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Current Position

Associate Professor, Department of Entomology, Michigan State University

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 Program (ESPP), MSU

Wayne State University

Adjunct Faculty (2014-2015, 2024-) for serving as guidance committee member.

International Institutions

Visiting scientist (2023-24), Guangdong Institute of Zoology, China

Adjunct Faculty (2017-19), Henan Institute of Science and Technology, Xingxiang, China

Adjunct Faculty (2012-15), Fujian Agriculture and Forestry University, Fuzhou, China

Senior Visiting Scientist (2000), Xishuangbanna Tropical Botanical Garden, Yunnan, China

Guest Professorship (2011-15), China Agricultural University, Beijing, China

Guest Professorship (2010-15), Institute of Apicultural Research, Beijing, China

Guest Professorship (1999-2004), Yunnan Agricultural University, Yunnan, China

Professional Affiliations

Sigma Xi, Full member

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 (Life Member)

RESEARCH (75% after 2021, 50% 2014-2021, 25% 1999-2013)**Professional Awards/Honors in Research and Extension**

Listed in the “Top 2% Scientists” by Elsevier, 2019, 2020, 2021, and 2022

<https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/6>

Keynote Speaker, Pennsylvania State Beekeepers Conference, State College, PA Oct 2016

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

Refereed Journal Articles (=corresponding author)*

122. Nieh, J.C.* , M. Endler, A. Rubanov, A. Neskovic¹, X. Xie, H. Li, **Z.Y. Huang***, 2024. Immune priming of honey bees protects against a major microsporidian pathogen. Submitted.
121. Donthu, R., J.A.P. Marcelino, R. Giordano... **Z.Y. Huang**. 2024. HBeeID: a molecular tool that identifies honey bee subspecies from different geographic populations. BMC Bioinformatics 25: 278. <https://doi.org/10.1186/s12859-024-05776-9>
120. Wang, L.-L., **Z.Y. Huang**, W.F. Dai, Y.-P. Yang, Y.-W. Duan. 2024. Mixed effects of honey bees on pollination function in the Tibetan alpine grasslands. Nat Commun 15: 8164 . <https://doi.org/10.1038/s41467-024-52465-5>
119. Zhang, L., L. Shao, M.F. Raza, Y. Zhang, **Z.Y. Huang**, Y. Chen. S. Su, R. Han, W. Li*. 2024. Large cells suppress the reproduction of Varroa destructor. Pest Management Science. <https://doi.org/10.1002/ps.8249>
118. Liu, F., H. Zhao, Q. Li, L. Wu, D. Cao, Y. Zhang, **Z.Y. Huang**. 2023. MicroRNA *ame-let7*-targets *Amdop2* to increase sucrose sensitivity in honey bees (*Apis mellifera*). Frontiers in Zoology. <https://doi.org/10.1186/s12983-023-00519-7>
117. Liu, F., H. Zhao, Q. Liu, W. Yin, L. Wu, D. Cao, Y. Zhang, **Z.Y. Huang***. 2023. MicroRNA *ame-let-7* inhibits *Amdop2* expression to regulate sucrose responsiveness in forager honey bees (*Apis mellifera*). Frontiers in Zoology 20: 41. <https://doi.org/10.1186/s12983-023-00519-7>
116. Liu, J. R. Zhang, R. Tang, Y. Zhang, R. Guo, G. Xu, D. Chen, **Z.Y. Huang**, Y. Chen, R. Han, W. Li. 2023. The role of honey bee derived aliphatic esters in the host-finding behavior of *Varroa destructor*" Insects 14, no. 1: 24. <https://doi.org/10.3390/insects14010024>

