

CURRICULUM VITAE, Zachary Y. Huang

Department of Entomology

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Bio Data

Born Jan 1st, 1962. Naturalized US citizen (1991). Married, two children.

Current Position

Associate Professor, Department of Entomology

Education

1988 Ph.D., Environmental Biology, University of Guelph, Canada

1982 B.Sc, Entomology and phytopathology, Hunan Agricultural University

Professional Experience

07/04 to present Associate Professor, Dept. of Entomology, Michigan State University

11/98 to 06/04 Assistant Professor, Dept of Entomology, Michigan State University

08/93 to 10/98 Senior Research Scientist, Department of Entomology, University of Illinois

03/90 to 07/93 Postdoctoral Fellow, Dept of Entomology, University of Illinois

08/88 to 02/90 Postdoctoral Fellow, Dept of Entomology, University of Missouri

Academic Affiliations

Michigan State University

Affiliated faculty, Center for the Study of Evolution in Action, MSU

Affiliated faculty, Ecology, Evolutionary Biology and Behavior (EEBB) Program, MSU

Affiliated faculty, Environmental Science and Policy (ESP) Program, MSU

Wayne State University

Adjunct Faculty, Department of Biological Sciences

International Institutions

Adjunct Faculty, Fujian Agriculture and Forestry University, Fuzhou, China

Senior Visiting Scientist, Xishuangbanna Tropical Botanical Garden, Yunnan, China

Guest Professorship, China Agricultural University, Beijing, China

Guest Professorship, Institute of Apicultural Research, Beijing, China

Guest Professorship, Yunnan Agricultural University, Yunnan, China

Professional Affiliations

American Association for the Advanced of Sciences

American Association for Professional Apiculturists

Entomological Society of America

Eastern Apicultural Society (Life Member)

International Union for the Study of Social Insects

Michigan Beekeepers Association

RESEARCH (50% since 2014, 25% for 1999-2013)

Professional Awards/Honors in Research

Keynote Speaker, Florida Bee College, FL Mar 2016
 Keynote speaker, North Carolina State Beekeepers Conference, NC Feb 2016
 Plenary Speaker, Taiwan Apicultural Society Annual Conference, Taiwan, Oct 2014
 Plenary Speaker, National Honey Bee Protection Conference, China Oct 2010
 EuroBee Plenary Speaker, Turkey, Sept 2010
 Plenary Speaker, the COLOSS Workshop, Spain Oct 2009
 Hambleton Award for Research Excellence in Apiculture, Eastern Apicultural Society, 2008
 Roger A. Morse Apiculture Lecture, Dept Entomology, Cornell University, 2005
 Outstanding mentor, Siemens Westinghouse Math, Science & Tech. Competition, 2003
 Best Proposal Award, Michigan Agricultural Experiment Station, MSU, Oct 2001

Publications (h-index: 28 by Web of Science, 34 by Google scholar)

Refereed Journal Articles (*=corresponding author)

92. Tibbetts, E.A., K. Crocker, **Z.Y. Huang**. 2016. Socially selected ornaments influence hormone titers of signalers and receivers. doi: 10.1073/pnas.1602707113.
91. Xie, X., **Z.Y. Huang***, Z. Zeng. 2016. Honey bee parasite chooses phoretic hosts to maximize fitness. Scientific Reports DOI: 10.1038/srep28228 (Featured on MSU news, sciencedaily.com and 40 other news sites).
90. Chen, Y.-W., P.-S. Wu*, E.-C. Yang, **Z.Y. Huang***. 2016. The impact of pyriproxyfen on the development of honey bee (*Apis mellifera* L.) colonies in field. Journal of Asia-Pacific Entomology, 19: 589-594.
89. Teichroew, J.L., J. Xu*, A. Ahrends, **Z.Y. Huang**, K. Tan, Z. Xie. 2016. Are bees at risk in China, one of the world's largest providers of pollination ecosystem services? Biological Conservation, <http://dx.doi.org/10.1016/j.biocon.2016.05.023>
88. Wang, Q., X. Xu, X. Zhu, L. Chen, S. Zhou, **Z.Y. Huang***, B. Zhou* 2016. Low-temperature stress during capped brood stage increases pupal mortality, disorientation and adult mortality in honey bees. PLoS ONE 11(5): e0154547. doi:10.1371/journal.pone.0154547
87. Li, Z.Y., Y. Xue, B. Ren, Z. Wang, **Z.Y. Huang***. 2016. Drone and worker brood microclimates are regulated differentially in honey bees, *Apis mellifera*. PLoS ONE 11(2): e0148740. doi:10.1371/journal.pone.0148740
86. Xie, X., S. Luo, **Z.Y. Huang***. 2015. China invests two times as much as USA on honey bee research. F1000 Research. <http://f1000r.es/5hi>] F1000Research 4:291 (doi:10.12688/f1000research.6621.1)
85. Wang, Y., Y. Li*, **Z.Y. Huang**, X. Chen, J. Romeis, P. Dai, Y. Peng. 2015. Toxicological, biochemical, and histopathological analyses demonstrate that Cry1C and Cry2A are not toxic to larvae of the honeybee, *Apis mellifera*. Journal of Agricultural and Food Chemistry DOI:10.1021/acs.jafc.5b01662

84. Le Conte[§], Y., **Z.Y. Huang**^{§*}, M. Roux, Z.J. Zeng, J.-P. Christidès, A.G. Bagnères. 2015. *Varroa destructor* changes its cuticular hydrocarbons to mimic new hosts. Biology Letters 11: 20150233. ([§]co-first authors) (Featured on MSU news, discovery.com, sciencedaily.com, qz.com)
83. Huang, W.-F., L. Solter*, K.I. Aronstein, **Z.Y. Huang**. 2015. Infectivity and virulence of *Nosema ceranae* and *Nosema apis* in commercially available North American honey bees. J. Invertebrate Pathology, 124: 107-113.
82. Ihle, K.E., O. Rueppell., **Z.Y. Huang**, Y. Wang, M.K. Fondrk., R.E. Jr. Page., G.V. Amdam*. 2014. Genetic architecture of a hormonal response to gene knockdown in honey bees. Journal of Heredity, doi: 10.1093/jhered/esu086.
81. Milbrath, M.O[§], T. V. Tran[§], W.-F. Huang, L.F. Solter, D.R. Tarpy, F.K. Lawrence, **Z.Y. Huang***. 2014. Comparative virulence and competition between *Nosema apis* and *Nosema ceranae* in honey bees (*Apis mellifera*). J. Invertebrate Pathology, doi:10.1016/j.jip.2014.12.006. ([§]co-first authors)
80. Shi, Y.Y., **Z.Y. Huang**, X.B. Wu, Z.L. Wang, W.Y. Yan, Z.J. Zeng*. 2014. Changes in alternative splicing in *Apis mellifera* bees fed *Apis cerana* royal jelly. J. Apic. Science 58: 25-31.
79. Shpigler, H., E. Amsalem, **Z.Y. Huang**, M. Cohen, A.J. Siegel et al. 2014. Gonadotropic and physiological functions of juvenile hormone in bumblebee (*Bombus terrestris*) workers. PLoS ONE 9(6): e100650. doi:10.1371/journal.pone.0100650
78. Zhu, X., S. Zhou, **Z.Y. Huang***. 2014. Transportation and pollination service increase abundance and prevalence of *Nosema ceranae* in honey bees (*Apis mellifera*). Journal of Apicultural Research 53: 469-471. DOI 10.3896/IBRA.1.53.4.06
77. Medved, V., **Z.Y. Huang**, A. Popadić*. 2014. Ubx promotes corbicular development in *Apis mellifera*. Biol. Lett. 10: 20131021. [Featured by MSU news, sciencedaily.com]
76. Abramson, C.I.*, T. Giray, **Z.Y. Huang**, X. Xie. 2013. Opportunities for collaborative research with honey bees in Turkey and China. Bulletin of Insectology 66: 315-318
75. Yang, W., H. Kuang, J. Wang, S. Wang, Z. Wu, X. Miao*, **Z.Y. Huang***. 2013. Comparative sucrose sensitivity in *Apis mellifera* and *A. cerana* foragers. PLoS ONE 8(10): e79026. doi:10.1371/journal.pone.0079026
74. Shi, Y.Y., L.X. Sun, **Z.Y. Huang**; X.B. Wu, Y.Q. Zhu, H.J. Zheng; Z.J. Zeng*. 2013. A SNP based high-density linkage map of *Apis cerana* reveals a high recombination rate similar to *Apis mellifera*. PLoS ONE 8(10): e76459. doi:10.1371/journal.pone.0076459
73. Luo, C.W., **Z.Y. Huang**, K. Li, X.M. Chen*, Y. Chen, Y. Sun. 2013. EAG responses of *Apis cerana* to floral compounds of a biodiesel plant, *Jatropha curcas*. J. Econ. Entomol. 106(4): 1653-1658

72. Li, W.F., **Z.Y. Huang**, F. Liu, Z.G. Li, L.M. Yan, S. Zhang, B.X. Zhong, S.K. Su*. 2013. Molecular cloning and characterization of juvenile hormone acid methyltransferase in *Apis mellifera* and its expression profile during the caste differentiation. PLoS ONE 8(7): e68544. doi:10.1371/journal.pone.0068544.
71. Milbrath, M.O. ^{\$}, X. Xie^{\$}, **Z.Y. Huang***. 2013. *Nosema ceranae* induced mortality in honey bees (*Apis mellifera*) depends on infection methods. J. Invertebrate Pathology. <http://www.sciencedirect.com/science/article/pii/S0022201113000773>
70. Wegener, J., **Z.Y. Huang**, M. W. Lorenz, J.I. Lorenz, K. Bienefeld*, 2013. New insights into the roles of juvenile hormone and ecdysteroids in honey bee reproduction. Journal of Insect Physiology, <http://dx.doi.org/10.1016/j.jinsphys.2013.04.006>
69. Goblirsch, M., **Z.Y. Huang**, M. Spivak*. 2013. Physiological and behavioral changes in honey bees (*Apis mellifera* L.) induced by *Nosema ceranae* infection: A potential detractor of social resiliency. PLoS ONE 8(3): e58165. doi:10.1371/journal.pone.0058165
68. Shi, Y.Y., W.Y. Yan, **Z.Y. Huang**, Z. L. Wang, X.B. Wu, Z.J. Zeng*. 2012. Genomewide analysis indicates that queen larvae have lower methylation levels in the honey bee (*Apis mellifera*). Naturwissenschaften DOI 10.1007/s00114-012-1004-3.
67. Wang, Z.L., T.T. Liu, **Z.Y. Huang**, B.W. Xiao, W.Y. Yan, Z.J. Zeng*. 2012. Transcriptome analysis of the Asian honey bee *Apis cerana cerana*. PLoS ONE 7(10): e47954. doi:10.1371/journal.pone.0047954.
66. Luo, C.W., K. Li, X.M. Chen*, **Z.Y. Huang**. 2012. Ants contribute significantly to the pollination of a biodiesel plant, *Jatropha curcas*. Environmental Entomology, 41: 1163-1168.
65. Li, L., F. Liu, W. Li, Z. Li, J. Pan, L. Yan, S. Zhang, **Z. Y. Huang***, S. Su*. 2012. Differences in MicroRNAs and their expressions between foraging and dancing honey bees, *Apis mellifera* L. Journal of Insect Physiology 58: 1438–1443.
64. Ahn, K., X. Xie, J. Riddle, J. Pettis, **Z.Y. Huang***. 2012. Effects of long distance transportation on honey bee physiology. Psyche. doi:10.1155/2012/193029.
63. Shi, Y.Y., X.B. Wu, **Z.Y. Huang**, Z.L. Wang, W.Y. Yan, Z.J. Zeng*. 2012. Epigenetic modification of gene expression in honey bees by heterospecific gland secretions. PLoS One, 7(8):e43727.
62. **Huang, Z.Y.** 2012. Pollen nutrition affects honey bee stress resistance. Terrestrial Arthropod Reviews 5: 1–15 (Invited review).
61. Liu, Z.Y., Z.L. Wang, W.Y. Yan, X.B. Wu, Z.J. Zeng*, **Z.Y. Huang***. 2012. The sex determination gene shows no founder effect in the giant honey bee, *Apis dorsata*. PLoS ONE 7(4): e34436. doi:10.1371/journal.pone.0034436.

60. Shi, Y.Y., **Z.Y. Huang***, Z.J. Zeng*, Z.L. Wang, X.B. Wu, W.Y. Yan. 2011. Diet and cell size both affect queen-worker differentiation through DNA methylation in honey bees (*Apis mellifera*, Apidae). PLoS ONE 6(4): e18808. doi:10.1371/journal.pone.0018808
59. Slone, J.D., T.L. Stout, **Z.Y. Huang**, S.S. Schneider. 2011. The influence of drone physical condition on the likelihood of receiving vibration signals from worker honey bees, *Apis mellifera*. Insectes Sociaux DOI 10.1007/s00040-011-0195-5.
58. Leniaud, L., E. Darrouzet, K. Ahn, F. Dedeine, **Z.Y. Huang**, A.-G. Bagnères. 2011. Ontogenetic potentialities of the worker caste in two sympatric subterranean termites. Evolution and Development. 13: 138-148 DOI: 10.1111/j.1525-142X.2011.00464.x.
57. Luo C.W., **Z.Y. Huang**, X.M. Chen, K. Li, Y. Chen, Y. Y. Sun. 2011. Contribution of diurnal and nocturnal insects to the pollination of *Jatropha curcas* in Southwest China. J. Economic Entomology. 104: 149-154 DOI: 10.1603/EC10265.
56. Tibbetts, E.A., A. Izzo, **Z.Y. Huang**. 2010. Behavioral and physiological factors associated with juvenile hormone in *Polistes* wasp queens. Behav Ecol Sociobiol, DOI 10.1007/s00265-010-1126-6
55. Tibbetts, E. A., **Z.Y. Huang**. 2010. The challenge hypothesis in an insect: juvenile hormone is associated with reproductive conflict following queen loss in *Polistes* wasps. The American Naturalist 176: 123-130.
54. Chen, Y.P., **Z.Y. Huang**. 2010. *Nosema ceranae*, a newly identified pathogen of *Apis mellifera* in the U.S. and Asia. Apidologie 41: 364-374 (Invited review).
53. Izzo A, M. Wells, **Z.Y. Huang**, Z. E. Tibbetts. 2009. Cuticular hydrocarbons correlate with fertility, not dominance, in a paper wasp, *Polistes dominulus*. Behav Ecol Sociobiol 64: 857–864, doi:10.1007/s00265-010-0902-7.
52. Johnson, R.M., **Z.Y. Huang**, M.R. Berenbaum. 2009. Role of detoxification in *Varroa destructor* (Acari: Varroidae) tolerance of the miticide tau-fluvalinate. International J Acarology, 36: 1-6
51. Navajas, M., D.L. Anderson, J. Clement, **Z.Y. Huang**, T. Zhou, L.I. de Guzman, Y. Le Conte. 2009. New Asian types of *Varroa destructor* represent new threats for world apiculture. Apidologie 40: 181-193
50. Du, Y., Y. Nomura, Z. Liu, **Z.Y. Huang**, K. Dong. 2009. Functional expression of an arachnid sodium channel reveals residues responsible for tetrodotoxin resistance in invertebrate sodium channels. Journal of Biological Chemistry 284: 33869-75
49. Wegener, J., **Z.Y. Huang**, M.W. Lorenz, K. Bienefeld. 2009. Regulation of hypopharyngeal gland activity and oogenesis in honey bee (*Apis mellifera*) workers. Journal of Insect Physiology 55:716-725

48. Kou, R., S.-Y. Chou, **Z.Y. Huang**, R.-L. Yang. 2008. Juvenile hormone levels are increased in winners of cockroach fights. Hormones and Behavior 54: 521-527
47. Kou, R., H.-W. Chang, **Z.Y. Huang**, R.-L. Yang. 2008. Pheromone, juvenile hormone, and social status in the male lobster cockroach *Nauphoeta cinerea*. Archives of Insect Biochemistry and Physiology 68: 144-155
46. Duan, J.J, M. Marvier, J. Huesing, G. Dively, **Z.Y. Huang**. 2008. A meta-analysis of effects of Bt crops on honey bees (Hymenoptera: Apidae). PLOS ONE 3(1): e1415. doi:10.1371/journal.pone.0001415
45. Chow, S.-Y, **Z.Y. Huang**, S.-C. Chen, R.-L. Yang, R. Kou. 2007. Antenna contact and agonism in the male lobster cockroach, *Nauphoeta cinerea*. Hormones and Behavior 52: 252-260
44. Wharton, K.E., F.C. Dyer, **Z.Y. Huang**, T. Getty. 2007. The role of the honey bee queen in regulating colony drone production. Behavioral Ecology 18: 1092-1099 (featured in Science)
43. Cho, S., **Z.Y. Huang**, J. Zhang. 2007. Sex-specific splicing of the honey bee doublesex gene reveals 300 million years of evolution at the bottom of the insect sex-determination pathway. Genetics 177: 1733-41
42. Liu, Z., J. Tan, **Z.Y. Huang**, K. Dong. 2006. Effect of a fluvalinate-resistance-associated sodium channel mutation from *Varroa* mites on cockroach sodium channel sensitivity to fluvalinate, a pyrethroid insecticide. Insect Biochemistry and Molecular Biology 36: 885-889
41. Cho, S., **Z.Y. Huang**, D.R. Green, D.R. Smith, and J. Zhang. 2006. Evolution of the complementary sex-determination gene of honey bees: balancing selection and trans-species polymorphisms. Genome Research 16: 1366-1375
40. **Huang, Z.Y.**, J. Zhao, L. Zhou, Y. Qin. 2006. Electronic monitoring of feeding behavior of *Varroa* mites on honey bees. Journal of Apicultural Research 45(3): 157-158
39. Zeng, Z., **Z.Y. Huang**, Y. Qin and H. Pang. 2005. Hemolymph juvenile hormone titers in worker honey bees under normal and pre-swarmer conditions. Journal of Economic Entomology 98: 274-278
38. Tan, J., Z. Liu, R. Wang, **Z.Y. Huang**, A.C. Chen, M. Gurevitz, K. Dong. 2005. Identification of amino acid residues that are critical for pyrethroid binding to an insect sodium channel. Molecular Pharmacology 67: 513-522
37. Leoncini, I., Y. Le Conte, G. Costagliola, E. Plettner, A.L. Toth, M. Wang, **Z. Huang**, J.-M. Bécard, D. Crauser, K.N. Slessor, G.E. Robinson. 2004. Regulation of behavioral maturation in honey bees by a new primer pheromone. Proceedings of National Academy of Sciences USA 101: 17561-17564. [Cited in Science, Science News, MSU news, Medical Daily etc]

