno, Nevada, Nov. 16 – 19, 2008.
- Huang, L., and Wang, P., 2008. *Expression of midgut genes coding for peritrophic membrane proteins in Trichoplusia ni in response to host plants and PM damage*. Annual Meeting of the Entomological Society of America. Reno, Nevada, Nov. 16 – 19, 2008.
- Li, J. and Wang, P., 2008. *Effects of peritrophic membrane alteration on midgut protease composition and activities of Trichoplusia ni*. International Symposium on Insect Midgut Biology. Guangzhou, China, Apr. 7 – 11, 2008.
- Wang, P., Zhang, X., Kain, W. and Huang, L., 2008. *Understanding the Mechanism of Bt resistance in the cabbage looper, Trichoplusia ni*. USDA Arthropod and Nematode Biology and Management PD Workshop. Reno, Nevada, Nov. 15 – 16, 2008.
- Wang, P., Zhao, J., Rodrigo-Simon, A., Kain, W. C., Janmaat, A. F., Shelton, A. M., Ferre, J. and Myers, J. 2006. *What is the mechanism of resistance to Bacillus thuringiensis toxin CryIAc in a greenhouse population of cabbage looper, Trichoplusia ni?* Annual Meeting of the Society for Invertebrate Pathology. Wuhan, China, Aug. 27 – Sept. 1, 2006.
- Guo, W., Li, G. and Wang, P. 2006. *Inheritance of resistance and effect of PM on toxicity of Bacillus thuringiensis toxin CryIAc in cabbage looper, Trichoplusia ni*. Annual Meeting of the Society for Invertebrate Pathology. Wuhan, China, Aug. 27 – Sept. 1, 2006.
- Guo, W., Li, G. and Wang, P. 2006. *A chitin deacetylase-like protein identified from the cabbage looper, Trichoplusia ni*. Annual Meeting of the Society for Invertebrate Pathology. Wuhan, China, Aug. 27 – Sept. 1, 2006.
- Wang, J., Yang, F., Li, G., Gai, S., Wang, P., Li, C., Zhou, H. and Cheng, L. 2006. *Identification of an insect intestinal mucin from the Lepidopteran peritrophic membrane of Helicoverpa armigera*. Annual Meeting of the Society for Invertebrate Pathology. Wuhan, China, Aug. 27 – Sept. 1, 2006.
- Rodrigo-Simon, A., Zhao, J., Wang, P. Shelton, A. and Ferré, J. (2005) *Caracterización de la resistencia a CryIAc de Bacillus thuringiensis en una población de invernadero de Trichoplusia ni (Hubner)*. IVth National Congress of Applied Entomology, Spanish Society of Applied Entomology. Braganca, Portugal, Oct. 17 – 21, 2005.
- Zhang, X. and Wang, P. (2005) *Identification of a cadherin-like protein from the cabbage looper, Trichoplusia ni*. Annual Meeting of the Entomological Society of America. Ft Lauderdale, FL, Dec 15 – 18, 2005.

- Rodrigo, A., Wang, P., Zhao, J., Shelton, A. and Ferré, J. (2005) *Lack of binding of Bacillus thuringiensis CryIAC toxins as the basis of resistance in a greenhouse-derived population of Trichoplusia ni*. Annual Meeting of the Society for Invertebrate Pathology. Anchorage, AK, August 7 – 11, 2005.
- Guo, W., Li, G. and Wang, P. (2004) *Unique chitin binding proteins are primary building blocks in type I peritrophic membrane formation*. Annual Meeting of the Entomological Society of America. Salt Lake City, UT, Nov 14 – 17, 2004.
- Zhao, J.-Z., Wang, P., Kain, W. C., Shelton, A. M., Janmaat, A. F. and Myers, J. (2004) *Inheritance of resistance to Bacillus thuringiensis in cabbage looper, Trichoplusia ni*. Annual Meeting of the Entomological Society of America. Salt Lake City, UT, Nov 14 – 17, 2004.
- Zhang, X., Zhang, J. and Wang, P. (2004) *Molecular cloning of cDNAs coding for four classes of lepidopteran aminopeptidases N from the midgut of Trichoplusia ni*. Annual Meeting of the Entomological Society of America. Salt Lake City, UT, Nov 14 – 17, 2004.
- Wang, P., Zhao, J., Kain, W., Shelton, A., Ferré, J., Rodrigo, A., Janmaat, A. and Myers, J. (2004) *Characterization of the resistance to Bacillus thuringiensis in cabbage looper, Trichoplusia ni*. Annual Meeting of the Entomological Society of America. Salt Lake City, UT, Nov 14 – 17, 2004.
- Wu, Q., Kikkert, J. R., Hoepting, C., Wang, P. and Shelton, A. M. (2004) *Swede midge in the US: Preparing to manage an invasive pest*. Annual Meeting of the Entomological Society of America. Salt Lake City, UT, Nov 14 – 17, 2004.
- Rodrigo, A., Zhao, J.-Z., Kain, W., Wang, P., Shelton, A. and Ferré, J. (2004) *Characterization of Resistance of Bacillus thuringiensis CryIAC toxin in Greenhouse-Derived population of Cabbage Looper, Trichoplusia ni (Hübner) (Lepidoptera: Noctuidae)*. International Symposium on the Biosafety of Genetically Modified Organisms. Montpellier, France.
- Wang, P., Li, G., Garcia, J., Zieler, H. and Granados, R. R. (2000) *Transformed lepidopteran cell lines expressing baculovirus P35 or SV40 T antigen produce high levels of AcMNPV and recombinant proteins*. Annual Meeting of the Entomological Society of America. Montreal, Canada.
- Garcia, J., Zhong, J., Li, G., Wang, P. and R.R. Granados (2000) *Midgut cell cultures from Pseudaletia unipuncta and Trichoplusia ni larvae for baculovirus studies*. Annual Meeting of the Entomological Society of America. Montreal, Canada, Dec 3 – 6, 2000.
- Wang, P., Li, G., Garcia, J., Zieler, H. and Granados, R. R. (2000) *Transformed lepidopteran cell lines expressing baculovirus P35 or SV40 T antigen produce high levels of recombinant proteins*. Gene Expression Systems Meeting. Invitrogen, San Diego, CA.
- Wang, P., Li, G., Garcia, J., Zieler, H. and Granados, R. R. (2000) *Transformed lepidopteran cell lines expressing baculovirus P35 or SV40 T antigen produce high levels of AcMNPV and recombinant proteins*. Annual Meeting of the Society for Invertebrate Pathology. Guanajuato, Mexico, Aug 13 – 18, 2000.