115. Browning, A., D. Smitley, J. Studyvin, E.S. Runkle, **Z.Y. Huang**, E. Hotchkiss, 2023. Variation in pollinator visitation among garden cultivars of marigold, portulaca, and bidens. Journal of Economic Entomology 116: 872–881, <https://doi.org/10.1093/jee/toad050>
114. Wen, P., J. Chen, **Z.Y. Huang**. 2023. Death recognition by undertaker honey bees based on reduced cuticular hydrocarbon emissions. Entomologia Generalis. DOI: [10.1127/entomologia/2023/1607](https://doi.org/10.1127/entomologia/2023/1607)
113. Incorvaia, D.C., T. Dalrymple, **Z.Y. Huang**, F.C. Dyer. 2022. Short and long-term modulation of forager motivation by colony state in bumblebees. Animal Behavior. 190: 61-70. <https://doi.org/10.1016/j.anbehav.2022.05.007>
112. Démares, F.J., D. Schmehl, J.R. Bloomquist, A.R. Cabrera, **Z.Y. Huang**, P. Lau, J. Rangel, J. Sullivan, X. Xie, J.D. Ellis*. 2022. Honey bee (*Apis mellifera*) exposure to pesticide residues in nectar and pollen in urban and suburban environments from four regions of the United States. Environmental Toxicology and Chemistry. <https://doi.org/10.1002/etc.5298>
111. Li, W., Y. Zhang^a, H. Peng, R. Zhang, Z. Wang, **Z.Y. Huang**, Y.P. Chen, R. Han*. 2021. The cell invasion preference of *Varroa destructor* between the original and new honey bee hosts. International J. Parasitology. doi:10.1016/j.ijpara.2021.08.001
110. Liu, F. L. Wu, Y. Zhang, L. Li, Q. Li, **Z.Y. Huang***, H. Zhao*. 2021. *Mblk-1* regulates sugar responsiveness in honey bee (*Apis mellifera*) foragers. Insect Science. Doi:10.1111/1744-7917.12971
109. Ma, Z., Y. Wang, **Z.Y. Huang**, S. Cheng, J. Xu, Z. Zhou*. 2021. Isolation of protein-free chitin spore coats of *Nosema ceranae* and its application to screen the interactive spore wall proteins. Arch Microbiol. doi:10.1007/s00203-021-02214-9
108. Saleem, M.S., **Z.Y. Huang***, M. Milbrath. 2020. Neonicotinoid pesticides are more toxic to honey bees at lower temperatures: implications for overwintering bees. Frontiers in Ecology and Evolution. doi:10.3389/fevo.2020.556856
107. Liu, F., X. Xu, Y. Zhang, **Z.Y. Huang***, H. Zhao. 2020. A meta-analysis shows that screen bottom boards can significantly reduce *Varroa destructor* population. Insects 11: 624. doi:10.3390/insects11090624
106. Zhang, B., X. Su, L. Xie, C. Zhen, G. Hu, K. Jiang, **Z.Y. Huang**, R. Liu, Y. Gao, X. Chen, X. Gao. 2020. Multiple detoxification genes confer imidacloprid resistance to *Sitobion avenae* Fabricius. Crop Protection 128: 105014. doi:10.1016/j.cropro.2019.105014
105. Li, W., C. Wang, **Z.Y. Huang**, Y. Chen, R. Han. 2019. Reproduction of distinct *Varroa destructor* genotypes on honey bee worker brood. Insects 10:372. doi: 10.3390/insects10110372