36. Schneider, S.S., L. A. Lewis, **Z.Y. Huang**. 2004. The vibration signal and juvenile hormone titers in worker honey bees, *Apis mellifera*. Ethology 110: 977-985
35. **Huang, Z.Y.**, A.V. Hanley, W. Pett, J.J. Duan. 2004. Field and semi-field evaluation of impacts of transgenic canola pollen on survival and development of worker honey bees. Journal of Economic Entomology 97: 1517-1523
34. Zhou, T., D.L. Anderson, **Z.Y. Huang**, S. Huang, J. Yao, T. Ken, Q. Zhang. 2004. Identification of *Varroa* mites infesting *Apis cerana* and *Apis mellifera* in China. Apidologie 35: 645-654
33. Lin, H., C. Dusset, **Z.Y. Huang**. 2004. Short-term changes in juvenile hormone titres in honey bee workers due to stress. Apidologie 35: 319-327
32. Hanley, A.V., **Z.Y. Huang**, W. Pett. 2003. Effect of transgenic Bt corn pollen on larval development of honey bee (*Apis mellifera* L.) and greater wax moth (*Galleria mellonella* L.). Journal of Apicultural Research 42: 77-81
31. Wang, R., **Z.Y. Huang**, K. Dong. 2003. Molecular characterization of an arachnid sodium channel gene from the *Varroa* mite (*Varroa destructor*). Insect Biochemistry and Molecular Biology 33: 733-739
30. **Huang, Z.Y.**, J.H. Fewell. 2002. Modeling insect societies: from genes to colony behavior. Trends in Ecology and Evolution 17: 403-404
29. Wang, R., Z. Liu, K. Dong, P.J. Elzen, J. Pettis, **Z.Y. Huang**. 2002. Association of novel mutations in a sodium channel gene with fluvalinate resistance in the *Varroa* mite, *Varroa destructor*. Journal of Apicultural Research 40: 17-25
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27. Beshers, S.N., **Z.Y. Huang**, Y. Oono, G.E. Robinson. 2001. Social inhibition and the regulation of temporal polyethism in honey bees. Journal of Theoretical Biology 213: 461-479
26. Pearce, A.N., **Z.Y. Huang**, M.D. Breed. 2001. Juvenile hormone and aggression in honey bees. Journal of Insect Physiology 47: 1243-1247
25. Jassim, O., **Z.Y. Huang**, G.E. Robinson. 2000. Juvenile hormone profiles of worker honey bees during normal and accelerated behavioral development. Journal of Insect Physiology 46: 243-249
24. Bloch, G., D.W. Borst, **Z.-Y. Huang**, G.E. Robinson, A. Hefetz. 2000. Haemolymph JH titer, biosynthesis rates, ovarian development and the social environment in *Bombus terrestris*. Journal of Insect Physiology 46: 46-57
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22. **Huang, Z.-Y.**, E. Plettner, G.E. Robinson. 1998. Effect of social environment and mandibular gland removal on division of labor in worker honey bees. Journal of Comparative Physiology B 183: 143-152
21. Pankiw, T., **Z.-Y. Huang**, M.L. Winston, G.E. Robinson. 1998. Queen mandibular gland pheromone influences worker honey bee (*Apis mellifera* L.) juvenile hormone titers and foraging ontogeny. Journal of Insect Physiology 44: 685-692
20. Schulz, D.J., **Z.-Y. Huang**, G.E. Robinson. 1998. Effect of colony food shortage on the behavioral development of the honey bee, *Apis mellifera*. Behavioral Ecology & Sociobiology 42: 295-303
19. Robinson, G.E., **Z.-Y. Huang**. 1998. Colony integration in honey bees: genetic, endocrine, and social control of division of labor. Apidologie 29: 159-170 (Invited review)
18. Trumbo, S.T., **Z.-Y. Huang**, G.E. Robinson. 1997. Division of labor between undertaker specialists and other middle age workers in honey bee colonies. Behavioral Ecology & Sociobiology 41: 151-163
17. Cnaani, J., D.W. Borst, **Z.-Y. Huang**, G.E. Robinson, A. Hefetz. 1997. Caste determination in *Bombus terrestris*: differences in larval development and rates of JH biosynthesis. Journal of Insect Physiology 43: 373-381
16. **Huang, Z.-Y.**, G.E. Robinson. 1996. Regulation of honey bee division of labor by colony age demography. Behavioral Ecology & Sociobiology 39: 147-158
15. Bloch, G., D. W. Borst, **Z.-Y. Huang**, G.E. Robinson, A. Hefetz. 1996. Effects of social conditions on juvenile hormone-mediated reproductive development in *Bombus terrestris* workers. Physiological Entomology 21: 257-267
14. **Huang, Z.-Y.**, G.E. Robinson. 1995. Seasonal changes in juvenile hormone in worker honey bees. Journal of Comparative Physiology B 165: 18-28
13. Robinson, G.E., R.E. Page, **Z.-Y. Huang**. 1994. Temporal polyethism in social insects is a developmental process. Animal Behavior 48: 467-469
12. **Huang, Z.-Y.**, G.E. Robinson, D.W. Borst. 1994. Physiological correlates of division of labor among similarly aged honey bees. Journal of Comparative Physiology A 174: 731-739
11. Goodman, W.G., **Z.-Y. Huang**, G.E. Robinson, C. Strambi, A. Strambi. 1993. A comparison of two juvenile hormone radioimmunoassays. Archives of Insect Biochemistry & Physiology 23: 147-152
10. **Huang, Z.-Y.**, G.E. Robinson. 1992. Honey bee colony integration: Worker-worker interactions mediate plasticity in endocrine and behavioral development. Proceedings

of the National Academy of Sciences USA 89: 11726-11729 (cited in the text book “Animal Behavior” by J. Alcock)

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7. **Huang, Z.-Y.**, G.W. Otis. 1991. Inspection and feeding of larvae by worker honey bees (Hymenoptera: Apidae): Effect of starvation and food quantity. Journal of Insect Behavior 4: 305-317
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5. **Huang, Z.-Y.**, C.O. Knowles. 1991. Nicotinic and muscarinic cholinergic receptors in honey bee (*Apis mellifera*) brain. Comparative Biochemistry & Physiology C 97: 275-281
4. **Huang, Z.-Y.**, C.O. Knowles. 1990. Properties of a quinuclidinyl benzilate binding component in the bulb mite. Comparative Biochemistry & Physiology C 95: 71-77
3. **Huang, Z.-Y.** 1990. A simple *in vivo* bioassay for estimating the hypopharyngeal gland activity in honeybees (*Apis mellifera* L, Apidae, Hymenoptera). Journal of Apicultural Research 29: 75-81
2. **Huang, Z.-Y.**, G.W. Otis, P.E.A. Teal. 1989. Nature of brood signal activating the protein synthesis of hypopharyngeal gland in honey bees, *Apis mellifera* (Apidae: Hymenoptera). Apidologie 20: 455-464
1. **Huang, Z.-Y.**, G.W. Otis. 1989. Factors determining hypopharyngeal gland activity of worker honey bees (*Apis mellifera* L.). Insectes Sociaux 36: 264-276

Book Reviews

Huang, Z.Y., 2010. Hives of activity and equality, for the book “Honeybee Democracy” by Thomas D. Seeley. Times Higher Education, 2010 Oct: 54

Huang, Z.Y., 2009. “Form and Function in the Honey Bee,” book review. American Entomologist 55: 267-268

Patent

Huang, Z.Y. 2002. “Method and apparatus for control of mites in a beehive,” US Patent #6,475,061 (Other countries: China and the European Union). (Featured on Kalamazoo News Gazette, Bee World, and The Speedy Bee)

Book Edited

Liu, J., R. Wang, Z. Ouyang, S. Hu, **Z.-Y. Huang**, W. Cheng, Y. Wu. 1992. Advances & Trends in Modern Ecology. China Science & Technology Press, Beijing, China. pp 396

Book Chapters

Huang, Z.Y. 2015. 12 entries for various terms for the book “ABC and XYZ of Bee Culture”. (The book is still being edited).

Huang, Z.Y. and Y. Wang. 2015. Social physiology of honey bees: differentiation in behaviors, castes, and longevity, Chapter in “Hive and the Honey Bee”, Dadant. Pp 183-200.

Frazier, J., J. Pflugfelder, P. Aupinel, A. Decourtype, J. Ellis, C. Scott-Dupree, **Z. Huang**, et al. 2015. Assessing effects through laboratory toxicity testing. In Pesticide Risk Assessment for Pollinators (ed D. Fisher and T. Moriarty). Willey Blackwell. Pp. 75-94.

Le Conte, Y., **Z.Y. Huang**, G.E. Robinson. 2008. "Quorum sensing" in honeybees: Pheromone regulation of division of labor. In (eds: S.C. Winans, B.L. Bassler) Chemical Communication among Bacteria. ASM Press, Washington DC. Chapter 30, pp 463-468

Huang, Z.Y. 2007. Beekeeping in various parts of the world: China. In (eds: H. Shimanuki, K. Flottum, A. Harman). The ABC and XYZ of Bee Culture: An Encyclopedia of Beekeeping. 92-93. The A.I. Root Company, Medina, OH

Huang, Z.-Y., G.E. Robinson. 1999. Social control of division of labor in honey bee colonies. In (eds: C. Detrain, J.L. Denoubourg, J.M. Pasteels) Information Processing in Social Insects. Birhauser, pp 165-186

Huang, Z.-Y. 1999. Regulation of division of labor in worker honey bees: the activator-inhibitor model. In (eds: L.J. Connor, R. Hoopingarner) Apiculture in the 21st Century. Wicwas Press, pp 25-37

Huang, Z.-Y. 1992. Advances in honey bee ecology. In: (eds: J.G. Liu et al.) Advances and Trends in Modern Ecology. (In Chinese) pp 187-206

Conference Proceedings

Milbrath, M.O., X.B. Xie, **Z.Y. Huang**. 2013. Carbon dioxide anesthesia affects mortality of *Nosema ceranae* infected honey bees, Proceedings of the American Bee Research Conference, American Bee Journal 153: 305. Abstract

Xie, X.B., G.W. Bian, Z. Xi, **Z.Y. Huang**. 2013. Using RNAi to hunt for genes important for *Varroa* survival and reproduction, Proceedings of the American Bee Research Conference, American Bee Journal 153: 305. Abstract

Yang, W.C., H.O. Kuang, J. Wang, S.S. Wang, Z.H. Wu, X.Q. Miao, **Z. Y. Huang**. 2013. Comparative sucrose sensitivity in *Apis mellifera* and *A. cerana* foragers, Proceedings of the American Bee Research Conference, American Bee Journal 153: 310. Abstract

Goblirsch, M., **Z.Y. Huang**, M. Spivak. 2012. Physiological effects of *Nosema ceranae* on worker honey bees, Proceedings of the American Bee Research Conference, American Bee Journal 152: 401. Abstract

Huang, Z.Y., J. Adam, A. Jiang. 2012. Effect of single and mixed species infection of *Nosema ceranae* and *Nosema apis* on worker foraging behavior and longevity, Proceedings of the American Bee Research Conference, American Bee Journal 152: 402. Abstract

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Liu, Z.Y., Z.L. Wang, W. Y. Yan, X. B. Wu, Z. J. Zeng, **Z.Y. Huang**. 2011. The sex determination gene in giant honey bees (*Apis dorsata*) shows no founder effect. Honey Bee Genomics & Biology, Cold Spring Harbor Laboratory, NY. p31, Abstract

Huang, Z.Y., K. Ahn, J. Riddle, J. Pettis. 2010. Effect of transportation on honey bee physiology. Proceedings of the American Bee Research Conference, American Bee Journal 150: 502-503. Abstract

Huang, Z.Y. 2010. Flexibility of division of labor in honey bees: all explained by a simple model. Fourth European Conference of Apidology. p 67. Abstract

Huang, Z.Y., T. Zhou, X. Xie, S. Huang, D. Anderson, Y. Le Conte, Z. Zeng. 2010. "Varroa mite reproductive biology. Fourth European Conference of Apidology. p 39. Abstract

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Xie, X., **Z.Y. Huang**. 2008. Family planning in *Varroa* mites: why prefer nurses? The 9th Asian Apicultural Association Conference Abstracts, p 104. Abstract

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Cho, S., **Z.Y. Huang**, D. Smith and J. Zhang. 2006. "Evolution of sex determination gene in the honey bees," Scientific Proceedings of International Union for the Study of Social Insects Congress XV. p169. Abstract

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Qin, Y., **Z.Y. Huang**. 2004. Dynamics of *Nosema* spores in honey, beeswax and their relationship to worker infection, Proceedings of the American Bee Research Conference, American Bee Journal 144: 406-407, Abstract

Huang, Z.Y., R. Lin. 2004. JH titers, biosynthesis and metabolism in honey bee workers infected by a microsporidia parasite, *Nosema apis*. Eighth International Conference on the Juvenile Hormones, Scientific Program Abstracts, p12, Abstract

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Huang, Z.-Y., G.E. Robinson. 1998. Regulation of onset of foraging in honey bees: a worker primer pheromone in the mandibular glands? Proceedings of the American Bee Research Conference, American Bee Journal 138: 297. Abstract

Huang, Z.-Y., G.E. Robinson. 1994. Seasonal changes in juvenile hormone levels in worker honey bees (*Apis mellifera*). In: (eds: A. Lenoir, G. Arnold & M. LePage) Les Insectes Sociaux. Proceedings of the 12th Int'l Congress of IUSSI, 1994, Paris, France, p236. Abstract

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Huang, Z.-Y., G.W. Otis. 1986. Mechanism of hypopharyngeal gland activation in honey bees (*Apis mellifera*). In: (eds: J. Eder, H. Rembold) Chemistry and Biology of Social Insects. Proceedings of the 10th International Congress of IUSSI, 1986, Munich, Germany, p 224. Abstract

Funded Research Proposals

Project (-grantor)	PI(s)	Begin Date	End Date	Total Award	Huang Award
2016					
Protecting Pollinators with Economically Feasible and Environmentally Sound Ornamental Horticulture—NIFA-SCRI	Huang	8/1/16	8/30/20	\$7 mill	\$180,000
Varroa control using new plant based chemicals—North Dokata Dept of Ag.	Huang	8/1/16	12/30/16	\$27,431	\$27,431
Indoor rearing of honey bees -UIUC via DARPA	Huang	4/1/16	3/31/18	\$163,188	\$163,188
Michigan Beekeepers Association	Huang	4/1/16	3/31/17	\$6,800	\$6,800
2015					
Using vaccines to increase pollinator health: testing a honey bee <i>Nosema</i> vaccine -NIFA exploratory grant	J. Nieh, Huang	5/1/16	4/31/17	\$100,000	\$37,245
Changes in Pesticide Residues in Honey and Pollen in Michigan -Bayer Crop Science	Huang	4/01/16	9/01/16	\$21,924	\$21,924
2014					
Changes in Pesticide Residues in Honey and Pollen in Michigan -Bayer Crop Science	Huang	3/01/14	9/01/15	\$59,645	\$59,645
Dissecting the stresses associated with pollination services in honey bee colonies -Department of Entomology, MSU	Huang	3/01/14	9/01/15	\$10,000	\$10,000
Growing Greenhouse and Nursery Plants Safe for Pollinators -MSU Project GREEN	D. Smitley	3/01/14	9/01/15	\$56,125	\$2,931
2012					
Pollen nutrition of honey bees -Project Apis m	Huang	3/01/12	9/01/12	\$10,000	\$10,000
Hunting genes important for <i>Varroa</i> survival and reproduction - MSU Project GREEN	Huang	3/01/12	6/30/13	\$20,000	\$20,000
2011					
Using RNAi as a method for controlling <i>Varroa destructor</i> -National Honey Board -Almond Board of California -Foundation for the Preservation of Honey Bees	Huang Z.Y. Xi	5/01/11	09/30/12	\$20,190 \$17,960 \$14,850	\$20,190 \$17,960 \$14,850
Pesticide- <i>Nosema</i> interactions across developmental stages of honey bees - MSU Project GREEN	Huang	3/01/11	6/30/12	\$12,000	\$12,000
Are workers previously exposed as larvae to pesticides more susceptible to <i>Nosema ceranae</i> ? - National Honey Board	Huang	9/01/11	8/30/12	\$13,080	\$13,080

Project (-grantor)	PI(s)	Begin Date	End Date	Total Award	Huang Award
2010					
Toxicity of various pyrethroid insecticides to <i>Varroa</i> mites - MSU Project GREEN	Huang K. Dong	3/01/10	6/30/11	\$30,000	\$26,000
Effect of an endoparasite, <i>Nosema spp.</i> , on honey bee behavior and physiology - MSU Project GREEN	Huang	3/01/10	6/30/11	\$30,000	\$30,000
2008					
Sustainable solutions to problems affecting health of managed bees -USDA-CAP	Huang	9/01/08	8/30/14	\$4.3 mill (Delaplane)	\$186,000
Mechanisms of <i>Varroa</i> control by thymol and other essential oils -Almond Board of California	Huang	9/01/08	8/30/09	\$18,000	\$18,000
<i>Nosema</i> control by formic acid and essential oils -Almond Board of California	Huang	9/01/08	8/30/09	\$10,510	\$10,510
Physiological changes in migratory and non-migratory honey bees: a comparative study, National Honey Board	Huang	9/01/08	8/30/09	\$12,000	\$12,000
Changes in hormonal and protein levels in honey bees experiencing migratory transportation -N.A. Pollinator Protection Campaign	Huang	9/01/08	8/30/09	\$7,000	\$7,000
2007					
Mechanisms of <i>Varroa</i> control by thymol and other essential oils - Almond Board of California	Huang	3/01/07	6/30/08	\$18,000	\$18,000
Combating CCD and winter loss in Michigan honey bees - MSU Project GREEN	Huang	3/01/07	6/30/08	\$113,000	
2006					
<i>Varroa</i> mite biology and alternative methods for its control - MSU Project GREEN	Huang	3/01/06	6/30/07	\$105,000	\$105,000
2005					
Improving in vitro larval rearing technique for assessing effects of transgenic plant proteins on honey bees - Agricultural Biotechnology Stewardship Technical Committee	Huang	3/01/05	6/30/07	\$45,000	\$45,000
2004					
Pyrethroid resistance mechanisms in Arachnids -USDA-NRI	K. Dong Huang	3/01/04	6/30/05	\$145,000	\$50,000
2003					
<i>Nosema</i> disease in honey bees: spore load in honey and wax, epidemiology and effect of hygienic queens -Michigan Department of Agriculture	Huang	3/01/03	9/30/04	\$10,000	\$10,000