- Garcia, J., Zhong, J., Li, G., Wang, P. and R.R. Granados (2000) *Midgut cell cultures from Pseudaletia unipuncta and Trichoplusia ni larvae for baculovirus studies*. Annual Meeting of the Society for Invertebrate Pathology. Guanajuato, Mexico. Aug 13 – 18, 2000.
- Granados, R. R., Zhong, J., Li, G., Garcia, J. and Wang, P. (2000) *Cultured midgut cells from Pseudaletia unipuncta and Trichoplusia ni larvae for baculovirus studies*. World Congress 2000 on In Vitro Biology. San Diego, CA.
- Macedo, E. M., Shahabuddin, M., Fields, I., Wang, P., Lima, J. B. P. and Pimenta, P. F. P. (1999) *Comparative Western blot analysis of the midguts of malaria mosquito vectors*. Annual Meeting on Basic Research in Chagas' Disease and Annual Meeting of the Brazilian Society of Protozoology. Caxambu, MG, Brazil.
- Wang, P. and Granados, R. R. (1999) *Disrupting chitin/protein interactions in the midgut to impair the insect defense system*. Annual Meeting of the Entomological Society of America. Atlanta, GA, Dec 12 – 16, 1999.
- Li, G., Wang, P. and Granados, R. R. (1999) *Autographa californica nuclear polyhedrosis virus enhances the infectivity of an entomopoxvirus in larvae of Pseudaletia unipuncta*. Annual Meeting of the Society for Invertebrate Pathology. Irvine, CA.
- Wang, P. and Granados, R. R. (1999) *Disruption of the insect midgut defense system by specific targeting of the peritrophic membrane*. Annual Meeting of the Society for Invertebrate Pathology. Irvine, CA, Aug 22 – 27, 1999.
- Wang, P. and Granados, R. R. (1998) *Insect mucosal immune system: The first line of defense against microbial pathogens*. Annual Meeting of the Entomological Society of America. Las Vegas, NV.
- Wang, P. and Granados, R. R. (1998) *Insect intestinal mucins: Their role as peritrophic matrix structural proteins which form a defense barrier to intestinal microorganisms*. Third International Symposium on Molecular Insect Science. Snowbird, UT.
- Wang, P. and Granados, R. R. (1998) *Insect intestinal mucins: their role in the PM defense barrier to intestinal microorganisms*. International Colloquium on Invertebrate Pathology and Microbial Control. Sapporo, Japan.
- Granados, R. R., Wang, P. and Zhong, J. (1998) *Functional analysis of baculovirus enhancers in the infection process of insect cells*. Annual Meeting of the Society for In Vitro Biology. Las Vegas, NV.
- Wang, P., Miller, L. H. and Shahabuddin, M. (1997) *Use of monoclonal antibodies to study mosquito midgut-malaria parasite interactions*. Annual Meeting of the Entomological Society of America. Nashville, TN.
- Granados, R. R. and Wang, P. (1997) *New cell lines from Pseudaletia unipuncta displaying differential responses to baculovirus infection*. Annual Meeting of the Entomological Society of America. Nashville, TN.