104. Lau, P., V. Bryant, J.D. Ellis, **Z.Y. Huang**, J. Sullivan, D.R. Schmehl, A.R. Cabrera, J. Rangel. 2019. Seasonal variation of pollen collected by honey bees (*Apis mellifera*) in developed areas across four regions in the United States. *PloS One* 14 (6): e0217294 doi:10.1371/journal.pone.0217294 [reported on sciencedaily.com]
103. Yang, W., C. Li C. Zhang, **Z.Y. Huang***, X. Miao*. 2019. Pathway of 5-hydroxymethyl-2-furaldehyde formation in honey. *J. Food Science and Technology* 56: 2417–2425
102. Liu, F., T. Shi, L. Qi, X. Su, D. Wang, J. Dong, **Z.Y. Huang***. 2019. lncRNA profile of *Apis mellifera* and its possible role in behavioural transition from nurses to foragers. *BMC Genomics*. doi:10.1186/s12864-019-5664-7
101. Zhang, C.[#], S. Pokhrel[#], Z. Wu, X. Miao, **Z.Y. Huang***, W. Yang*. 2019. Longevity, food consumption and foraging performance of *Apis cerana* and *Apis mellifera* in mixed colonies. *Apidologie*. doi:10.1007/s13592-018-0626-7
100. Fine, J.D.* , Shpigler, H.Y.* , A. Ray, N.J. Beach, A. Sankey, A. Cash-Ahmed, **Z.Y. Huang**, I. Astrauskaite, R. Chao, W. Streyer, H. Zhao, G.E. Robinson. 2018. Quantifying the effects of pollen nutrition on honey bee queen egg laying with a new laboratory-based system. *PLoS ONE* 13(9): e0203444. doi:10.1371/journal.pone.0203444
99. Tibbetts*, M.L. Fearon, E. Wong, **Z.Y. Huang**, R.M. Tinghitella. 2018. Rapid juvenile hormone downregulation in subordinate wasp queens facilitates stable cooperation. *Proceedings of Royal Society B*. doi:10.1098/rspb.2017.2645
98. Li, Y., L. Zhang, Y. Yi, W. Hu, Y. Guo, Z. Zeng, **Z.Y. Huang**, Z. Wang. 2017. Genome-wide DNA methylation changes associated with olfactory learning in *Apis mellifera*. *Scientific Reports* doi:10.1038/s41598-017-17046-1
97. Yang, W., Z. Wu., **Z.Y. Huang***, X. Miao*, 2017 Preservation of orange juice using propolis. *J. Food Science and Technology*, 54: 3375–3383
96. Liu, F., T. Shi, W. Yin, X. Su, L. Qi, **Z.Y. Huang***, S. Zhang, L. Yu, B. Grace. 2017. The *microRNA ame-miR-279a* regulates sucrose responsiveness in forager honey bees (*Apis mellifera*). *Insect Biochemistry and Molecular Biology*. 90: 34-42
95. **Huang, Z.Y.**, G. Bian, Z. Xi, X. Xie*, 2017. Genes important for survival or reproduction in *Varroa destructor* identified by RNA. *Insect Science*. doi:10.1111/1744-7917.12513. (Featured on **MSU News**, Sciencedaily.com and other news)
94. **Huang, Z.Y.***, S. Lin, K. Ahn. 2016. Methoprene does not affect juvenile hormone titers in honey bee (*Apis mellifera*) workers. *Insect Science*. doi:10.1111/1744-7917.12411
93. Shpigler, S*, A.J. Siegel, **Z.Y. Huang**, G. Bloch. 2016. No effect of juvenile hormone on task performance in a bumblebee (*Bombus terrestris*) supports an evolutionary link

between endocrine signaling and social complexity. Hormones and Behavior. doi:10.1016/j.yhbeh.2016.08.004

92. Tibbetts, E.A., K. Crocker, **Z.Y. Huang**. 2016. Socially selected ornaments influence hormone titers of signalers and receivers. PNAS 113: 8478-8483.
91. Xie, X., **Z.Y. Huang**^{*}, Z. Zeng. 2016. Why do Varroa mites prefer nurse bees? 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. J. 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. doi: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 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*. J. 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. J. 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. Apicultural 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*). J. 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
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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. Economic 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. J. Insect Physiology. doi:10.1016/j.jinsphys.2013.04.006

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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
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Funded Research Proposals

Project (-grantor)	PI(s)	Begin Date	End Date	Total Award	Huang Award
2024					
Transportation stress in honey bees	Huang	9/2024	8/2027	\$750,000	\$300,000
Honey bee queen tracking	Huang, QC Quan	3/2024	3/2025	\$50,000	\$50,000
2023					
Teaching bees to Native Americans – MSU internal extension grant	Huang	3/2023	12/2023	\$500	\$500
2022					
Exploring juvenile hormone as a control against <i>Varroa destructor</i> – Project Apism	Huang	3/2023	12/2023	\$21,605	\$21,605
Mechanisms of fem regulating ovary differentiation in honey bees – National NSF China	Z.L. Wang	1/2022	12/2025	\$350,000 RMB	\$0
2017					
Equipment Grant, CANR	Huang	9/1/17	12/30/17	\$50,000	\$50,000
2016					
Protecting Pollinators with Economically Feasible and Environmentally Sound Ornamental Horticulture—NIFA-SCRI	Huang	8/1/16	8/30/22	\$5 mill	\$180,000
Varroa control using new plant based chemicals—North Dakota Dept of Ag.	Huang	8/1/16	12/30/18	\$27,431	\$27,431
Indoor rearing of honey bees -UIUC via DARPA	Huang	4/1/16	3/31/18	\$2.3 mill	\$163,188
General Bee Research - 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	4/31/19	\$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 GREEN	Huang	3/01/12	6/30/13	\$20,000	\$20,000