Project (-grantor)	PI(s)	Begin Date	End Date	Total Award	Huang Award
Native pollinator diversity and its contribution to the productivity of Michigan agriculture - MSU Project GREEN	R. Isaacs Huang	3/01/03	9/30/04	\$19,000	\$2,000
2002					
Resistance management of the <i>Varroa</i> mite, the most serious pest of honey bees - MSU Project GREEN	Dong Huang	3/01/02	9/30/05	\$124,000	\$62,000
Field test of an alternative method for controlling the most serious honey bee pest, the <i>Varroa</i> mite - USDA-PMAP	Huang	3/01/02	9/30/05	\$99,570	\$99,570
The role of melatonin in division of labor in honey bees - Natural Science Foundation of China	Qin Huang	3/01/02	9/30/05	~\$30,000 (200,000 RMB)	
Disease and pest management in Michigan honey bees - Michigan Department of Agriculture	Huang	3/01/03	9/30/04	\$30,288	\$30,288
An online course 'Apiculture and Pollination' for on-campus students and distance learning -Lilly Endowment Teaching Fellowship Program, MSU	Huang	3/01/02	9/30/03	\$7,000	\$7,000
Prototype development of a new device for controlling the most serious honey bee pest, the <i>Varroa</i> mite - Michigan Universities Commercialization Initiatives (MUCI) Challenge Fund	Huang	3/01/02	9/30/04	\$30,000	\$30,000
2001					
Effect of transgenic pollen on honey bee health - Monsanto Company	Huang	3/01/01	9/30/03	\$28,000	\$28,000
Management of <i>Varroa</i> mite, <i>Nosema</i> disease and American foulbrood disease in Michigan honey bees - Michigan Department of Agriculture	Huang	3/01/01	9/30/03	\$42,000	\$42,000
Linking growers and beekeepers: a world wide web database for pollination services - MSU Project GREEN	Huang W. Pett	3/01/01	9/30/03	\$5,500	\$5,500

Project (-grantor)	PI(s)	Begin Date	End Date	Total Award	Huang Award
Linking pickle growers and beekeepers: a world wide web database for pollination services -Pickle Packers International	Huang W. Pett	3/01/01	9/30/03	\$500	\$500
The role of melatonin in division of labor in honey bee workers -Intramural Research Grants Program, MSU	Huang	3/01/01	9/30/03	\$45,000	\$45,000
2000					
Effects of pollen from genetically modified plants on honey bee development, survival and behavior and its potential use for controlling honey bee pests - MSU Project GREEN	Huang W. Pett	3/01/00	9/30/01	\$15,500	\$15,500
Pest and disease management in Michigan honey bees -Michigan Department of Agriculture	Huang	3/01/00	9/30/01	\$42,000	\$42,000
1999					
Infertility of <i>Varroa</i> on <i>Apis cerana</i> worker brood: physiological and genetic mechanisms - USDA-Scientific Cooperation Program	Huang	3/01/99	9/30/02	\$30,000	\$30,000
<i>Varroa</i> mite control in Michigan: resistance, management, resistance mechanism and development of non-pesticide alternatives - MSU Project GREEN	Huang Dong	3/01/99	6/30/02	\$150,000	\$75,000
Small hive beetle survey and detection - USDA-Cooperative Agricultural Pest Survey Grant	Huang	3/01/99	6/30/01	\$10,000	\$10,000
Mechanisms of infertility of <i>Varroa</i> on <i>Apis cerana</i> worker brood -Natural Science Foundation of China	Huang	3/01/99	6/30/03	~\$20,000 (120,000 RMB)	
<i>Varroa</i> mite control in Michigan -Michigan Department of Agriculture	Huang	3/01/99	6/30/02	\$20,000	\$20,000
1998					
Mode of action of <i>Nosema apis</i> -University of Illinois Research Board Grant	Huang	3/01/98	6/30/99	\$8,000	\$8,000
1997					
Mode of action of <i>Nosema apis</i> -USDA-NRI	Huang	9/01/97	8/30/01	\$100,000	\$100,000

Project (-grantor)	PI(s)	Begin Date	End Date	Total Award	Huang Award
1994					
Travel Grant, International Union for the Study of Social Insects	Huang	8/01/94	9/30/94	\$500	\$500
1993					
Juvenile hormone and division of labor in <i>Apis cerana</i> -China -Cornell Fellowship (funded by Rockefeller Foundation)	Huang	3/01/93	9/30/94	\$15,000	\$15,000

Invited Panels

Ornamental Horticulture Pollinator Meeting, IR-4, Baltimore, MD, Dec 2014 [to discuss issues of pesticides in ornamental plants, how to study its effects and to mitigate them.]

Honey bee forage and nutrition summit, USDA-NIFA, VA, Oct, 2014 [to discuss honey bee nutrition, how we can plant differently to help with honey bees, what research should be done in these areas.]

Varroa summit, USDA-NIFA, MD, Feb 2014 [to discuss *Varroa* biology, effects on bees, interactions with other factors, and its control]

Potential Risks of Plant Protection Products to Pollinators: A SETAC Pellston Workshop, Pensacola Beach, FL, Jan 2011 [to discuss toxicity of chemicals to pollinators and standardized procedures to measure them, a book was published in 2015]

Plant Science Innovative Team Group Meeting, Guangzhou, China, 2009, 2010 [to study pollination biology of highland plants in Shangri-La, Yunnan, China]

Nosema Disease: Lack of Knowledge and Work Standardization, Guadalajara, Spain, Oct 2009 [to discuss standardization of procedures for studying *Nosema ceranae*]

EPA/USDA Science Panel on honey bee pesticide chronic toxicity laboratory and field testing, Arlington, VA, July 2009 [to discuss testing procedures for chronic toxicity of pesticides to honey bees]

USDA honey bee research lab five year plan review panel (year omitted to remain anonymous) [to review five year plans by various USDA honey bee labs]

Invited Conference Presentations

1. **Huang, Z.Y.** 2014. Transportation and pollination services increase prevalence and abundance of *Nosema ceranae*,” PI-E Section Symposium: Pesticides, Parasites and Pests: The Impacts of Environmental Stressors on Beneficial Insects, Entomological Society of America, Portland, OR, Nov
2. **Huang, Z.Y.** 2014. Colony Collapse Disorder related research in the USA, Plenary speaker, Taiwan Apicultural Society Annual Conference. Oct.

3. **Huang, Z.Y.** 2013. Large scale beekeeping in the United States: practice and equipment, Keynote speaker at National Symposium on Honey Bee Biology, Xinjiang, China, July 2013
4. **Huang, Z.Y.** 2013. Honey bees (*Apis* spp): beauty and beasts,” Symposium “Lady bugs, butterflies, and bees: Esthetics, conservation, and agricultural benefits of invertebrates” at the 13th International Congress of Invertebrate Reproduction and Development, Detroit, MI, July
5. **Huang, Z.Y.** 2012. Honey bee landscape learning and effect of pesticides. Keynote speaker at International Symposium on Bee Health and Protection at Ilan University, Taiwan, Nov. 2012
6. **Huang, Z.Y.** 2010. Flexibility of division of labor in honey bees: all explained by a simple model. Fourth European Conference in Apidology, Ankara, Turkey, Sept
7. **Huang, Z.Y.** , T. Zhou, X. Xie, D. Anderson, Y. Le Conte, S. Huang, Z. Zeng, A.-G. Bagnères. 2010. *Varroa* mite reproductive biology. Plenary Talk, Fourth European Conference in Apidology, Ankara, Turkey, Sept.
8. **Huang, Z.Y.** 2010. Relay learning in honey bees and pesticide interactions, E-Presentation to the CCD Steering Committee Meeting, Feb.
9. **Huang, Z.Y.**, T. Zhou, X. Xie, D. Anderson, Y. Le Conte, S. Huang, Z. Zeng, A.-G. Bagnères. 2010. *Varroa* mite can mimic host hydrocarbons, Plenary Talk, National Honey Bee Protection Conference, China, Oct.
10. **Huang, Z.Y.** 2009. Update on the honey bee larval rearing assay, in the Symposium “Regulation of Transgenic Crops: The State of the Science” Entomological Society of America, Indianapolis, IN, Dec.
11. **Huang, Z.Y.** 2009. How *Nosema apis* affect honey bee foraging, Plenary Talk at the COLOSS Workshop “Nosema Disease: Lack of Knowledge and Work Standardization”, Guadalajara, Spain, Oct.
12. **Huang, Z.Y.** 2008. Effect of transportation on honey bee physiology, North American Pollinator Protection Campaign Conference, Washington DC, Oct.
13. **Huang, Z.Y.** 2007. Standardized laboratory assay for assessing effects on honey bee larvae, Symposium: Harmonizing laboratory methods to evaluate potential effects of GM crops on non-target arthropods, Entomological Society of America, San Diego, CA, Dec.
14. **Huang, Z.Y.** 2006. Regulation of division of labor in honey bees, from humans to bees, and back, Symposium: Contribution of Social Insect Studies to Science and Society, Entomological Society of America, Indianapolis, IN, Dec.
15. **Huang, Z.Y.** 2006. Regulation of Foraging Age in Honey Bees by a Primer Pheromone, International Entomology Symposium, Beijing, China, Aug.
16. **Huang, Z.Y.** 2006. Does the parasite *Nosema apis* manipulate host behavior through juvenile hormone? International Entomology Symposium, Beijing, China, Aug.

17. **Huang, Z.Y.**, D. Anderson, T. Zhou, S.X. Huang, J. Yao, Q. Zhang. 2004. Absence of *Varroa jacobsoni* in *Apis mellifera* and *A. cerana* in China, 7th Asian Apicultural Association Conference, Laguna, Philippines, Feb.
18. **Huang, Z.Y.**, D. Onstad, D. Crowder. 2003. Modeling *Nosema* disease in honey bee colonies, Symposium on Epizootiological Models held at the Annual meeting of the Soc. for Invertebrate Pathology, Burlington, VT, Aug.
19. **Huang, Z.Y.**, R. Lin. 2002. Change of honey bee social behavior caused by a microsporidian parasite: physiological mechanisms, Section C Symposium “Parasites, Pathogens and Insect Sociality,” Annual Meeting of Entomological Society of America, Fort Lauderdale, FL, Nov.
20. **Huang, Z.Y.** 2001. Mitezapper: a new device for *Varroa* mite control, XXXVII International Apicultural Congress, Durban, South Africa, Oct.
21. **Huang, Z.Y.** 2000. Social inhibition of foraging honey bees, Santa Fe Institute Social Insects Working Group, Santa Fe, NM Oct.
22. **Huang, Z.Y.** 2000. Juvenile hormone and division of labor in *Apis cerana*, 7th IBRA conference on tropical bees: management and diversity & 5th Asian apiculture association conference, Chiangmai, Thailand, Mar.
23. **Huang, Z.Y.** 1998. Informal conference: Career development for Chinese entomologists, Annual Meeting of Entomological Society of America, Las Vegas, NE, Dec.
24. **Huang, Z.Y.** 1998. Endocrine Control of Social Behavior in Invertebrates, Animal Behavior Society Meeting, Carbondale, IL, July.
25. **Huang, Z.Y.** 1997. Apiculture for the 21st Century, International Symposium, E. Lansing, MI, June.
26. **Huang, Z.Y.**, G.E. Robinson. 1994. The 12th International Congress of IUSSI, Paris, France, Aug.
27. **Huang, Z.Y.**, G.E. Robinson. 1992. Annual Meeting of Entomological Society of America, Baltimore, MD, Dec.
28. **Huang, Z.Y.**, G.E. Robinson. 1992. The 3rd International Congress of Neuroethology, McGill University, Montreal, Canada, Aug.

Presentations at Institutions (Invited)

2016:

Wayne State University, Dealing with major threats to honey bees: *Varroa destructor* and *Nosema ceranae*.

MSU Entomology, Drugged and driven is more deadly than drugged alone; Using digital photography to see through insects' eyes.

2015:

29. Fujian Agr and Forestry University, China, Pesticide toxicity varies with behavioral status, temperature and transportation status.
30. Jiangxi Agr University, China, Experimental design, statistics and composing a manuscript.
31. Institute of Apicultural Research, China, Regulation of *Varroa* reproduction.
32. MSU Horticulture, Dealing with major threats to honey bees and food security: *Varroa* mites and *Nosema ceranae*.
33. Arizona State University, Social Insect Research Group, Research on *Varroa* and *Nosema* at MSU.

2014:

34. UC San Diego, Does *Nosema apis* manipulate its host? Departmental Seminar
35. Institute of Apicultural Research, Beijing, China: Methods for studying pollination
Fujian Agriculture and Forestry University, Fuzhou, China:
 36. Methods for studying pollinators and pollination
 37. What do honey bee see?
 38. Mechanisms of social behavior in honey bees
39. National Ilan University, Taiwan, College education in USA and China

2013:

40. Fujian Agriculture and Forestry University, Fuzhou, China
41. Nanchang University, Jiangxi, China
42. Institute for Plant Protection, National Academy of Agricultural Sciences, Beijing, China
Approaches for evaluating the effects of transgenic plant pollen and pesticides on honey bees (*Apis mellifera*), Bayer, Sept 2013

2012:

43. Fujian Agriculture and Forestry, Fuzhou, China.
44. Jiangxi Agricultural University, Nanchang, China
45. Jilin Apicultural Research Institute, Jilin, China (4 talks)

46. Academia Sinica, Teipei, Taiwan
Using RNAi to look for genes important for *Varroa* survival and reproduction
47. National Chung Hsing University, Taichung, Taiwan
Effect of pesticides on honey bee homing,
48. National Taiwan University, Taipei, Taiwan
Effect of transgenic pollen on honey bee health.

2011:

49. Fujian Agriculture and Forestry University, Fuzhou, China
50. Henan College of Science and Technology, Xinxiang, China
51. Hunan Agricultural University, Changsha, China
52. Zhejiang University, Hangzhou, China
53. Jiangsu Academy of Agricultural Sciences, Nanjing, China
54. Zhejiang Academy of Agricultural Sciences, Hangzhou, China

2010:

55. Zhejiang University, Hangzhou, China
56. Jiangxi Agricultural University, Jiangxi, China (2 talks)
57. Horticulture Research Institute, Shang'xi Academy of Agricultural Sciences

58. Institute of Resource Insects, Academy of Agricultural Sciences, China (2 talks)

2009:

60. Sydney University, Australia

61. Macquarie University, Australia

62. Commonwealth Scientific and Industrial Research Organization, Australia

63. Sichuan University (2 talks), Nanchang University (2 talks), China

67. Xishuanbanna Tropical Botanical Garden, China

2008:

68. Zhejiang University Honey Bee Lab (S.K. Su), 4 talks, Hangzhou, China

74. Zhejiang University, Zoological Institute, Hangzhou, China

75. Jiangxi Agricultural University, Honey Bee Institute, Nanchang, China

76. Shanghai Institute of Plant Physiology and Ecology, Shanghai, China

77. Hunan Agricultural University, College of Life Sciences, Changsha, China

78. Zhongshan University, Environmental Group (B.C. Xia), Guangzhou, China

79. "Does *Nosema apis* manipulate honey bee behavior through JH production?" Social Insect Research Group, Arizona State University, March 2008

80. "Honey bees, juvenile hormone and *Nosema apis*, Is it really host manipulation?" Institut de Recherche sur la Biologie de l'Insecte, Université de Tours, France, Jan 2008

81. "Does *Nosema apis* manipulate honey bee hosts via juvenile hormone?" Department of Entomology, University of Maryland, Oct 2007.

82. "Evolutionary ecology of the complementary sex determination gene in honey bees," Department of Entomology, China Agricultural University, Sept 2007

83. "Importance of honey bees in Michigan agriculture and threats they face," Plant Coalition, Michigan State University, June 2007

84. "Honey bees: overview of honey bee research at MSU bee biology lab," Department of Horticulture, Michigan State University, April 2007

85. "Insect portraiture, two perspectives," Department of Entomology, Michigan State University, East Lansing, MI, Feb 2007 (with David Cappaert)

86. Resistance mechanisms of *Varroa* mites to chemicals," Jilin Apicultural Institute, Jilin, China, August 2006

87. "Evolution of the complementary sex-determination gene of honey bees," Jilin Apicultural Institute, Jilin, China, August 2006

88. "Mitezapper as a control method for *Varroa* mites," Jilin Apicultural Institute, Jilin, China, August 2006

89. "Honey bee research in the United States," Jilin Apicultural Institute, Jilin, China, August 2006

90. "Honey bee research and extension at MSU," Jilin Apicultural Institute, Jilin, China, August 2006
91. "Honey bee queen regulates egg gender when presented only drone cells," Rothenbuler Bee Laboratory, Ohio State University, Columbus, OH, June 2006
92. "Mechanism of Division of labor in honey bees," College of Life Sciences, Tunghai University, Taichung, Taiwan, Mar 2006
93. "Mechanism of Division of labor in honey bees," Department of Entomology, National Chung Hsing University, Taichung, Taiwan, Mar 2006
94. "Mechanism of Division of labor in honey bees," Department of Entomology, National Taiwan University, Taiwan, Mar 2006
95. "Does *Nosema* parasite produce juvenile hormone to manipulate honey bee behavior," Institute of Cellular and Organismal Biology, Academia Sinica, Taipei, Taiwan, Mar 2006
96. "Advances of insect pollination inside greenhouses," Institute of Vegetable and Flower Researches, Chinese Academy of Agricultural Sciences, Beijing, China, Mar 2006
97. "Honey bee research at MSU," College of Life Science, Sun Yat-Sen University, Guangzhou, China, Feb 2006
98. "Honey bee research at MSU," Bee Research Center, Guangdong Province Institute of Entomological Research, Guangdong, China, Feb 2006
99. "Regulation of division of labor in honey bees," College of Agronomy, Tropical Agricultural University of South China, Hainan, China, Feb 2006
100. "Regulation of division of labor by a primer pheromone: how a simple model played the big role," Roger A. Morse Apiculture Lecture, Department of Entomology, Cornell University, Dec 2005
101. "Research Experience with honey bees and vision for insect pollination biology," USDA Solitary Bee Lab, Logan, UT, July 2005
102. "Working with honey bees, the past, the present and the future," USDA Honey Bee Lab, Weslaco, TX, June 2005
103. "Social modulation of foraging age in worker honey bees", Department of Biological Sciences, East Tennessee State University, Johnson City, TN, Sept 2004
104. "Regulation of foraging age in honey bees," Honey Bee Research Institute, Jiangxi Agricultural University, Nanchang, Jiangxi, China, April 2004
105. "Honey bee extension, teaching and research at the Michigan State University," Honey Bee Research Institute, Jiangxi Agricultural University, Nanchang, Jiangxi, China, April 2004

106. "Working with bees and their keepers, the Michigan experience," Department of Environmental Biology, University of Guelph, Guelph, Ont, Canada, Feb 2004
107. "Effect of transgenic corn pollen on honey bees and their pest," Dept. of Natural Resources and Environmental Sciences, University of Illinois, Oct 2003
108. "Honey bee queens regulate sex ratio by overriding a highly stereotyped behavioral program," Brain and Behavioral Group, MSU, Sept 2003
109. "Working with honey bees and their keepers: A five year summary," Department of Entomology, MSU, Sept 2003
110. "Let us bee social – what do we know about honey bee sociobiology," Xishuangbanna Tropical Botanical Garden, Yunnan, China, Apr 2002
111. "*Apis cerana* in China and how do they resist the *Varroa* mites," Ecology of Invertebrates Seminar, National Institute of Agricultural Research in Avignon and the Univ. of Avignon & the Countries of Vaucluse, France, Mar 2002
112. "Resistance mechanisms of *Varroa* mites to chemicals," Ecology of Invertebrates Seminar, National Institute of Agricultural Research in Avignon and the Univ. of Avignon & the Countries of Vaucluse, France, Mar 2002
113. "Melatonin and division of labor in honey bees," Brain and Behavior Group, Neuroscience Program, MSU, Feb 2002
114. "Basic and applied research combined: honey bee projects at MSU," Zoological Institute, Chinese Academy of Sciences, Beijing, China, June 2001
115. "Honey bee research projects at MSU," Department of Entomology, China Agricultural University, June 2001
116. "Mitezapper: a new method for controlling *Varroa* mites," Institute of Apicultural Research, Chinese Academy of Agricultural Sciences, Beijing, China, June. 2001
117. "Basic and applied research combined: honey bee research at MSU," Xishuangbanna Tropical Botanical Garden, Yunnan, China, May 2001
118. "Importance of honey bee pollination for agriculture," International workshop for sustainable agricultural in developing countries," Institute of Pomology, Chinese Academy of Agricultural Sciences, Hebei, China, Aug 2000
119. "Bumble bee biology and commercial rearing," Institute of Vegetable Research, Chinese Academy of Agricultural Sciences, China, Aug 2000
120. "Honey bee research at Michigan State University and North America," Institute of Apicultural Research, Chinese Academy of Agricultural Sciences, Aug 2000