- Wang, P., Miller, L. H. and Shahabuddin, M. (1997) *Searching for Plasmodium gallinaceum ookinete receptors in Aedes aegypti midgut epithelium: An immunological approach*. Annual Meeting of the American Society for Tropical Hygiene. Orlando, FL.
- Zhong, J., Wang, P. and Granados, R. R. (1997) *Studies on the possible effect of Trichoplusia ni granulosis virus enhancin on the binding and fusion of AcMNPV with insect cells*. Annual Meeting of the Society for Invertebrate Pathology, Banff, Alberta, Canada.
- Wang, P. and Granados, R. R. (1997) *Interaction of insect peritrophic membranes with microbial pathogens*. Annual Meeting of the Society for Invertebrate Pathology, Banff, Alberta, Canada.
- Wang, P. and Granados, R. R. (1996) *A midgut intestinal mucin is the target protein for a baculovirus enhancin*. Annual Meeting of the Society for Invertebrate Pathology. Cordoba, Spain.
- Wang, P. and Granados, R. R. (1996) *A novel insect protective protein and its interaction with a baculovirus enhancin*. Annual Meeting of the American Society for Virology. London, Ontario.
- Wang, P. and Granados, R. R. (1995) *A novel insect protein and its interaction with a baculovirus enhancing protein*. Annual Meeting of the Entomological Society of America. Las Vegas, NV.
- Wang, P. and Granados, R. R. (1995) *Fusion of Autographa californica nuclear polyhedrosis virus with IPLB-SF21 cells*. Annual Meeting of the Society for Invertebrate Pathology. Ithaca, NY.
- Wang, P. and Granados, R. R. (1994) *Binding of Autographa californica nuclear polyhedrosis virus to insect cells: role of a baculovirus enhancin for binding*. Annual Meeting of the Society for Invertebrate Pathology. Montpellier, France.
- Wang, P. and Granados, R. R. (1993) *Study on the interaction between a baculovirus and insect cells with a baculovirus enhancin*. Annual Meeting of the Entomological Society of America. Indianapolis, IN.
- Wang, P., Granados, R. R. and Hammer, D. A. (1992) *Binding of a baculoviral protein to lepidopterous insect midgut brush border membrane*. Annual Meeting of the Entomological Society of America. Baltimore, MD.
- Wang, P., Granados, R. R. and Hammer, D. A. (1992) *Interaction of a viral enhancing protein from Trichoplusia ni granulosis virus with the midgut epithelium of lepidopterous insects*. Annual Meeting of the American Society for Virology. Ithaca, NY.

TEACHING

Guest lectures and laboratories

Entom 4830, Insect Physiology, 2018

Tox 4900, Insect Toxicology and Insecticidal Chemistry, 2017

Entom 4830, Insect Physiology, 2015

Tox 4900, Insect Toxicology and Insecticidal Chemistry, 2015
Entom 4830, Insect Physiology, 2013
Entom 7670, Current Topics in Entomology, 2011
Entom 4830, Insect Physiology, 2011
Tox 4900, Insect Toxicology and Insecticidal Chemistry, 2008
Entom 4630, Invertebrate Pathology, 2008
Entom 7670, Current Topics in Entomology, 2008
Tox 4900, Insect Toxicology and Insecticidal Chemistry, 2005
Entom 7670, Current Topics in Entomology, 2002

Course coordinator

Entom 7670, Current Topics in Entomology, 2012 fall semester.

GRADUATE FIELD

Graduate Field of Entomology

PROFESSIONAL CONTRIBUTIONS

PROFESSIONAL SOCIETY MEMBERSHIP

Entomological Society of America
Society for Invertebrate Pathology
American Society for Microbiology

REVIEW OF MANUSCRIPTS (Manuscripts declined to review are not included):

Africa Journal of Biotechnology, Agricultural and Forest Entomology, Archives of Insect Biochemistry and Physiology, Arthropod-Plant Interactions, BioControl, Biological Control, Biocontrol Science & Technology, Biotechnology Progress, BMC Biology, BMC Genomics, BMC Molecular Biology, Comparative Biochemistry and Physiology, Crop Science, Current Microbiology, Developmental & Comparative Immunology, Electronic Journal of Biotechnology, Entomologia Experimentalis et Applicata, Entomological Science, Environmental Entomology, Environmental Microbiology, European Journal of Entomology, Evolutionary Applications, FEBS Letters, FEBS Microbiology Letters, Gene, Genetics, In Vitro Cell and Development Biology – Animal, Insect Biochemistry and Molecular Biology, Insect Molecular Biology, Insect Science, Journal of Agriculture and Food Chemistry, Journal of Asia-Pacific Entomology, Journal of Economic Entomology, Journal of General Virology, Journal of Insect Behavior, Journal of Insect Physiology, Journal of Insect Science, Journal of Invertebrate Pathology, Journal of Membrane Biology, Journal of Proteome Research, Journal of Virology, Malaria Journal, Micron, Molecular Biology Report, Nature, Nature Communications, Nature Biotechnology, Pest Management Science, Pesticide Biochemistry and Physiology, Phytochemistry, Plant Biotechnology Journal, Plant Physiology, Plant Science, PLoS Genetics, PLoS Neglected Tropical Diseases, PLoS One, PLoS Pathogens, Proteomics, Proceedings of the National Academy of Sciences of USA, Scientific Reports, Toxins.