Project (-grantor)	PI(s)	Begin Date	End Date	Total Award	Huang Award
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
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	\$113,000

Project (-grantor)	PI(s)	Begin Date	End Date	Total Award	Huang Award
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
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 - National Natural Science Foundation of China	Qin Huang	3/01/02	9/30/05	~\$30,000 (200,000 RMB)	\$0
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 - MI U. Commercialization Initiatives (MUCI) Challenge Fund	Huang	3/01/02	9/30/04	\$30,000	\$30,000

Project (-grantor)	PI(s)	Begin Date	End Date	Total Award	Huang Award
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
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 Ag Pest Survey Grant	Huang	3/01/99	6/30/01	\$10,000	\$10,000

Project (-grantor)	PI(s)	Begin Date	End Date	Total Award	Huang Award
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
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
Total				\$13,514,373	\$1,965,612

Invited Panels

USDA NIFA AFRI's Pollinator Health Competitive Grant Program, Proposal Review, Oct 2024

USDA NIFA AFRI's Pollinator Health Competitive Grant Program, Proposal Review, Oct 2023

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]

Presentations

Invited Conference Presentations

1. **Huang, Z.Y.** 2022. Do methoprene and CO₂ affect JH titers in worker honey bees? Invited symposium talk at “Pleiotropism and newfunctionalization”, International Union for the Study of Social Insects, San Diego, July.
2. **Huang, Z.Y.** 2020. Research at MSU Honey Bee Lab. One Health Conference, Merida, Mexico, Feb.
Huang, Z.Y. 2019. Transportation sensitizes honey bees to insecticides. Puerto Rico Honey Bee and Evolution of Invasive Organisms on Islands, San Juan, Aug
3. **Huang, Z.Y.** 2019. Biology of the world-wide pest of honey bee, *Varroa destructor*. Overseas Youth Forum, Henan Normal University, Xinxiang, Henan, China. June
4. **Huang, Z.Y.**, S. Luo. 2019. Transportation sensitizes honey bees to insecticides. E-presentation to North Central ESA, Cicinnatti, USA. March
5. **Huang, Z.Y.** 2017. Effect of transportation and relocation on honey bees. Invited lecture, 2nd Forum on Pollinating Insects, Chinese Entomological Society, Beijing, China, May
6. **Huang, Z.Y.** 2017. Urban Beekeeping in US and its future. Plenary talk at LuoPing Honey Bee Cultural Festival, Yunan, China
7. **Huang, Z.Y.** 2016. Eco-physiology of moving honey bee colonies. Plenary talk at International Symposium of Honey Bee and Health, Fuzhou, Fujian, China
8. **Huang, Z.Y.** 2016. Pesticide toxicity varies with honey bee physiological castes, in Symposium 633: Regulation of Honey Bee Polyethism: Clock, Neuroendocrine System, and Environmental Toxicants, Joint ESA/ICE meeting, Orlando, FL
9. **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
10. **Huang, Z.Y.** 2014. Colony Collapse Disorder related research in the USA, Plenary speaker, Taiwan Apicultural Society Annual Conference. Oct
11. **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
12. **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
13. **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
14. **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