121. "Recent entomological research in North America," Hunan Agricultural University, Dec 1999
122. "Regulation of division of labor in honey bees," Dept of Apiculture, Yunnan Agricultural University, Nov 1999
123. "Regulation of foraging age in honey bee workers," Dept. Entomology, Purdue University, Oct 1999
124. "Regulation of behavioral development in honey bees: genetic physiological, and biochemical mechanisms," Dept. Entomology, Michigan State University, June 1998
125. "*Nosema* disease: a hidden threat to honey bees," Dept. Entomology, Michigan State University, June 1998
126. Dept. Entomology, Michigan State University, Sept 1997
127. Dept. Biological Sciences, Illinois State University, Feb 1996
128. Hunan Agricultural College, Hunan, China, Dec 1993
129. Honey Bee Research Institute, Academy of Agricultural Science, Beijing, China, Oct 1993
130. Dept. of Plant Protection, Beijing Agricultural University, Beijing, China, Oct 1993
131. Entomological Society of Beijing, Beijing, China, Sept 1993
132. Dept. of Environmental Biology, University of Guelph, Ont, Canada, May 1988
133. Dept. of Entomology, University of Missouri, Columbia, MO, Nov 1988
134. The Dyce Laboratory, Cornell University, Ithaca, NY, Oct 1984

Presentations at Professional Meetings

135. S. Luo, M. Yue, X. Xie, **Z.Y. Huang**. 2015. Sensitivity to insecticides depend on honey bee behavioral status, American Bee Research Conference, Ponte Vedra Beach, FL.
136. **Huang, Z.Y.**, S. Luo. 2015. Transportation and simulated transportation increase honey bee sensitivity to insecticides, American Bee Research Conference, Ponte Vedra Beach, FL. (S. Luo)
137. Rangel, J., P. Lau, J. Sullivan, A. Cabrera, **Z.Y. Huang**, J.D. Ellis. 2015. Pesticides found in pollen and nectar collected by honey bees in urban environments, American Bee Research Conference, Ponte Vedra Beach, FL.
138. Xie, X., **Z.Y. Huang**. 2015. Relocation reduces honey bee colony weight gain, American Bee Research Conference, Ponte Vedra Beach, FL.

139. Wang, Q., **Z.Y. Huang**. 2015. Toxicity of insecticides to honey bees is temperature dependent, American Bee Research Conference, Ponte Vedra Beach, FL.
140. **Z.Y. Huang**, J.Rangel, J.D. Ellis, A. Cabrera, J. Sullivan. 2015. Tracking seasonal and regional changes of pesticides in bee-collected nectar and pollen in urban and suburban environments. Society of Envir. & Toxicol. Chemistry Conference, Salt Lake City, UT.
141. **Huang, Z.Y.**, X. Zhu, S. Zhou. 2014. Transportation and pollination services increase prevalence and abundance of *Nosema ceranae* in honey bees, American Bee Research Association, San Antonio, TX.
142. **Huang, Z.Y.**, W. Yang, X. Miao. 2013. Comparative sucrose sensitivity in *Apis mellifera* and *A. cerana* foragers, Poster, Annual Conference of Entomological Society of America, Austin, TX, Nov. 2013 (with W. Yang, X. Miao)
143. **Huang, Z.Y.**, M. Milbrath, X. Xie. 2013. *Nosema ceranae* induced mortality in honey bees depends on methods of infection, Annual Conference of Entomological Society of America, Austin, TX, Nov.
144. **Huang, Z.Y.**, X. Xie, G. Bian, Z. Xi. 2013. Using RNAi to search for genes important for *Varroa destructor* survival and reproduction, Annual Conference of Entomological Society of America, Austin, TX, Nov.
145. **Huang, Z.Y.**, M. Milbrath, X. Xie. 2013. Carbon dioxide anesthesia affects mortality of *Nosema ceranae* infected honey bees, American Bee Research Conference, Hershey, PA, Jan.
146. **Huang, Z.Y.**, X. Xie, G. Bian, Z. Xi. 2013. Using RNAi to hunt for genes important for *Varroa* survival and reproduction, American Bee Research Conference, Hershey, PA, Jan.
147. **Huang, Z. Y.**, W.C. Yang, H.O. Kuang, J. Wang, S.S. Wang, Z.H. Wu, X.Q. Miao. 2013. Comparative sucrose sensitivity in *Apis mellifera* and *A. cerana* foragers, American Bee Research Conference, Hershey, PA.
148. **Huang, Z. Y.**, J. Adams, A. Jiang. 2012. Effect of single species and mixed infection of *Nosema spp.* on worker foraging behavior and longevity, American Bee Research Conference, Greenbelt, MD, Feb.
149. **Huang, Z. Y.**, X. Xie, G. Bian, Z. Xi. 2012. Using RNAi to hunt genes important for *Varroa* survival and reproduction, American Bee Research Conference Poster, Greenbelt, MD, Feb.
150. **Huang, Z. Y.**, X. Xie, G. Bian, Z. Xi. 2011. Exploring RNAi as a method for controlling *Varroa destructor*, Almond Board of California Annual Conference Poster, Modesto, CA, Dec.
151. **Huang, Z. Y.**, M. Patnaude, J. Hoberg. 2011. Results of Larval Honey Bee Inter-laboratory Validation Tests for Development of a Standardized Test Procedure, Society of

Environmental Toxicology and Chemistry North America 32nd Annual Meeting, Boston, MA, Nov.

152. **Huang, Z. Y.**, Z.Y. Liu, Z.L. Wang, W. Y. Yan, X. B. Wu, Z. J. Zeng. 2011. The sex determination gene in giant honey bees (*Apis dorsata*) shows no founder effect, Honey Bee Genomics & Biology Poster, Cold Spring Harbor Laboratory, NY, May.
153. **Huang, Z. Y.**, M. Lundquist, T.V. Tran. 2011. *Nosema ceranae* and *Nosema apis*: effect of pollen and mixed infections on honey bee mortality, American Bee Research Conference, Galveston, TX, Jan.
154. **Huang, Z. Y.**, S. Zhang, N. Kondamuri, J. Shin, M.S. Huang, J. Donowich, A. Nemeth, M. Pahl, F. Dyer. 2011. Relay effect in landscape learning in honey bees and its use for detecting subtle effects of pesticides, American Bee Research Conference, Galveston, TX, Jan.
155. **Huang, Z. Y.**, S. Zhang, N. Kondamuri, J. Shin, M.S. Huang, J. Donowich, A. Nemeth, M. Pahl, F. Dyer. 2010. A new mode of learning: relay landscape learning in honey bees, Entomological Society of America Annual Meeting, San Diego, CA, Dec.
156. **Huang, Z. Y.**, J. Shin, N. Kondamuri, M. Huang. 2010. Ontogeny of honey bee orientation flights, Entomological Society of America Annual Meeting, San Diego, CA, Dec.
157. **Huang, Z. Y.**, M. Lundquist, T.V. Tran. 2010. Mixed infections of *Nosema apis* and *Nosema ceranae* decrease honey bee survival in cages. Entomological Society of America Annual Meeting, San Diego, CA, Dec.
158. **Huang, Z. Y.**, X. Xie. 2010. Preference of phoretic mites for nurses increases *Varroa* fitness, American Bee Research Conference, Orlando, FL, Jan.
159. **Huang, Z. Y.**, K. Ahn, J. Riddle, J. Pettis. 2010. Effect of transportation on honey bee physiology, American Bee Research Conference, Orlando, FL, Jan.
160. **Huang, Z. Y.**, K. Ahn, J. Riddle, J. Pettis. 2009. Transportation physiology of honey bees, Entomological Society of America meeting, Indianapolis, IN. Dec.
161. **Huang, Z. Y.**, Y. Fu. 2008. Popping the mites: can microwave be used as a method for *Varroa* control? American Bee Research Conference, Sacramento, CA, Jan.
162. Leniaud, L. **Huang, Z. Y.**, E. Darronset, A.G. Bagnères. 2007. Caste differentiation and ontogenetic potentialities in the subterranean termite genus *Reticulitermes*, XV^{ème} Colloque, Physiologie de L'Insectes
163. **Huang, Z. Y.**, Y. Du, Z. Liu, Y. Numura, K. Dong. 2007. Functional characterization of the first arachnid sodium channel from the *Varroa* mite, CSREES Arthropods & Nematodes Programs Awardee Poster Session Entomological Society of America meeting, San Diego, CA, Dec.

164. **Huang, Z. Y.**, Yulun Fu. 2007. Microwave radiation as a possible control method for *Varroa* mite (Acari: Varroidae) control in honeybees, Annual Meeting of Entomological Society of America, San Diego, CA, Dec.
165. **Huang, Z. Y.**, S. Cho, D. Smith and J. Zhang. 2007. Evolution of sex determination gene in the honey bee, Workshop on Honey Bee Genomics and Biology, Cold Spring Harbor, May.
166. **Huang, Z. Y.** 2006. Effect of Mitezapper on *Varroa* mite populations: a field test, American Bee Research Conference, Phoenix, AZ, Dec.
167. **Huang, Z. Y.**, Y.L. Conte, M. Navajas, J. P. Christides, Z. J. Zeng, A. G. Bagnères. 2006. Chemical mimicry by the ectoparasitic mite *Varroa destructor* infesting *Apis cerana* and *Apis mellifera*, Entomological Society of America, Indianapolis, IN, Dec.
168. **Huang, Z. Y.**, S. Cho, D. Smith and J. Zhang. 2006. Evolution of sex determination gene in the honey bees, International Union for the Study of Social Insects, Washington DC, Aug.
169. **Huang, Z. Y.**, L. Leniaud, M. Kutnik, A. Pichon, S. Dupont and A.G. Bagnères. 2006. Ongetenic potentialities and caste differentiation in the *Reticulitermes* worker caste, International Union for the Study of Social Insects, Washington DC, Aug.
170. **Huang, Z. Y.**, K.E. Wharton, F.C. Dyer, T. Getty. 2006. Drone regulation in honeybee colonies: a case for queen-worker cooperation? International Union for the Study of Social Insects, Washington DC, Aug.
171. **Huang, Z. Y.**, A.-G. Bagnères, M. Navajas, M. Salvy, J.-P. Christides, Y. Le Conte. 2006. Chemical signature and camouflage used by *Varroa* infesting *Apis cerana* and *A. mellifera* broods: an adaptive strategy, 11th ISBE meeting, Avignon, France, July.
172. **Huang, Z. Y.**, A.-G. Bagnères, M. Navajas, M. Salvy, J.-P. Christides, Y. Le Conte. 2006. Chemical signature and camouflage used by *Varroa* infesting *Apis cerana* and *A. mellifera* broods: an adaptive strategy, IUSSI-France, Tours, France, April.
173. **Huang, Z. Y.**, Y. Qin, J. Zhao, L. Zhou. 2006. Electronic monitoring of mite feeding behavior on honey bees, American Bee Research Conference, Baton Rouge, LA, Jan.
174. **Huang, Z. Y.**, Y. Qin, J. Zhao, L. Zhou. 2005. Electronic monitoring of feeding behavior of *Varroa* mites on honey bees, Annual Meeting of Entomological Society of America, Ft. Lauderdale, FL, Dec.
175. **Huang, Z. Y.**, G.W. Otis, T. Kiraly, R. Ebadi. 2005. Effects of colony, drone age, and *Nosema* infection on numbers of spermatozoa in the honey bee, Annual Meeting of Entomological Society of America, Ft. Lauderdale, FL, Dec.
176. **Huang, Z. Y.**, S. Cho, D.R. Green, D.R. Smith, J. Zhang. 2005. Evolution of the complementary sex-determination gene of honey bees: balancing selection and trans-

- species polymorphisms, Annual Meeting of Entomological Society of America, Ft. Lauderdale, FL, Dec.
177. **Huang, Z. Y.**, K.E. Wharton, F.C. Dyer, T. Getty. 2005. The interplay of queen and worker strategies on brood sex ratio patterns in the honeybee, *Apis mellifera*, Animal Behavior Society Meeting, Snowbird, UT, Aug.
 178. **Huang, Z. Y.**, Y. Qin, Z. Zeng. 2005. Hemolymph juvenile hormone titers in worker honey bees (*Apis mellifera*) under normal and pre-swarming conditions, American Bee Research Conference, Reno, NV, Jan.
 179. **Huang, Z. Y.**, Y. Qin. 2004. Hemolymph juvenile hormone titers and sodium / potassium ratios in worker honey bees (*Apis mellifera*) under normal and pre-swarming conditions, Annual Meeting of Entomological Society of America, Salt Lake City, UT, Nov.
 180. **Huang, Z. Y.**, Y. Qin. 2004. Thermal death kinetics the honey bee and its parasite, *Varroa destructor*, Annual Meeting of Entomological Society of America, Salt Lake City, UT, Nov.
 181. **Huang, Z. Y.**, P. Alvarez-Ortiz, D. Iskay, S. Cabrera, T. Giray. 2004. How does a bee fly? Changes in flight muscle contractile proteins, Annual Meeting of Entomological Society of America, Salt Lake City, UT, Nov.
 182. **Huang, Z. Y.**, S.S. Schneider, L.A. Lewis. 2004. The vibration signal and juvenile hormone titers in worker honey bees, *Apis mellifera*, IUSSI-NAS Annual Mtg, Camp Tontozona, AZ, Oct.
 183. **Huang, Z. Y.** 2004. JH titers, biosynthesis and metabolism in honey bee workers infected by a microsporidia parasite, *Nosema apis*, 8th International Conference on the Juvenile Hormones, Lake Tahoe, CA, Jun.
 184. **Huang, Z. Y.** 2004. Dynamics of *Nosema* spore loads in honey, beeswax and their relationship with worker infection, American Bee Research Conference, San Antonio, TX, Jan.
 185. **Huang, Z. Y.**, S. Cho, J. Zhang. 2004. Testing the balancing selection hypothesis on the complementary sex- determination gene of honeybees, Annual Meeting for the Society for Molecular Biology and Evolution, Pennsylvania State University.
 186. **Huang, Z. Y.** 2003. Extraordinary queens - honey bee queens control sex ratio by overriding a highly stereotyped behavioral program, Annual Meeting of Entomological Society of America, Cincinnati, OH, Oct.
 187. **Huang, Z. Y.**, Y. Qin. 2003. Tracking *Nosema* spores in colonies headed by hygienic and regular queens, Annual Meeting of Entomological Society of America, Cincinnati, OH, Oct.
 188. **Huang, Z. Y.**, D. Onstad, D. Crowder. 2003. Model of *Nosema* disease in honey bee colonies, Annual Meeting of Entomological Society of America, Cincinnati, OH, Oct.

189. **Huang, Z. Y.,** L. Taua, R. Lin. 2002. *Nosema* spore reproduction in different honey bee castes, American Bee Research Conference, Niagara on the River, Ont, Canada, Dec.
190. **Huang, Z. Y.,** L. Taua, R. Lin. 2002. *Nosema* spore reproduction in different honey bee castes, Annual Meeting of Entomological Society of America, Ft. Lauderdale, FL, Nov.
191. **Huang, Z. Y.,** J. Michalek. 2002. Why do young worker honey bees prefer warm temperatures? Annual Meeting of Entomological Society of America, Ft. Lauderdale, FL, Nov.
192. **Huang, Z. Y.,** A.V. Hanley, W. Pett. 2001. Effect of transgenic corn pollen on worker honey bees, Annual Meeting of Entomological Society of America, San Diego, CA, Dec.
193. **Huang, Z. Y.,** R. Lin, R. Yu. 2001. Why nurse bees do not sleep: melatonin implicated, Annual Meeting of Entomological Society of America, San Diego, CA, Dec.
194. **Huang, Z. Y.,** R. Lin, C. Dusset. 2001. Short-term changes in juvenile hormone titers in worker honey bees, Annual Meeting of Entomological Society of America, San Diego, CA, Dec.
195. **Huang, Z. Y.,** R. Lin, J. Sullivan. 2001. Earlier foraging in *Nosema*-infected honey bee workers: Are host *corpora allata* needed? Annual Meeting of Entomological Society of America, San Diego, CA, Dec.
196. **Huang, Z. Y.** 2001. Larger cell size reduces *Varroa* mite reproduction, American Bee Research Conference, Port Deposit, MA, Sept.
197. **Huang, Z. Y.** 2001. The Spartan Mitezapper: a novel method for mite control, American Bee Research Conference, Port Deposit, MA, Sept.
198. **Huang, Z. Y.,** R. Yu. 2000. Melatonin and division of labor in honey bee workers, Annual Meeting of Entomological Society of America, Montreal, Canada, Dec.
199. **Huang, Z. Y.,** R. Lin. 2000. Does *Nosema apis* affect age of first foraging in honey bees via juvenile hormone? Annual Meeting of Entomological Society of America, Montreal, CA, Dec.
200. **Huang, Z. Y.,** E. Foster. 2000. Earlier foraging in carbon dioxide anesthetized bees: is it juvenile hormone mediated? Annual Meeting of Entomological Society of America, Montreal, CA, Dec.
201. **Huang, Z. Y.,** R. Wang, K. Dong. 2000. Molecular and functional analysis of a sodium channel gene of the *Varroa* mite, *Varroa jacobsoni*, Annual Meeting of Entomological Society of America, Montreal, Canada, Dec.
202. **Huang, Z. Y.,** J. Schmidt-Bailey. 2000. The distribution of *Varroa jacobsoni* in swarms, afterswarms and remaining bees in the Western honey bees *Apis mellifera*, Annual Meeting of Entomological Society of America, Montreal, Canada, Dec.

203. **Huang, Z. Y.** 2000. A novel invention for controlling *Varroa jacobsoni*, a parasite of the honey bees, Annual Meeting of Entomological Society of America, Montreal, Canada, Dec.
204. American Bee Research Conference, Eastern Apicultural Society, Salisbury, MD, Aug 2000
205. 2nd International Conference of Africanized Bees and Bee Mites, Tucson, AZ, Apr, 2000 (with R. Wang, K. Dong, P.J. Elzen & J. Pettis)
206. Annual Meeting of Entomological Society of America, Atlanta, GA, Dec 1999 (with R. Wang & K. Dong)
207. Annual Meeting of Entomological Society of America, Atlanta, GA, Dec 1999 (with R. Lin)
208. Annual Meeting of Entomological Society of America, Las Vegas, NE, Dec 1998
209. American Bee Research Conference, Colorado Springs, CO, Jan 1998
210. International Union for the Study of Social Insects/North American Section Meeting, Nederland, CO. Sep 1997 (with D. Schulz & G.E. Robinson)
211. Annual Meeting of Entomological Society of America, Louisville, KY, Dec 1996 (with D.W. Borst, S.E. Fahrback & G.E. Robinson)
212. The 19th Annual Meeting of Midwest Neurobiologists, Madison, WI, June 1996
213. The 19th Annual Meeting of Midwest Neurobiologists, Madison, WI, June 1996 (with O.W. Jassim & G.E. Robinson)
214. Annual Meeting of Entomological Society of America, Las Vegas, NE, Dec 1995 (with G.E. Robinson)
215. Annual Meeting of Entomological Society of America, Las Vegas, NE, Dec 1995 (with D. Schulz & G.E. Robinson)
216. The 6th Annual Argonne Symposium for Undergraduates in Science, Engineering and Mathematics, Argonne, IL, Nov 1995 (with O. Jassim & G.E. Robinson)
217. The 6th International Conference on Juvenile Hormones, Woods Hole, MA, Sept 1995 (with G.E. Robinson)
218. Annual Meeting of Entomological Society of America, Indianapolis, IN, Dec 1993 (with G.E. Robinson)
219. Annual Meeting of Entomological Society of America, Indianapolis, IN, Dec 1993 (with G.E. Robinson)

220. Annual Meeting of Entomological Society of America, Indianapolis, IN, Dec 1993 (with T. Giray & G.E. Robinson)
221. Annual Meeting of Entomological Society of America, Baltimore, MD, Dec 1992 (with G.E. Robinson)
222. The 3rd International Congress of Neuroethology, McGill University, Montreal, Canada, Aug 1992 (with M.E. O'Neal & G.E. Robinson)
223. The 15th Annual Meeting of Midwest Neurobiologists, Columbia, MO, Mar 1992 (with G.E. Robinson)
224. Annual Meeting of Entomological Society of America, Reno, NV, Dec 1991 (with G.E. Robinson)
225. The 2nd Annual Argonne Symposium for Undergraduates in Science, Engineering and Mathematics, Argonne, IL, Nov 1991 (with M.E. O'Neal & G.E. Robinson)
226. Annual Meeting of Entomological Society of America, New Orleans, LA, Dec 1990 (with G.E. Robinson)
227. Annual Meeting of Entomological Society of America, New Orleans, LA, Dec 1990 (with C.O. Knowles)
228. Agricultural Experiment Station Workshop, Columbia, MO, Nov 1989 (with C.O. Knowles)
229. First Conference of the Chinese Association of Agricultural Students and Scholars, Ithaca, NY, June 1989
230. Annual Meeting of Entomological Society of America, Boston, MA, Dec 1987 (with G.W. Otis)
231. The 10th International Congress of IUSSI, Munich, West Germany, Aug 18-22, 1986 (with G.W. Otis)
232. Annual Meeting of Entomological Society of Canada, Ottawa, Ontario, Sept 1985
233. Annual Meeting of Entomological Society of America, Hollywood, FL, Dec 1985
234. Annual Meeting of Entomological Society of America, San Antonio, TX, Dec 1984 (with G.W. Otis)

Extension (25% for 2014-2015, 50% for 1999-2013)

Web sites

Web host, designer and contents for <http://cyberbee.net>, over 2000 photos related to bees and beekeeping. Average 5-6 million hits per year.

Host, designer and Contributor to Michigan Beekeepers' Association web site, <http://michiganbees.org>. Blog postings and observations on flowering plants and honey bees.

Articles or Abstracts in Popular Press

Milbrath, M.O., X.B. Xie, **Z.Y. Huang**. 2013. Carbon dioxide anesthesia affects mortality of *Nosema ceranae* infected honey bees. Proceedings of the American Bee Research Conference, American Bee Journal 153: 305. Abstract

Xie, X.B., G.W. Bian, Z. Xi, **Z.Y. Huang**. 2013. Using RNAi to hunt for genes important for *Varroa* survival and reproduction. Proceedings of the American Bee Research Conference, American Bee Journal 153: 305. Abstract

Yang, W.C., H.O. Kuang, J. Wang, S.S. Wang, Z.H. Wu, X.Q. Miao, **Z.Y. Huang**. 2013. Comparative sucrose sensitivity in *Apis mellifera* and *A. cerana* foragers. Proceedings of the American Bee Research Conference, American Bee Journal 153: 310. Abstract

Huang, Z.Y. 2012. *Varroa* mite reproductive biology. American Bee Journal 152: 981-985. Also published on Bee Culture.

Goblirsch, M., **Z.Y. Huang**, M. Spivak. 2012. Physiological effects of *Nosema ceranae* on worker honey bees. Proceedings of the American Bee Research Conference, American Bee Journal 152: 401. Abstract

Huang, Z.Y., J. Adam, A. Jiang. 2012. Effect of single and mixed species infection of *Nosema ceranae* and *Nosema apis* on worker foraging behavior and longevity. Proceedings of the American Bee Research Conference, American Bee Journal 152: 402. Abstract

Huang, Z.Y., 2011. Effects of *Nosema* on honey bee behavior and physiology. American Bee Journal 151: 871-874. Bee Culture 138: 21-24.

Huang, Z.Y., 2010. Honey bee nutrition. American Bee Journal 150 : 773-776. Also published on Bee Culture.

Huang, Z.Y., K. Ahn, J. Riddle, J. Pettis. 2010. Effect of transportation on honey bee physiology. Proceedings of the American Bee Research Conference, American Bee Journal 150: 502-503. Abstract

Huang, Z.Y. 2009. Colony collapse crisis. Good Fruit Grower 60(6).

Xie, X. **Z. Y. Huang**. 2008. Family planning in *Varroa* mites: why prefer nurses? The 9th Asian Apicultural Association Conference Abstracts, p 104. Abstract

- Huang, Z.Y.** 2008. "Teaching beekeeping in Nepal", Michigan Beekeepers Assoc. Newsletter, July, p 6-7
- Huang, Z.Y.**, 2008. "Swarm led by a virgin queen", Michigan Beekeepers Assoc Newsletter, June, pp 4-5
- Huang, Z.Y.**, W. Pett. 2008. "Working with your beekeeper for optimal fruit pollination," Michigan Farm News, April 15, pp 20-21.
- Huang, Z.Y.** 2007. As a beekeeper you should know about CCD. Midwest Beekeeping, 1: 8.
- Huang, Z.Y.** 2007. As a beekeeper you should know about CCD. Midwest Beekeeping, 1: 8.
- Huang, Z.Y.** 2006. Dealing with mites and other stresses. Michigan Beekeepers Assoc Newsletter, 8: 4-7.
- Huang, Z.Y.** 2006. Dealing with mites and other stresses. Michigan Beekeepers Assoc Newsletter, 8: 4-7.
- Isaacs, R., **Z.Y. Huang**. 2005. Bees help optimize the pollination of fruit trees. The Vegetable Growers News 44: 51-53.
- Huang, Z.Y.**, W. Pett. 2005. Strong honeybee colonies can survive through winter. The Vegetable Growers News 44: 53.
- Isaacs, R., **Z.Y. Huang**. 2005. Bees help optimize the pollination of fruit trees. The Vegetable Growers News 44: 51-53
- Huang, Z.Y.**, W. Pett. 2005. Strong honeybee colonies can survive through winter. The Vegetable Growers News 44: 53
- Smith, L., **Z.Y. Huang**. 2004. Another job for busy bees: Honey bees are the perfect choice for vectoring biocontrol agents. Bee Culture 132: 46-49
- Huang, Z.Y.** 2004. Pollination of Vine Crops, Pennsylvania Vegetable Growers News 27: 16
- Huang, Z.Y.** 2004. Pollination for Vegetables and Pesticide Use. Pennsylvania Vegetable Growers News 27(9): 19
- Qin, Y., **Z.Y. Huang**. 2004. Dynamics of *Nosema* spores in honey, beeswax and their relationship to worker infection. Proceedings of the American Bee Research Conference, American Bee Journal 144: 406-407, Abstract
- Huang, Z.Y.** 2003. Fall treatment of *Varroa* mites. Michigan Beekeepers Assoc Newsletter, Fall.
- Huang, Z.Y.** 2001. Mitezapper: a new device for *Varroa* mite control. Proceedings of Apimondia Congress, Durban, South Africa, p. 54

Zhou, T., J. Yao, S.X. Huang, **Z.Y. Huang**. 2001. Larger cell size reduces *Varroa* mite reproduction. Proceedings of the American Bee Research Conference, American Bee Journal 141: 895-896. Abstract

Schmidt-Bailey, J., D. Westervelt, **Z.Y. Huang**. 2000. The Spartan Beetle Buster: testing of a new method for surveying the small hive beetle. Proceedings of the American Bee Research Conference, American Bee Journal 140: 907. Abstract

Wang, R., D. Ke, P.J. Elzen, J. Pettis, **Z.Y. Huang**. 2000. Altered sodium channel as a possible resistance mechanism of *Varroa jacobsoni* to fluvalinate. Proceedings of the American Bee Research Conference, American Bee Journal 140: 747. Abstract

Huang, Z. Y., R. Wang. 1999. *Nosema* disease and division of labor in honey bees. Proceedings of 36 Congress of Apimondia, Vancouver, Canada, p102. Abstract

Huang, Z.-Y., G.E. Robinson. 1998. Regulation of onset of foraging in honey bees: a worker primer pheromone in the mandibular glands? Proceedings of the American Bee Research Conference, American Bee Journal 138: 297. Abstract

Contributor to the MSU CAT Alert/ IPM News system (<http://ipmnews.msu.edu/>)

Huang, Z.Y. W. Pett. 2011. An update on Colony Collapse Disorder and how to get the best pollination this season.

Huang, Z.Y., W. Pett. 2010. Using honey bees for fruit pollination

Huang, Z.Y., W. Pett. 2009. Working with beekeepers for optimal pollination for fruit production

Huang, Z.Y., W. Pett. 2008. "Working with your beekeeper for optimal fruit pollination,

Huang, Z.Y. 2007. Locating a local beekeeper for fruit pollination.

Huang, Z.Y., R. Isaacs. 2007. Using bees for pollination of fruit crops.

Huang, Z.Y. 2007. The recent honey bee crisis and its implications for Michigan fruit growers

Huang, Z.Y. 2007. Honey bee colony collapse disorder and vegetable growers.

Isaacs, R. and Z.Y. Huang. 2006. Using bees for pollination of small fruit crops. Fruit Crop Advisory Team Alert, MSU.

Huang, Z.Y. 2006. Honey bee update. Fruit Crop Advisory Team Alert, MSU.

Huang, Z.Y. 2006. Pollination for crops and pesticide use. Fruit Crop Advisory Team Alert, MSU.

Huang, Z.Y. 2005. Honey bees and cucurbit pollination. Vegetable Crop Advisory Team Alert, MSU.

Publications on ultravioletphotography.com

Huang, Z.Y. 2015. *Helianthus maximiliani* Schrad. (Asteraceae) Maximilian Sunflower. Flowers photographed in ultraviolet, visible light and simulated insect vision.

Huang, Z.Y. 2015. *Cucurbita pepo* L. (Cucurbitaceae) Pumpkin. Flowers photographed in ultraviolet, visible light and simulated insect vision.

Huang, Z.Y. 2015. *Helianthus tuberosus* L. (Asteraceae) Jerusalem Artichoke. Flowers photographed in ultraviolet, visible light and simulated insect vision.

Huang, Z.Y. 2015. *Cucumis sativus* L. (Cucurbitaceae) Cucumber. Flowers photographed in ultraviolet, visible light and simulated insect vision.

Huang, Z.Y. 2015. *Solanum tuberosum* L. (Solanaceae) Potato. Flowers photographed in ultraviolet, visible light and simulated insect vision.

Huang, Z.Y. 2014. *Disocactus ackermannii* (Haw.) Barthlott (Cactaceae) Orchid Cactus. Flowers photographed in ultraviolet and visible light.

Huang, Z.Y. 2014. *Hoya carnosa* Thunb (Apocynaceae) Wax Plant. Flowers photographed in ultraviolet and visible light.

Huang, Z.Y. 2014. *Lonicera japonica* Thunb (Caprifoliaceae) Japanese Honeysuckle. Flowers photographed in ultraviolet and visible light.

Huang, Z.Y. 2014. *Penstemon digitalis* Nutt. ex Sims (Plantaginaceae) Foxglove Beardtongue. Flowers photographed in ultraviolet and visible light.

Blog/ photography postings on the Michigan Beekeeper Association web site

2015:

Bees swarming over American holly

Black locust, a major honey plant in Michigan

Huang's mite research featured on MSU news

Smoke bush flowers are highly attractive to honey bees and other pollinators

Beautiful luffa flowers as seen by honey bees

Pretty flowers, but bees rarely love 'em – lilac

Not pretty flowers, but bees love 'em – autumn olive

Singing to bees

To feed, or not to feed

2014:

Yellowjackets not as smart as honey bees

Asian honey bees foraging on Chinese redbud tree flowers.

Honey bees will forage on tulip flowers for pollen

Eastern skunk cabbage provides bees with ample pollen in early spring

Michigan Spring Flowers: Winter Aconite

Winter mortality at one MSU yard

Single gene separates queen from workers

2013:

Bees swarming over lotus. <http://www.michiganbees.org/2013/lotus/>

Beebe tree blooming @MSU. <http://www.michiganbees.org/2013/bee-bee-tree-blooming-msu/>

Apis cerana, a bit strange, in its PER. www.michiganbees.org/2013/cerana-per/

CO₂ does not kill *Nosema* infected bees. www.michiganbees.org/2013/not-co2/

The new species of *Nosema* (*Nosema ceranae*) also increases juvenile hormone titers and makes bees forage earlier. www.michiganbees.org/2013/Nosema-jh/

Two bees on two covers. www.michiganbees.org/2013/2covers/

First glimpse of bees in 2013. www.michiganbees.org/2013/first-glimpse-of-bees-2013/

2012:

Apricots, plums and boxelders

Do bees forage on peonies?

Crabapples Blooming in East Lansing, Michigan.

Western and Eastern honey bees foraging on peach flowers.

Apis dorsata paper and photos.

Honey bees foraging on magnolia flowers

Cherry blossoms and honey bees.
Feeding bees in winter
The Harvard bee, *Davidia* and spicy honey.
Bee feeding – trophallaxis.
First foragers of 2012.
Flowers and Bees from NCSU and Duke Gardens.

2011:

Honey bee update and fruit pollination.
Bees on sea rockets.
MSU Half a million of newbees, Part 2.
MSU Half a million of newbees, Part 1. Package Bee Installation

2010:

Sugar Dusting Your *Varroa* Mite
Small Hive Beetle Management in Michigan.
Alpine flowers, Part I.
Bees, on peas.
Tulip poplar.
Catching the first swarm in 2010.
Michigan Spring Flowers 2 (Mostly maples, and a bee).
Crocus still blooming.
Spring bees.
Michigan bees: how much are they worth?

Extension Presentations

(A total of 264 presentations reaching 26,763 person-hours)

Extension/Outreach Presentations in Michigan (N=number of contact hours)

(A total of 129 Extension talks in Michigan, reaching 14,139 person-hours)

Bee palooza, MSU campus June 2016 (600)

Honey bee anatomy workshop (2 hrs) MSU ANR beekeeping Week. March 2016 (36 two times)

Bees are important in MI agriculture, Lansing Farmers' Club. Okemos, MI Dec 2015 (75)

Michigan bee plant, MBA fall meeting, Traverse City, MI Oct 2015 (50)

Life of a worker bee, MBA fall meeting, Oct 2015 (35)

Honey bee behaviors, MBA fall meeting, Oct 2015 (35)

Honey bee dissection, Heartland Apicultural Society Annual Conference, Albion, MI July 2015 (43x2)

“Effect of *Nosema* on honey bees,” Heartland Apicultural Society Annual Conference, Albion, MI July 2015 (13)

“Honey bee behaviors,” Heartland Apicultural Society Annual Conference, Albion, MI July 2015 (20)

Bee palooza, MSU campus June 2015 (500)

Beekeeping 101, Holt Library, MI, June 2015 (12)

Beekeeping 101, Mason Library, MI, June 2015 (18)

“Flower colors as seen by honey bees,” Southeast Michigan Beekeepers Association Conference, Novi, MI Mar 2015 (50)

“Panel discussion on bees and beekeeping,” Southeast Michigan Beekeepers Association Conference, Novi, MI Mar 2015 (70)

“Honey bee anatomy and function,” a hands-on 2 hours class, Michigan Beekeepers Association Spring conference, MSU, Mar 2015 (46 x 2 hrs)

“What do bees see?” Michigan Beekeepers Assoc. Fall Conference, Midland, MI Oct 2014 (45)

“American foulbrood, diagnosis and treatment,” Michigan Beekeepers Association Fall Conference, Midland, MI Oct 2014, with Walter Pett (50)

“Importance of honey bees to MI agriculture and threats to bees, Sierra Club, Oct 28, 2014 (35)

“Honey bees are important for MI agriculture,” Cromaine Library, Hartland, MI, July 2014 (55)

Show and tell on honey bees, Bee Palooza, MSU Campus, June, 2014 (about 200)

“Honey bee form and function,” Southeast Michigan Beekeepers Association, March 2014

“Honey bee anatomy.” 2 hr hands-on dissection, MSU ANR Week Beekeeping Program, March 2014 (22 x 2=44)

“Effects of *Nosema* on honey bee physiology and behavior,” MSU ANR Week Beekeeping Program, March 2014 (n=110)

“Michigan honey plants,” MSU ANR Week Beekeeping Program, March 2014 (n=70)

“Providing best fruit tree pollination with honey bees and other bees - Southwest Hort Days, Benton Harbor, MI March 2014 (70)

“Update on research at MSU,” Southeast Michigan Beekeepers Summer Meeting, Novi, MI, July, 2013 (70)

“Diseases and pests of honey bees,” Center of Michigan Beekeepers, East Lansing, MI. June, 2013 (80)

- “Introduction to digital photography of bees,” Center of Michigan Beekeepers, East Lansing, MI, June, 2013 (60)
- “Show and tell on honey bees,” Bee Palooza, MSU Campus, June 23, 2013 (120)
- “Blueberry pollination,” Blueberry Prebloom IPM meeting, Paw Paw MI, May, 2013 (50).
- “Introduction to digital beetography,” Southeastern Beekeepers Association, Novi, MI, March 2013
- “Honey bee anatomy and dissection,” Hands-on Workshop, MSU ANR Week, E. Lansing, MI March 2013 (2 times, 48)
- “Honey bee pheromones,” Michigan State University ANR Week Honey Bee Program, E. Lansing, MI, March 2012 (two times, 160)
- “Mating biology of honey bees,” Michigan State University ANR Week Honey Bee Program, E. Lansing, MI, March 2012 (two times, 160)
- “Effect of *Nosema spp* on honey bees,” Michigan State University ANR Week Honey Bee Program, E. Lansing, MI, March 2012 (80)
- “Update on *Nosema ceranae* research,” Michigan Beekeepers’ Association Fall Meeting, E. Lansing, MI Dec 2011 (50)
- “Catching a swarm of honey bees,” Michigan Beekeepers’ Association Fall Meeting, E. Lansing, MI Dec 2011 (70)
- “Honey bees and beekeeping, show and tell,” Barry County Extension 4-H Youth Program, Hastings, MI, May 2011 (265 3rd grade students)
- “*Varroa* reproductive biology,” Southeastern Michigan Beekeepers’ Association Spring Meeting, March 2011 (50)
- “Pesticide synergism affect honey bee homing ability,” Southeast Michigan Beekeepers’ Association Spring Meeting, March 2011 (50)
- “Beekeeping in Turkey,” Michigan State University ANR Week Honey Bee Program, E. Lansing, MI, March 2011 (60)
- “Honey bee disease,” Michigan State University ANR Week Honey Bee Program, E. Lansing, MI, March 2011 (60) (two times, 60 x 2)
- “*Varroa* mite Reproductive Biology,” Southeast Michigan Beekeepers Association Fall Meeting, Novi, MI, Nov 2010 (70)
- “Beekeeping in Turkey,” Saginaw Valley Beekeepers Association, St. John, MI, Nov. 2010 (60)

- “Homing in honey bees: relay learning and how pesticide interaction affects it,” Dow Corning Technical Exchange Society, Midland, MI, Oct 5, 2012 (60)
- “*Varroa* mites - an advanced study,” Michigan Beekeepers’ Association Fall Meeting, Grand Rapids, MI Oct 2010 (50)
- “Colony Collapse Disorder, an update,” Michigan Beekeepers’ Association Fall Meeting, Grand Rapids, MI Oct 2010 (50)
- “Honey bees and beekeeping, show and tell,” Barry County Extension 4-H Youth Program. Hastings, MI, May 2010 (350 3rd grade students)
- Effect of transportation on honey bee physiology,” Southeast Michigan Beekeepers Association, Novi, MI, March 2010 (240)
- “Beetography: how to take macro photographs of honey bees,” MSU ANR week Beekeeping Program, East Lansing, MI, March 2010 (60)
- “*Nosema* diseases: a tale of two species,” MSU ANR week Beekeeping Program, East Lansing, MI, March 2010 (120)
- “Honey bee diseases and pests,” Shiawassee Conservation District, MI, Feb 2010 (55)
- “Honey bee biology, behavior and bee products,” Shiawassee Conservation District, MI, Feb 2010 (55)
- “Honey bees: their importance to agriculture,” Bioblitz at the Kalamazoo Nature Center, Sept, 2009 (10)
- “Honey bees and beekeeping, show and tell,” Barry County Extension 4-H Youth Program. Hastings, MI, May 2008 (375 3rd grade students)
- “Honey bee diseases, pests and the CCD crisis,” Ingham County Extension Center, April 9 2008 (15)
- “Using honey bees for blueberry pollination,” special topics on blueberry production, Fennville, MI March 27, 2008 (50)
- “GM Plants and honey bees: do they cause CCD?” Southeast Michigan Beekeepers Association, Novi, MI, March 15 2008 (150)
- “Honey bee biology,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, March 7-8 2008 (three times, 90)
- “Threats to honey bees and CCD update,” Bee Class by Ingham County Extension Office, MSU Pavilion, Jan 15 2008 (25)
- “Importance of honey bees for Michigan fruit industry and their current status,” NW Michigan Orchard & Vineyard Show, Traverse City, MI, Jan 2008 (100)

“Working with your beekeeper for optimal pollination of fruits and vegetables,” Great Lakes Fruit, Vegetable & Farm Market Expo, Grand Rapids, MI, Dec 2007 (with W. Pett, 150)

“Colony collapse disorder and its implications for our food,” Presentation at " God Save The Queen October Honey Bee Research Benefit,” Leapin Lizard Gallery, Covington, KY, Oct 12, 2007 (100)

“Honey bees are important to Michigan agriculture,” Capital area Audubon Program, Lansing, MI. Nov 2007 (50)

“Honey bees: importance to Michigan agriculture and threats they face,” Pfizer, Portland, MI. June 2007 (70)

“Fruit pollination using honey bees and other insects,” MSU Horticultural Days, Benton Harbor, MI, Feb 2007 (66)

“Field-testing the Mitezapper,” Southeast Michigan Beekeepers Association Spring Conference, MI, Feb 2007 (80)

“*Varroa* mites: biology and its control,” Ingham County MSU Extension Bee Program, E. Lansing, MI, Feb 2007 (24)

“Honey bees: biology and beauty,” Senior Group, First Baptist Church, Okemos, MI. Feb 2007 (30)

“Honey bee diseases and pests,” Ingham County MSU Extension Bee Program, E. Lansing, MI, Feb 2007 (24)

“What can I do for you, Michigan beekeepers,” Michigan Beekeepers Association, Midland, MI, Oct 2006 (15)

“Honey bee show and tell,” Meridian Heritage Festival, Meridian Township Complex, Okemos, MI. Oct, 2006, with K. Wharton (300)

“Honey bee pests and diseases,” Eaton County Education Center, Charlotte, Michigan, July 2006 (50)

“Honey Bee Research at MSU and Tour of MSU Bee Biology Building,” Southeast Michigan Beekeepers Association Summer Picnic, @ MSU Apiary, http://sembabees.org/gallery/MSU06_0506.html (27)

“Honey bees and blueberry pollination,” Blueberry Field Day, Travel Nichols Research Station, May 2006 (80)

“Almond pollination in California,” ANR Week Beekeeping conference, MSU, MI, March 2006 (180)

“The life of a worker bee”, Michigan Beekeeper Association Fall Meeting, Midland, MI, Oct 2005 (80)

“Honey bee pheromones: biology and relevance to beekeeping,” Southwest Michigan Beekeepers Association Meeting, Benton Harbor, Oct 2005 (50)

“Honey bee researches in the country,” Cranbrooke Bee Club, Bloomfield Hills, MI, Oct 2005 (18)

“Honey bee show and tell,” Meridian Heritage Festival, Meridian Township Complex, Okemos, MI. Oct, 2005, (with K. Wharton, 400)

Slide show of bees, Observation hive show, “Behavior of bees,” “How honey is made,” “Bee sting,” a 3 hr program, Bennett Woods School, Okemos, MI. Sept, 2005, with K. Wharton (170 x 3)

“Basic honey bee biology,” “Starting up with bees,” “Seasonal management,” “Disease and pests of honey bees,” One day workshop and field day (9am to 3pm). Lakeview, MI, Aug 2005 (20)

“Honey bee Biology,” “Dance reading” and “Nest recognition,” Korean Visiting International Professional Program, MSU, July 2005, (20 teachers x 3)

“Honey bee biology,” Senior Students, Okemos High School, May, 2005 (20 students)

“Melatonin and honey bee division of labor,” Senior Students, Okemos High School, May, 2005 (30 students)

“Exocrine glands and their pheromones,” Southeast Michigan Beekeepers’ Association Meeting, Novi, MI, April 2005 (120)

“Exocrine glands and their pheromones,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2005 (160)

“Dynamics of *Nosema* spore levels in honey, beeswax and relationship to rate of worker infection,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2005 (140)

“Honey bee health, numbers, and other factors in cucumber pollination,” Great Lakes Expo (Fruit, Vegetable & Farm Market), Grand Rapids, MI, Dec 2004 (110)

“Honey bee division of labor,” Rotary International, Okemos branch, Okemos, MI, Dec 2004 (40)

“How do bees and insects over-winter?” Junior League of Detroit BINZ, Belle Isle Nature Zoo, MI, Dec 2004 (20)

“Honey bee exocrine glands and pheromones,” Michigan Beekeepers’ Association Meeting, Higgins Lake, MI, Oct 2004 (60)

“Show and tell on honey bees,” Meridian Heritage Festival, Meridian Township Complex, Okemos, MI. Oct 2, 2004. (500 attendees)

“Honey bees photographed around the world,” Southeast Michigan Beekeepers’ Association Meeting, Novi, MI, March 2004 (160)

“Honey bees photographed around the world,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2004 (160)

“Apilife Var and other means for controlling *Varroa* mites,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2004 (160)

“Vine crop pollination,” Great Lakes Expo (Fruit, Vegetable & Farm Market), Grand Rapids, MI, Dec 2003 (250)

“American foulbrood: symptoms, treatment, resistance and recent research,” Michigan Beekeepers’ Association Fall Meeting, Cadillac, MI, Oct 2003 (50)

“A five year summary of bee research and education at MSU,” Michigan Beekeepers’ Association Fall Meeting, Cadillac, MI, Oct 2003 (50)

“Five years at MSU,” Southwest Michigan Beekeepers’ Association Meeting, Benton Harbor, MI, Oct 2003 (30)

“Honey bee education and research at MSU,” Southeast Michigan Beekeepers’ Association Meeting, Novi, MI, Sept 2003 (30)

Presentation to 2nd Grade, Marble Elementary School, MI. May 29, 2003 (21)

Field demonstration “How to install package bees,” to Cub Scouts, May 5, 2003 (7)

“Age related changes in worker honey bees,” Keynote Speaker, Southeast Michigan Beekeepers' Association 63rd Annual Bee School, Schoolcraft College, MI, Mar 2003 (120)

“The extraordinary queen: insect birth control,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2003 (150)

“Why young bees like it warm --flight development in bees,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2003 (150)

“Age related changes in worker honey bees,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2003 (150)

“The cousins of our bees: Asian bees,” Michigan Beekeepers’ Association Fall Meeting, Flint, MI, Oct 2002 (50)

“*Varroa* mites and update on the mitezapper,” Southwest Michigan Beekeepers’ Association summer meeting, Lake Michigan College, Benton Harbor, MI, June 2002 (15)

“Tree fruit pollination - makes it or breaks it,” MSU Tree Fruit IPM & Production School, Kellogg Biological Station, MSU, Feb 2002 (100)

“Melatonin and bees: why some bees work around the clock and others sleep,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2002 (160)

“*Varroa* control with a new device, the Spartan Mitezapper,” Fall meeting of Michigan Beekeeper’s Association, Big Rapids, MI, Oct 2001 (60)

“Beekeeping with *Apis cerana* in China,” Fall meeting of Michigan Beekeeper’s Association, Big Rapids, MI, Oct 2001 (60)

“Mitezapper: how does it work and its potential market,” National Agri-Marketing Association at MSU, MSU, Oct 2001 (16)

“Mitezapper for *Varroa* control: simple idea, great effect,” Southeast Michigan Beekeepers' Association 63rd Annual Bee School, Schoolcraft College, MI, Mar 2001 (80)

“Two web-related projects at MSU to help beekeepers,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2001 (120)

“Mitezapper for *Varroa* control: simple idea, great effect,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2001 (120)

“*Varroa* mites and Chinese bees,” Michigan Beekeepers Association Fall Meeting, Big Rapids, MI, Oct 2000 (80)

“Honey bee research at Michigan State University,” Michigan Beekeepers Association Fall Meeting, Big Rapids, MI, Oct 2000 (80)

“What is new with the small hive beetle?” Michigan Beekeepers Association and Indiana Beekeepers Association Joint Summer Meeting, Nappanee, IN, June 2000 (90)

“What is buzzing with bee research at Michigan State University?” Michigan State Beekeepers' Association Fall Meeting, Big Rapids, Oct 2000 (120)

Presentation at Rural Education Day MSU Pavilion, April 2000 (1,500 3rd grade students)

“Pesticide resistance: how do bugs get it?” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2000 (180)

“Small hive beetle update,” Michigan Beekeepers' Association Fall Meeting, Big Rapids, MI, Oct 1999 (90)

“Small hive beetle,” Plant Industry Section Fall Training, Pesticide and Plant Pest Management Division, Michigan Department of Agriculture, Lansing, MI, Oct 1999 (70)

“Update on the small hive beetle, a new pest in honey bees,” Pesticide Education and Regulatory Update, E. Lansing, MI, Oct 1999 (70)

“Small hive beetle report” and demonstration of mite resistance field test, Holland Beekeeper's Meeting, Holland, MI, July 1999 (80)

Demonstration of mite resistance field test, Southeast Michigan Beekeeper's Meeting, Davisburg, MI, July 1999 (70)

Demonstration of mite resistance field test, Southwest Michigan Beekeeper's Meeting,” St. Joseph, MI, July 1999 (10)

Demonstration of mite resistance field test, Michigan Beekeeper's Association Summer Meeting, St. Charles, MI, July 1999 (80)

“Social organization of the honey bee colony,” Keynote speaker, Southeast Michigan Beekeepers’ Association 61st Annual Bee School, Schoolcraft College, MI, April 1999 (120)

“A closer look at the *Nosema* problem,” Southeast Michigan Beekeepers' Association 61st Annual Bee School, Schoolcraft College, MI, April 1999 (120)

“Social organization of the honey bee colony,” Agricultural and Natural Resources Week, MSU, Mar 1999 (200)

“Research experience and future research,” Southwest Michigan Beekeepers Association, Benton Harbor, Feb 1999 (6)

“Division of labor in the colony,” Missouri State Beekeepers Association Fall Meeting, Michigan State Beekeepers Association, Cadillac, Oct, 1998 (120)

Extension Presentations in Other States

(Total of 84 talks, reaching 7,362 person-hours)

“Honey bee nutrition part 1” Wyoming Bee School, Mar 2016, Cheyenne, WY (80)

“Honey bee nutrition part 2” Wyoming Bee School, Mar 2016, Cheyenne, WY (80)

“Varroa and Nosema, biology and control” Wyoming Bee School, Mar 2016, Cheyenne, WY (80)

“Toxicity of Pesticides to Honey Bees: Effect of Behavior, Temperature, and Transportation,” Florida Bee School Keynote, Flagler Beach, FL (300)

“Honey bee pheromones and relevance to beekeeping,” Florida Bee School, Flagler Beach, FL (60)

“Regulation of Varroa mite reproduction,” Florida Bee School, Flagler Beach, FL (60)

“Regulation of Varroa mite reproduction,” Keynote at North Carolina State Beekeepers Association, Feb 2016, New Bern, NC (700)

“Honey bee pheromones and relevance to beekeeping,” North Carolina State Beekeepers Association, Feb 2016, New Bern, NC (70)

“Nectar plants with bee glamour shots,” North Carolina State Beekeepers Association, Feb 2016, New Bern, NC (70)

“Research update at MSU, *Varroa* mite reproduction and *Nosema* effects on bees,” Columbus Beekeeping Association, May 2015, Columbus, OH (70)

“Honey bee chemical communication,” East Columbus Beekeeping Association, May 2015, Columbus, OH (75)

Bee behavior in the apiary, Heartland Apicultural Soc. Ann. Conf., July 2014, Marion IL (20)

“Effect of transgenic pollen on honey bees,” Heartland Apicultural Society Annual Conference, July 2014, Marion IL (25)

“Asian honey bees,” Heartland Apicultural Society Annual Conference, July 2014, Marion IL (5)

Honey bee dissection, Heartland Apicultural Society Annual Conference, July 2014, Marion IL, with J. Tsuruda (25)

Dissection of bees for *Nosema* diagnosis, Heartland Apicultural Society Annual Conference, July 2014, Marion IL (25)

“Honey bee pheromones,” Heartland Apicultural Soc. Ann. Conf., July 2014, Marion IL (12)

Honey bee dissection, hands on workshop (2 hrs), Ohio State Beekeepers Association, Miami, OH, June 2014 (46)

“Honey bee anatomy,” 2 hr hands-on dissection, for Michigan Beekeepers Association Board Members, May 2014 (18)

“Mite reproductive biology,” Puget Sound Beekeepers Association, Seattle, WA, May 2014 (65)

“Effect of *Nosema* on honey bees,” Puget Sound Beekeepers Association, Seattle, WA, May 2014 (65)

“Honey bee pheromones,” Puget Sound Beekeepers Association, Seattle, WA, May 2014 (65)

Hands on with hive inspection, Puget Sound Beekeepers Association, Seattle, WA, May 2014 (75)

“Honey bee behavior,” Workshop at Heartland Apicultural Society Conference, Cookeville, TN, July, 2013 (20 beekeepers)

“Effect of pesticides on honey bee homing behavior,” Heartland Apicultural Society Conference, Cookeville, TN, July, 2013 (80 beekeepers)

“*Varroa* mite reproductive biology,” Worcester Beekeepers Association, Worcester, MA, Mar 2013 (150)

“Effect of *Nosema* on honey bees, *Varroa* mite reproductive biology and beetography,” Rhode Island Beekeepers Association Spring Conference, Mar 2013 (40)

“Effect of *Nosema* on honey bee behavior and physiology,” Worcester Beekeepers Association, Mar 2013 (150)

“Are GMO pollen harmful to honey bees” Heartland Apicultural Society Conference, June, 2012 (35)

“Beehavior”, Heartland Apicultural Society Conference, June, 2012 (30)

“The Effects of *Nosema* on Honey Bees,” Maryland State Beekeepers Association Fall Meeting, Keynote Speaker, Annapolis, MD, Nov, 2011 (80)

“*Varroa* Mite Reproductive Biology,” Maryland State Beekeepers Association Fall Meeting, Keynote Speaker, Annapolis, MD, Nov, 2011 (80)

“Pesticide interactions may explain why bees can't find home,” Heartland Beekeepers Association Annual Conference, Vincennes, IN, July 2011 (150)

“Honey bee anatomy,” Heartland Beekeepers Association Annual Conference, Vincennes, IN, July 2011. (30 x 2)

“Understanding your bee behavior,” Heartland Beekeepers Association Annual Conference, Vincennes, IN, July 2011. (20 x 2)

“Keeping bees healthy,” Joint Conference of American Bee Federation and American Honey Producers Association, Honey Producer/Packer Shared Interest Group, Galveston, TX, Jan, 2011 (100)

Adult anatomy through the microscope a demonstration,” (2 sessions x 24 each). Eastern Apicultural Society Short Course and Conference, Boone, NC, Aug 2010 (48)

“Moving bees and its consequences, Eastern Apicultural Society Short Course and Conference, Boone, NC, Aug 2010 (80)

“*Nosema* control by thymol and other essential oils. Almond Board of California,” Almond Board Conference, Modesto, CA, Dec. 2008 (poster, 200)

“Honey bee pheromones and their use in beekeeping,” Eastern Apicultural Society Conference, Murray, KY, Aug 2008 (120)

“Genetically modified plants, are they causing CCD?” Eastern Apicultural Society Conference, Murray, KY, Aug 2008 (80)

“Honey Bee Photography, Field Session: Taking the Photos,” Eastern Apicultural Society Conference, Murray, KY, Aug 2008 (15 people, with Bill Modjack)

“Honey Bee Photography, Classroom Session: Processing the Photos,” Eastern Apicultural Society Conference, Murray, KY, Aug 2008 (35 people, with Bill Modjack)

“Anatomy and function of honey bees,” Backyard Beekeepers Association, CT, Nov 2009 (80)

“Honey bee pheromones,” Heartland Apicultural Society, July 2009 (80)

“Honey bee photography,” Heartland Apicultural Society, July 2009 (50)

“Honey bee behaviors,” Show and tell in the field, Heartland Apicultural Society, July 2009 (20)

“Honey bee photography,” Southern Adirondack Beekeepers Association, Albany, NY, March 29 2008 (130)

“Chasing bees around the world,” American Beekeeping Federation and American Honey Producers Association Joint Meeting, Sacramento, CA, Jan 2008 (50)

“Are genetically modified plants causing CCD?” Southern Adirondack Beekeepers Association, Albany, NY, March 29 2008 (130)

“Mechanisms of essential oil on *Varroa* mite control,” Almond Board Conference, Modesto, CA, Dec 2007 (200)

“*Nosema* disease: effect on workers and its control,” Heartland Apicultural Society, Frankfurt, KY, July 2007 (30)

“GM plants and bees,” Heartland Apicultural Society, Frankfurt, KY, July 2007 (50)

“Inside story of honey bees,” Heartland Apicultural Society, Frankfurt, KY, July 2007 (50)

“Honey bee pheromones and relevance to beekeeping,” Iowa Honey Producers Association, Marshalltown, IA, Nov 2006 (60)

“Digital photography of honey bees,” Iowa Honey Producers Association, Marshalltown, IA, Nov 2006 (30)

“*Nosema* disease, should you worry about it?” Iowa Honey Producers Association, Marshalltown, IA, Nov 2006 (60)

“Honey bee pheromones and beekeeping,” Heartland Apicultural Society, Vincennes, IN, July 2006 (60)

“Honey bee photography - classroom instruction,” Heartland Apicultural Society, Vincennes, IN, July 2006 (60)

“Honey bee photography – field demonstration,” Heartland Apicultural Society, Vincennes, IN, July 2006 (30)

“Mechanisms of Division of Labor in Honey Bees,” Virginia State Beekeepers Association Summer Meeting, June 2006 (80)

“Honey bee photography,” Virginia State Beekeepers Association Summer Meeting, June 2006 (80)

“Exocrine glands and pheromones,” Virginia State Beekeepers Association Summer Meeting, June 2006 (80)

“Bee pheromones: biology and relevance to beekeeping,” North Carolina State Beekeepers Association Spring Meeting, Clemmons, NC, March 2006 (250)

“External and internal morphology of honey bees,” North Carolina State Beekeepers Association Spring Meeting, Clemmons, NC, March 2006 (100)

“Honey bee photography workshop,” North Carolina State Beekeepers Association Spring Meeting, Clemmons, NC, March 2006 (90)

“Resistance mechanisms against fluvalinate by *Varroa destructor*,” Empire State Beekeepers Association, Syracuse, NY, Dec 2005 (80)

“The newest honey bee pheromone,” Eastern Apicultural Society, Kent, OH Aug 2005 (100)

“The inside story: demonstration of honey bee morphology and anatomy,” Heartland Apicultural Society, 2nd Conference, Midway, KY, July 2003 (30)

“New ideas in *Varroa* mite control: update on mitezapper,” Heartland Apicultural Society, 2nd Conference, Midway, KY, July 2003 (250)

“Effect of transgenic pollen on honey bees,” Eastern Apicultural Society Conference, Ithaca, NY, Aug 2002 (60)

“Other products of the hive,” Eastern Apicultural Society Workshop, Ithaca, NY, Aug 2002 (70)

“Zapping *Varroa* mites,” The 1st conference of Heartland Apicultural Society, Goshen, IN, July 2002 (180)

“Asian bees,” The 1st conference of Heartland Apicultural Society, Goshen, IN, July 2002 (8)

“A non-chemical approach to *Varroa* mite control -- introducing the electrifying Mitezapper,” Eastern Apicultural Society Conference, Cape Cod, MA, Aug 2001 (80)

“Beekeeping with *Apis cerana* in China,” Eastern Apicultural Society Conference, Cape Cod, MA, Aug 2001 (110)

“Age-related behavior of workers, and how they know when and what to do?” Indiana Beekeepers Association, Middlebury, IN, May 2000 (80)

“Social structure of the honey bee colony,” Keynote Speaker, Indiana Beekeeper's Association Summer Meeting, Warsaw, IN, June 1999 (70)

“Behavioral sequences of worker honey bees,” Missouri State Beekeepers Association Fall Meeting, Lake of Ozarks, Missouri, Oct 10, 1998 (150)

“*Nosema* disease,” Missouri State Beekeepers Assoc Fall Meeting, Lake of Ozarks, Missouri, Oct 10, 1998 (200)

“Social regulation of forager development,” Illinois State Beekeeping Assoc Annual Meeting, Nov 1997

Presentation to 1st Grade Yankee Ridge Elementary School, Urbana, IL, June 1997

Science Fair (Honey Bee Show), Button Field Elementary School, Urbana, IL, Sept 1997

Presentation to 2nd Grade, Button Field Elementary School, Urbana, IL, Sept 1997

Extension Presentations in Other Countries

(A total of 51 international talks, reaching 5,263 person-hours)

Large scale beekeeping in US, Ningxia Provincial Beekeeper Training Workshop, July 2015 (100)

Queen rearing, Ningxia Beekeepers Association, China, July 2015 (100)

Anatomy of honey bees, Eastern Apicultural Society Annual Conference, Guelph, Ont Aug 2015 (65)

“Division of labor in honey bee colonies,” Eastern Apicultural Society Annual Conference, Guelph, Ont Aug 2015 (100)

“Honey bee pheromones,” Eastern Apicultural Society Annual Conference, Guelph, Ont Aug 2015 (100)

“Sex determination in honey bees,” Eastern Apicultural Society Annual Conference, Guelph, Ont Aug 2015 (10)

“Large scale beekeeping in the US,” Ningxia Beekeeping Experimental Station, Guyuan, Ningxia July 2015 (100)

“Production of package bees and paid pollination services in the US,” Ningxia Beekeeping Experimental Station, Guyuan, Ningxia July 2015 (100)

“Research progress on CCD in the United States,” Plenary Speaker, Taiwan Apicultural Association, Ilan, Taiwan, Oct 2014 (80)

“Large scale beekeeping in the United States,” Workshop at provincial beekeeper training, Chendu, Sichuan, China, Sept 2014 (100)

“Package production and pollination services in the United States,” Workshop at provincial beekeeper training, Chendu, Sichuan, China, Sept 2014 (100)

“Disease and pest control in honey bees,” Workshop at provincial beekeeper training, Chendu, Sichuan, China, Sept 2014 (100)

“Queen rearing,” Workshop at provincial beekeeper training, Chendu, Sichuan, China, Sept 2014 (100)

“Mitezapper, a new device for mite control,” Apimondia Tech Corner, Ukraine, Sept 2013 (100)

“Comparative sucrose sensitivity in *Apis mellifera* and *A. cerana* foragers,” Apimondia, Ukraine, Sept 2013 (with X. Miao, W. Yang) (120)

Five talks presented to Bangladesh beekeepers

“Recommendations for beekeeping in Bangladesh,
Honey processing,
Disease and pest management,
Honey bee division of labor, and
Honey bee products.” Bangladesh, Sept, 2012. (5 talks X 103 =515)

Four Talks presented to Haitian beekeepers

“Field trip to harvest mites,
How to measure LD_{50} of fluvalinate,
Mite biology,
Small hive beetle biology,
Port au Prince, Cap Haitian, Haiti, Nov 2011 (4x50=200)

“*Varroa* mite reproductive biology,” EuroBee Conference Plenary Speaker, Sept 2010 (300)

“Mitezapper: a demonstration for its use,” International Honeybee and Beekeeping Panel, Namik Kemal University, Tekirdaq, Turkey, Sept 2010 (120)

“Beekeeping technology and bee product processing in China,” Tekirdaq Beekeepers Association, Tekirdaq, Turkey, Sept 2010 (120)

“*Varroa* research at Michigan State University,” Canberra Beekeepers Association, ACT, Australia, April, 2009 (35)

“Family planning in *Varroa* mites: why prefer nurses? The 9th Asian Apicultural Association Conference, Hangzhou, China, 2008 (100)

“Queen rearing: theory and methods”

“Queen and drone biology,”

“Honey bee disease and pests,”

“Controlling the two mites: *Varroa* and *Tropilaelaps*,”

“Strategies for increasing honey production,”

“Hive products of bees: pollen, propolis, beeswax and royal jelly,”

“Honey plants,”

“Marketing your honey,”

Rapti Beekeepers Association, Dang, Nepal, Mar 2007 (8 lectures x 16 people =128)

“Effect of mitezapper on *Varroa* mite population, a field test,” Apimondia Conference, Melbourne, Australia, Sept 2007.

“Absence of *Varroa jacobsoni* in mites infesting *Apis cerana* and *Apis mellifera* in China,” Asian Apicultural Association, Los Banos, Philippines, 2004 (500)

“Flight development in worker bees,” Joint conference of Ontario and Michigan Beekeepers’ Associations, Niagara on the River, Ont, Canada, Dec 2002 (200)

“*Apis cerana* in China and how do they resist the *Varroa* mites,” National Association of Queen Breeders and Bee Rearing Centers, Limoges, France Mar 2002 (50)

“*Nosema* disease: how does it affect your bees,” National Association of Queen Breeders and Bee Rearing Centers, Limoges, France, Mar 2002 (50)

“Resistance mechanisms of *Varroa* mites to chemicals,” National Association of Queen Breeders and Bee Rearing Centers, Limoges, France, Mar 2002 (50)

“Non-chemical control for *Varroa* mites: zapping them,” Keynote Speaker, National Association of Queen Breeders and Bee Rearing Centers, Limoges, France, Mar 2002 (50)

“A new way to deal with resistant mites -- zap 'em!” Joint meeting of Michigan Beekeepers' Association and Ontario Beekeepers' Association Summer Meeting, July 2001 (120)

“Mitezapper: a new device for *Varroa* mite control,” Apimondia Congress, 2001, Durban, South Africa (400)

“Juvenile hormone and division of labor in *Apis cerana*,” Asian Apicultural Association Conference, Chiangmai, Thailand, 2000 (200).

“Research program at Michigan State University,” Ontario Bee Breeders' Association Annual Queen Breeding Workshop, Guelph, Ont. Mar 1999 (150)

“Regulation of onset of foraging in honey bee workers,” Apimondia Conference, Vancouver, Canada, Sept 1999. (100)

“*Nosema* disease and division of labor in honey bees,” Apimondia Conference, Vancouver, Canada, Sept 1999. (100)

“Activation of food glands in worker bees,” Toronto District Beekeepers’ Association, Mar 1988 (100)

“Beekeeping in China,” Toronto District Beekeepers’ Association, Feb 1985 (100)

Presentations by Lab Members (Audience number given for extension talks)

Grouse, E. "Does Survival of Honey Bees After *Nosema* Infection Depend on Infection Method?" High School Honors Science Program Report Presentation, MSU, Sept 2012

Show and tell on honey bees, Bee Palooza, MSU Campus, June, 2012 (about 100)

Nemeth, A. "Insecticide synergism affect honey bee learning during navigation," High School Honors Science Program Report Presentation, MSU, Sept 2010

Donowich, J. "Memory of decay of honey bee relay landscape learning," High School Honors Science Program Report Presentation, MSU, Sept 2010

Riddle, J. "Honey bees and beekeeping, show and tell," Ag Awareness Day. Hastings, MI, May 2010 (625 3rd grade students)

Kondamuri, N. "Influence of Relay Landscape Learning on Honeybee Homing Rate," High School Honors Science Program Report Presentation, MSU, Sept 2009

Shin, J. "Ontogeny of Honey Bee Orientation Flights," High School Honors Science Program Report Presentation, MSU, Sept 2009

Riddle, J. "Honey bees and beekeeping, show and tell," Barry County Extension 4-H Youth Program. Hastings, MI, May 2009 (475 3rd grade students)

Lin, S. "Mechanism by which the juvenile hormone analog methoprene induces accelerated behavioral development in worker honey bees, *Apis mellifera*," High School Honors Science Program Report Presentation, MSU, Sept 2007

Zhao, G. "Electronic monitoring of *Varroa destructor* feeding behavior on honey bee *Apis mellifera*," High School Honors Science Program Report Presentation, MSU, Aug 2004

Tuitele, F. "The amount of pollen grains ingested by larvae of honey bee (*Apis mellifera*) worker, drone and queen of different ages," High School Honors Science Program Report Presentation, MSU, Aug 2004

Lee, G., L.I. Araujo. "Effect of carbon dioxide on honey bee foraging behavior, JH titer and sensitivity to JH," High School Honors Science Program Report Presentation, MSU Aug, 2003

Taua, L. "*Nosema* spore production in honey bee workers performing different tasks," High School Honors Science Program Report Presentation, MSU, Aug 2002

Michelak, S. Presentation to 7th grade Perry Middle School, May 2002. (200)

Lin, H. "Other products of the bee hive," Southeast Michigan Beekeepers' Association 62nd Annual Bee School, Schoolcraft College, MI, Mar 2002 (160)

Lin, H. "It is not just honey: other hive products you can harvest from bees," Agricultural and Natural Resources Week Beekeeping Program, MSU, Mar 2002 (160)

Krishnamurti, P. "Comparison of protein profiles between healthy and *Nosema*-infected honey bee workers (*Apis mellifera* L.)," High School Honors Science Program Report Presentation, MSU, Aug 2001

Mathews, E. "What I've learned about *Nosema* and how it affects bees," Minority Research Program Report Presentation, MSU, July 2001

Hanley, A.V. "MSU Apiculture Summer Research Report," Southwest Michigan Beekeepers Association. Paw Paw, MI, July 2001 (12)

Michelak, S. Presentation to 7th grade Perry Middle School, May 2001 (200)

Lin, H. "An update on *Nosema* research and its possible alternative control," Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2001 (120)

Hanley, A.V. "Transgenic pollen and honey bees," Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, Mar 2001 (120)

Hanley, A.V. "Effect of transgenic pollen on honey bees," Michigan Beekeepers Association Fall Meeting, Big Rapids, MI, Oct 2000 (80)

Foster, E.S. "Effects of CO₂ anesthesia on behavior and physiology/after-hours controlled mating," Michigan Beekeepers Association Fall Meeting, Big Rapids, MI, Oct 2000 (80)

Foster, E.S. "The effect of CO₂ narcosis on the juvenile hormone profile of the worker honey bee, *Apis mellifera* L.," Ronald E. McNair Post-Baccalaureate Achievement Program and Summer Research Opportunity Program Report Presentation, Oct 2000

Lin, H. "Honey bee perfume," Southeast Michigan Beekeepers' Association 60th Annual Bee School, Schoolcraft College, MI, Mar 2000 (120)

Lin, H. "Royal jelly, health effects and production," Agricultural and Natural Resources Week Beekeeping Program, MSU, Mar 2000 (180)

Dusset, C. "Short-term changes of juvenile hormone due to stress," Undergraduate Research Opportunity Program Report Presentation, MSU, Oct 2000

Workshops and Short Courses

Year	Title	Audience	Organized by, Location
2012 97, 96	Honey bee biology and Beekeeping	General public, 30	MSU Evening College
2011	Measuring LD50 for <i>Varroa</i> mites	Haitian Beekeepers, 50	Benito, Haiti
2007	Honey bee queen rearing and beekeeping essentials	Nepalese beekeepers, 16	Rapti Beekeepers Association
2004	Queen rearing	Beekeepers, 9	Z.Y. Huang, MSU
2005	Honey Bee Biology (3 lectures)	Korean Teachers, 20	MSU

2003	Package bee installation	Beekeepers, 15	Z.Y. Huang, MSU
2001 2000	Beginning level beekeeping	Beekeepers, 20 each	Z.Y. Huang, MSU
1998	Beekeeping Short Course	American beekeepers, 60	Gene Robinson University of Illinois
1997 1998	Radiochemical assay of insect juvenile hormone biosynthesis	One day workshop for undergraduate students, 50	David Borst Illinois State University
1993	Behavioral Physiology and Ecology of Honey Bees	2 week workshop Beekeepers and scientists from China, 20	Z.Y. Huang, China Agricultural University

Media Appearance and Interviews

Interview by State News, MSU news, Michigan Radio, WDET, CBS, quartz.com, discovery.com, MI Impact, 2015

Interview by Michigan Radio, Interlochen Public Radio, WDET-NPR, 2014

Interview by State News, June, 2013

Interview by State News, July, 2011

Interview by Lansing State Journal, August, State News, June, WJR talk radio, April, 2010

Interview by State News, July 2008

Interview related to honey bee colony collapse disorder (Detroit Free Press, Michigan Radio, Michigan Farm News, Lansing State Journal, Kalamazoo Gazette, WKAR Michigan Public Radio, interlochen radio, Saginaw News, MSU Futures Magazine, MSU ANR Communications Office) 2007

Phone interview by Lansing State Journal, Feb 2007

Interview by MSU news, Dec 2006 (<http://special.newsroom.msu.edu/honey/>)

Interview by State News, Nov 2006 (<http://www.statenews.com/article.phtml?pk=38687>)

Interview by MSU news, Oct 2006 (<http://newsroom.msu.edu/site/indexer/2883/content.htm>)

Interview by Futures magazine (MAES, MSU), Dec 2005

Interview by Focal Point (MSU student TV), Nov 2005

Story by WKAR radio, Sept 23, 2005, <http://wkar.org/morningedition/story.php?storyid=806>

MSU-Today news regarding beeography, July 2005,

<http://www.msutoday.msu.edu/research/index.php3?article=15Jul2005-8>

MSUE news regarding beeography, June 20, 2005,

http://www.green.msu.edu/articles/Photogenic_Bees_Huang.htm

Interview by State News, regarding PNAS paper, Dec 1, 2004

Phone Interview by CBC, regarding PNAS paper, Nov 29, 2004

Interview by MSU news, regarding PNAS paper, Nov 11, 2004

Interview by Michigan Public Radio (later broadcasted on NPR), May 17, 2004

Phone interview regarding honey bees, Kalamazoo Gazette, May 4, 2004

Phone interview regarding bumble bees, Kalamazoo Gazette, May 5, 2004

Radio interview by Farm Radio Network on bees and pollination, March 9, 2004

Phone interview by Oakland Press, Sept 3, 2003

TV interview by HOM-TV (Meridian Township, MI) on bee sting allergies, May 28, 2003

Radio interview by Lansing State Journal on bee stings, May 19, 2003

Radio interview by Farm Radio Network on bees and pollination, May 14, 2003

Radio interview by Michigan Farm Radio (Grand Rapids, MI) on "beebase," May 17, 2002

Research News, MSU, "Mite-zapper wins MUCI grant," p. 7, Spring 2002

MSU Today, “Bees for hire: new web site will offer match-making,” Mar 8, 2002
 TV interview by PBS on flower scent and plaque of honey bees, Feb 27, 2002
 Growing GREEN newsletter, “Spartan Mitezapper Saving the Honeybee,” Sep. 2001
 The State News, “Honeybees in jeopardy,” Oct 8, 2001
 Associated Press, “Field abuzz for bees brought in for pollination,” Sept 29, 2001
 Booth News (picked by AP), “Swarms make raid on wasp, hornet killer,” Sept 6, 2001
 Kalamazoo Gazette, “Bee lovers abuzz over Michigan invention,” front page, July 27, 2001
 Radio interview on a talk show (www.comedyworld.com) on insect eating, 2000
 Radio interview by Lansing State Journal (Source for Kid Science on July 5), 2000
 TV interview by News 6 (Lansing) on honey bees and wasps, Sept 2000
 Radio interview by Michigan Farm Radio (Grand Rapids) on bees and mites, Aug 2000
 TV interview by News 6 (Lansing) on honey bees and wasps, Oct 1999

Photography

Bee photo (**cover**), Apidologie, all 2016 issues
 Bee photos (9 photos), The Hive and the Honey Bee, 2015
 Bee photo (**cover**), American Bee Journal, Nov 2015
 Bee Photo (**cover**), Biology Letters, Feb 2014
 Bee photo (**cover**), American Bee Journal, Mar 2013
 Bee photo (**cover**), Bee Culture, Mar 2013
 Bee photo (**book cover**), Honey Bee Biology and Beekeeping, D.M. Caron, L.C. Connor, 2013
 Bee photo, Science, March 9, 2012
 Bee photo, Sciencenews.com, March 8, 2012
 Bee photo (**cover**), American Bee Journal, Sept 2011
 Bee photo, Arnoldia, Harvard University, 2011
 Bee photo (**cover**), American Bee Journal, July 2010
 Bee photo (**book cover**), Honey Bee Hobbyist: The Care and Keeping of Bees, N. Gary, 2009
 Bee photo (**cover**), American Bee Journal, May 2008
 Bee photo (**covers**), American Bee Journal, March, April, May 2007
 Bee photo (**cover**), Abstracts of “Honey Bee Genomics and Biology”, May 2007
 Bee photo (**cover**), MSU Entomology 100 Year Celebration Brochure, Apr 2007
 Bee photo (**cover**), Midwest Beekeepers, Mar 2007
 Bee Photo (**cover**), Chinese Bulletin of Entomology, Jan 2007
 Bee photos (**four, one**), American Bee Journal, Oct, Nov 2006
 Bee photo (**covers**), American Bee Journal, March, June, July, Aug 2006
 Bee photo, Vlaams Nederlandse Imkersfederatie (Beekeeping for Belgium in Netherlands), 2005
 Bee photo, NSF poster for the BeeSpace Project (UIUC), Dec 2005
 Bee photo (**cover**), Bee World, Dec 2005
 Bee photo (**cover**), American Bee Journal, Nov 2005
 Bee photos (two), Journal of Chemical Education 82: 810, Jan 2005
 Bee photo (**cover**), Bee Culture, Oct 2005
 Mite photo (**cover**), German Bee Journal (Bienen), April 2005
 Mite photo, World-Watch 18: 9, Sept/Oct 2005 (‘Vampire’ mite ravages US honeybee population)
 Bee photo, Science (307:31), Jan 7, 2005
 Bee photo (**cover**), PNAS, Nov 29, 2004
 Bee photo, Science, (<http://sciencenow.sciencemag.org/cgi/content/full/2004/1130/3>)
 Bee photo (**cover**), J. Experimental Biology 207 (19), Nov 2004
 Bee photos (four), Feb 2004 issue of NIH publication No. 04-4932,
Findings (web version: <http://www.nigms.nih.gov/news/findings/feb04/sting.html>)

- Bee photo, Turkish Bee Journal, Oct 2004 (p 32) (regarding cyberbee.msu.edu)
- Bee photos (two), Belgium Bee Journal, June, 2004 (pp 14-15)
- Bee photo, Current Biology (14: R178), Mar 9, 2004
- Bee photo, Nature Reviews Genetics (4: 932), Dec 01, 2003
- Bee photo, Science (<http://sciencenow.sciencemag.org/cgi/content/full/2003/1010/3>)
- Bee photo, Science main page, web version of Oct 10, 2003, uncredited
- Bee photo, Science (296: 636), April 2002 (credited on 296: 2336)
- Bee photo (**cover**), Genome Research 12: (4), Apr 2002

Teaching (15%)Full courses taught

Year/Semester	Class	Student #	Co-Teachers
Graduate			
2015F	Insect physiology & molecular biology	17	S. Thiem, K. Dong
2014S	Insect macrophotography	7	
2005S	Insect physiology	10	
2001S	Insect physiology	15	J. Miller, A. Raikhel
1999S	Insect physiology	18	A. Raikhel
Undergraduate			
2007F	Apiculture and pollination	8	
2004F	Apiculture and pollination	6	
2003F	Apiculture and pollination	9	
2002F	Apiculture and pollination	12	
2001S	Apiculture and pollination	15	W. Pett
2000F	Apiculture and pollination	12	
2000S	Apiculture and pollination	7	

Guest Lectures

Year/Semester	Class	Student #	Main Instructor
2015	Behavioral Ecology, MSU	15	Dr. J. Boughman
2007-2011 Summer	Integrating beekeeping across the curriculum, Oakland University, 3 lectures/ year	7-15	D. Tracy
2011-2014	Insect molecular biology	7-15	K. Dong, S. Thiem
2008-2014	Apiculture and pollination	12-25	W. Pett
2003	Insect physiology, juvenile hormone labs	12	J. Miller

Graduate Students (Major Professor)

Year	Name	Thesis	Current employment
2013-2016	Subas Porkhel	Division of labor in <i>A. mellifera</i> and <i>A. cerana</i> mixed colonies	Student
2006-2008	Yu-Lun Fu	Exploring new methods for <i>Varroa</i> mite control	Chemical company, Taiwan
2002-2004	Ting Zhou	<i>Varroa</i> mite reproductive biology	Professor, Institute of Apicultural Research, China
2000-2002	Anne Hanley	Effect of transgenic Bt corn pollen and glyphosate resistant canola pollen on honey bees	Currently practicing nursing

Graduate Students (Guidance committee)

Year	Name	Thesis	Current employment
2014-15	Victor Medev	Ubx and its effect on insects	Wayne State University
2013-	Knute	Pollinators in wild flowers	MSU

	Gundersen		
2011-2016	Nick Testa	Critical size of <i>Drosophila</i> and allometry	MSU
2011-2014	Lingxin Wang	Sodium channel biology	Pfizer WRD Postdoctoral Fellow
2003-2007	K.E. Wharton	Regulation of drone production	Lecturer at Ohio State University
2003-2007	J. Tuell	Blueberry pollinators	Fruit Integrator, MSU
2002-2007	D. Oskay	Honey bee flight muscle development (Univ. Puerto Rico)	Associate Professor, Namik Kemal University, Turkey

Postdoctoral fellow

Year	Name	Research topic	Current employment
2015-2016	Xianbing Xie	Effect of transportation on honey bee colonies	Associate Prof, Nanchang University, China
2015-2016	Shudong Luo	Effect of environmental and social conditions on pesticide toxicity	Scientist, Institute of Apicultural Research, Beijing, china
2011-2012	Xiangjie Zhu	<i>Nosema ceranae</i> effect on honey bees	Associate Prof, Fujian Agriculture and Forestry University, China
2011-2012	Wenchao Yang	Analysis of amino acid in pollen	Assistant Prof, Fujian Agriculture and Forestry University, China
2011-2012	Xianbing Xie	<i>Varroa</i> mite RNAi	Associate Prof, Nanchang University, China
2011-2012	Samina Qamer	Effect of insecticides on honey bee resistance to <i>Nosema ceranae</i>	Associate Prof, Government College University, Pakistan
2010 summer	R.W.K. Puchihewa	Efficacy of various pesticides for <i>Varroa</i> control	Lecturer University of Ruhuna, Sri Lanka
2006-2009	Kiheung Ahn	CCD related honey bee research	Prof, Konkuk University, Korea
2007	G. Suwannapong	<i>Nosema ceranae</i> effect on honey bees	Associate Prof, Burapha Univ., Thailand)
2006	Liangxian Sun	Honey bee larval in vitro rearing	Associate Professor, Quanzhou University, China
2003-2004	Yuchuan Qin	<i>Varroa</i> mite thermal tolerance	Prof, China Agricultural University
2002-2003	Jianguo Tan	Sodium channel biology (co-advised with Ke Dong)	Scientist, Monsanto
2000	Ronglin Yu	Melatonin effect on honey bees	Commercial beekeeper, Canada
2000-2001	J. Schmidt-Bailey	Small hive beetle detection	Commercial beekeeper, Michigan
1999-2002	Ruiwu Wang	Sodium channel in <i>Varroa</i>	Research scientist,

		mites	University of Alberta, Canada
1999-2002	Huarong Lin	<i>Nosema apis</i> effect on honey bees	Commercial beekeeper, Canada

High School Honors Science Program (HSHSP) Students at MSU

Year	Name	Research	Where
2014/15	Thomas Rachman	Okemos High School Science Program, Chemical communication in bees	
2013	Waldemar III Ortiz	Thermal preference of honey bees	Attending MSU
2012	Emily Crouse	<i>Nosema ceranae</i> effect on bees	
2010	Alison Nemeth	Honey bee navigation	Semi-finalist, Siemens Competition,
2007	Jill Dolowich	Honey bee navigation	Semi-finalist, Siemens Competition,
2009	Neil Kondamuri	Honey bee navigation	Semi-finalist, Siemens Competition, Duke University
2009	J. Shin	Honey bee navigation	Semi-finalist, Siemens Competition,
2007	Stephanie Lin	How methoprene affect bee behaviors	Semi-finalist, Siemens Competition,
2007	F. Tuitele	How methoprene affect bee behaviors	
2004	Jennifer Zhao	<i>Varroa</i> mite feeding monitoring	
2003	Grace Lee	Juvenile hormone in CO ₂ treated bees	Semi-finalist, Siemens Competition, U. Mich
2003	Laura Araujo	Juvenile hormone in CO ₂ treated bees	Semi-finalist, Siemens Competition
2002	Letti Taua	<i>Nosema apis</i> effect on bees	
2001	Priya Krishnamurti	Cyberbee website	
2001	Errol Mathews	The Minority Apprenticeship Program	
2001	Sowkya Rangarajan	The Minority Apprenticeship Program	

Visiting Scientists hosted in Laboratory

Year	Name	Research	Current employment
2015-2016	Qing Wang	Pesticide toxicity	Fujian Agriculture and Forestry University, China
2014-2015	Muhammad Imran	Lab rearing of bumble larvae	PMAS-Arid Agriculture University Rawalpindi Pakistan

2011-2012	Shujing Zhou	<i>Nosema ceranae</i> effect on bees	Ph.D. Student, Fujian Agriculture and Forestry University
2009, 2010	Toan Van Tran	<i>Nosema ceranae</i> effect on bees	Scientist, Department of Agriculture, Viet Nam
2008	Paitatoon Seanbualuang	<i>Nosema ceranae</i> effect on bees	Chulalongkorn University, Thailand
2008	Xianbing Xie	<i>Varroa</i> mite reproduction	Jiangxi Agricultural University, China
2007	Laurianne Leniaud	Termite juvenile hormone measurement	University of Tours, France
2006	Jakob Wegener	Honey bee ecdysone measurement	Länderinstitut für Bienenkunde, Germany
2006	Marie-Pierre Schippers	Honey bee juvenile hormone measurement	McMaster University, Canada
2004	Rong Kou	Cockroach juvenile hormone measurement	Scientist, Academia Sinica, Taiwan
2004	Kathryn Gardner	Honey bee juvenile hormone measurement	Cornell University
2002-2003	Ting Zhou	<i>Varroa</i> mite molecular classification	Prof, Institute of Apicultural Research, China
2003	Zhijiang Zeng	Juvenile hormone in swarming colonies	Jiangxi Agric University, China

Service (10%)

Symposia/Meetings Organized

“Contribution of social insect studies to science and society,” Program Symposium, Entomological Society of America, Indianapolis, IN, 2006 (with T. Giray)
 Agricultural and Natural Resources Week Beekeeping Program at MSU, 1999-2005
 Informal Conference, Overseas Chinese Entomologists Association, ESA, 2000
 Symposium on mechanism of division of labor, International Union for the Study of Social Insects, Sapporo, Japan, 2002

Service to journals & publications

Editorial Board Member

Scientific reports, March 2015 - present
 Apidologie (International Scientific Board), 2011 - present
 Insect Science, 2001 – present
 BeeScience, 1992 - 1994
 The Chinese Association of Agricultural Students & Scholars Journal, 1992-1993

Reviewer

Journals

2015: *Science, Journal of Insect Science, the Journal of Animal and Plant Sciences, Insectes Sociaux, Naturwissenschaften, Proceedings of Royal Society B, J. Invertebrate Pathology, Insect Science, Environmental Entomology, Anais da Academia Brasileira de Ciencias*

2014: *Plos Biology, Plos One, Insect Science, Journal of Experimental Biology*

Prior years:

Analytical and Bioanalytical Chemistry, Apidologie, American Bee Journal, American Naturalist, Animal Behavior, Annals of the Entomological Society of America, BeeScience, Bee World, Behavioral Ecology and Sociobiology, BMC Genetics, Comparative Biochemistry and Physiology, Current Zoology (China), Entomological Science (Japan), Entomologia Sinica, Environmental Biosafety Research, Environmental Microbiology and Environmental Microbiology Reports, Food Chemistry, Insect Molecular Biology, Insectes Sociaux, Insect Science, Journal of Apicultural Research, Journal of Applied Entomology, Journal of Comparative Physiology, Journal of Economic Entomology, Journal of Environmental Entomology, Journal of Experimental Biology, Journal of Insect Physiology, Journal of Proteome Research, Journal of Visual Research, Naturwissenschaften, Psyche, Turkish Journal of Zoology, PLOS One, PLOS Biology, Proceedings of Royal Society, PNAS, Veterinary Parasitology

Grants

Austria Science Foundation, Biotechnology and Biological Sciences Research Council (UK), Israel Natural Science Foundation, National Science Foundation (USA), National Natural Science Foundation of China, Poland National Science Center, USDA-National Research Initiative, USDA-North Central Region SARE Program, USDA National Labs Project Plan Review

Editor-in-Chief

SINO-Ecologists Overseas Newsletter, 1990
Chinese Illini, 1991-1992

Treasurer

Overseas China Education Fund (www.ocef.org) 1996-1998

Vice President

American Association of Professional Apiculturists, 2012
MSU Chinese American Faculty Association, 2000-2001
SINO-Ecologists Club Overseas, 1990

President

American Association of Professional Apiculturists, 2013
Chinese Faculty Club, 2010-2011
President-elect nominee, Intl Union for the Study of Social Insects, N. Amer. Section, 2001
Overseas Chinese Entomologists Association, 2000
Apiculture Club, University of Guelph, 1986

Chair/Vice Chair

Chair of board of directors, Heartland Apicultural Society, 2012-2014, 2014-2016
NCR202, Health and survival of honey bee colonies, 2004-2005
Board of directors, Professor Huang Pi-Cheng Scholarship, 1999-2005
Board of directors, Chinese Heritage Center, Lansing, Michigan, 1999-2002

Entomological Society of America

Section Cd3 Moderator, Annual Meeting of 2002
Student Competition Moderator, Annual Meeting of 2002, 2001
Student Competition Judge, Annual Meeting of 2000
Chair, Section Cb (Apiculture and Social Insects), 2001
Vice-Chair, Section Cb (Apiculture and Social Insects), 2000
Secretary, Section Cb (Apiculture and Social Insects), 1999

Webmaster/Webhost

<http://cfc.bees.net>, 2010- (Chinese Faculty Club website)
<http://cyberbee.net>, 1997-2011 (Featured in *Science*, NetWatch Section, June 2000)
<http://sfi.cyberbee.net>, 2000-05 (Santa Fe Institute Social Insect Working Group)
host: <http://michiganbees.org>, 2004-07, 2011- (Michigan Beekeepers' Association)
<http://iussi.bees.net>, 2002-08, host: 2010- (Intl Union for the Study of Social Insects, N. Amer. Section)
<http://www.soscef.org>, 1998, host: 1999-2005 (SOS China Education Fund, now ocef.org)

Member

IOBC Global Working Group on Transgenic Organisms in IPM and Biocontrol, 2002-2006
NC1173, Sustainable Solutions to Problems Affecting Bee Health, 2009-2114
NCR202, Health and survival of honey bee colonies, 1998-2003
Social Insect Working Group, Santa Fe Institute, 2000-2004
Award committee, American Association of Professional Apiculturists, 2001

Service to Michigan State University

College and University Service

College Academic Council, College of Agriculture and Natural Resources, 2011-2013
College Graduate Committee, 2005-2007
Interim CANR representative to the Academic Council/Faculty Council, Fall 2003

Department Service

Entomology Seminar Committee, 2016
Entomology Graduate Committee, 2002-2009
Department Advisory Committee (to the Chair), 2005-2007
Computer Committee, Awards Committee, 2001
Seminar Committee, 1999-2000
Seminar speakers hosted: E. Tibbitts (2x), D. Borst, S. Cho, Y. Le Conte, D.C. Marshall, D. Moore, R.E. Page, R.W.K. Punchihewa, G. Gamboa, Z.R. Shen, B. Stay, G.E. Robinson, E. Vargo, J. Nieh
Hutson student proposal reviewer

Professional Development

Workshops and Seminars Attended

The Iceman's Guide to Competitive Advantage in NIH R01 Grant Writing, MSU, Aug 2014
Honey Bee Genomics and Biology, Cold Spring Harbor, NY, May 6-8, 2007, 2010
Artificial insemination of honey bee queens, Ohio State University, June 2006
MSU portal training for extension faculty and staff, Dec 2004
A Field Guide to GenBank and NCBI Molecular Biology Resources, Feb 2004

Summer Fruit Tour and In-service, Aug 2003
Lilly Teaching Fellowship, MSU, 2002-2003
Workshop on Faculty Fulbright Opportunities, April 2003
USDA grant writing workshop, St Paul, Minnesota, Sept 2002
Cooperative Learning Applications, MSU, Aug 2002
SBIR/STTR Grants: How to Get Funded, MSU, Feb 2002
How to Survive in a Research Intensive Environment-III (Grant Writing Workshop), MSU, 2001
Computer Workshop: Coldfusion Database Programming (2 day workshop), MSU, 2001
Computer Workshop: Microsoft Access Database (1 day workshop), MSU, 2001
Computer Workshop: Macromedia Flash (1 day workshop), MSU, 2000
Computer Workshop: Macromedia Dreamweaver (1 day workshop), MSU, 2000
How to Survive in a Research Intensive Environment-I (tenure process), MSU, 2000
Using Adobe Photoshop (5 day workshop), UIUC, 1997
Mathematica (1 day workshop), Wolfram Research Inc, 1996
Computer Programming in C++ 110 (regular course), University of Illinois, 1995
Computer Programming in APL (short course), University of Guelph, 1985
Computer Programming in FORTRAN (short course), University of Guelph, 1985

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