15. **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
16. **Huang, Z.Y.** 2010. Relay learning in honey bees and pesticide interactions, E-Presentation to the CCD Steering Committee Meeting, Feb
17. **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
18. **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
19. **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
20. **Huang, Z.Y.** 2008. Effect of transportation on honey bee physiology, North American Pollinator Protection Campaign Conference, Washington DC, Oct
21. **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
22. **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
23. **Huang, Z.Y.** 2006. Regulation of Foraging Age in Honey Bees by a Primer Pheromone, International Entomology Symposium, Beijing, China, Aug
24. **Huang, Z.Y.** 2006. Does the parasite *Nosema apis* manipulate host behavior through juvenile hormone? International Entomology Symposium, Beijing, China, Aug
25. **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
26. **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
27. **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
28. **Huang, Z.Y.** 2001. Mitezapper: a new device for *Varroa* mite control, XXXVII International Apicultural Congress, Durban, South Africa, Oct
29. **Huang, Z.Y.** 2000. Social inhibition of foraging honey bees, Santa Fe Institute Social Insects Working Group, Santa Fe, NM Oct
30. **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
31. **Huang, Z.Y.** 1998. Informal conference: Career development for Chinese entomologists, Annual Meeting of Entomological Society of America, Las Vegas, NE, Dec
32. **Huang, Z.Y.** 1998. Endocrine Control of Social Behavior in Invertebrates, Animal Behavior Society Meeting, Carbondale, IL, July
33. **Huang, Z.Y.** 1997. Apiculture for the 21st Century, International Symposium, E. Lansing, MI, June

34. **Huang, Z.Y.**, G.E. Robinson. 1994. The 12th International Congress of IUSSI, Paris, France, Aug
35. **Huang, Z.Y.**, G.E. Robinson. 1992. Annual Meeting of Entomological Society of America, Baltimore, MD, Dec
36. **Huang, Z.Y.**, G.E. Robinson. 1992. The 3rd International Congress of Neuroethology, McGill University, Montreal, Canada, Aug

Presentations at Institutions (Invited)

2023

1. Scientific writing, experimental design and statistics. Bee Research Institute, Jiangxi Agricultural University, China, 2023 (in person, 40)
2. Scientific writing, experimental design and statistics. Honey Bee Lab, Guangdong Zoology Institute, China, 2023 (in person, 12)
3. How stress affects honey bees. Guangdong Zoology Institute, China. Nov. 2023 (in person, 12)
4. Varroa mite reproductive biology. Honey Bee Lab, Guangdong Zoology Institute, China. Sept 2023 (12, zoom)
5. Mechanisms of division of labor. Honey Bee Lab, Guangdong Zoology Institute, China. Sept 2023 (12, zoom)

2022

6. Honey bees under stress: behavioral and physiological impacts. Dept of Entomology, Penn State University, Sept 30, 2022.

2021

7. What stresses honey bees, Yangzhou University, China, June 2021 (40, zoom)

2019

8. EcoSecurity and honey bee pollination in USA, Jiangxi Agric University, Nanchang, China
9. Effect of transportation and translocation on honey bees, Institute of Apic Research, China
10. EcoSecurity and honey bees, China Agricultural University, Beijing, China
11. Honey bees and pollinations in the US, Insitute of Plant and Environment Protection, Beijing Academy of Agriculture and Forestry Sciences, China
12. Flowers in bees' eyes, Insitute of Plant and Environment Protection, Beijing Academy of Agriculture and Forestry Sciences, China

2018

13. Progress on honey bee biology research, Guangxi University, Nanning, China
14. Eco-security of US agriculture due to bee crisis, College of Environmental Science, Zhongshan University, China
15. Honey bee crisis and ecological security of US agriculture, Hunan Agric Univ, China
16. Improving graduate education, Hunan Agric Univ. China
17. Honey bee crisis and ecological security of US agriculture, Kuming Insitute of Botany, China

2017

18. Seeing flowers via bee's eyes, Institute of Apic Research, Beijing, China
19. Methods for pollinator research, Henan Institute of Science and Technology, China

20. Experimental design, statistics and scientific writing, Henan Institute of Science and Technology, China
21. Seeing the flowers via bee's eyes, Henan Institute of Science and Technology, China
22. Effect of transportation and relocation on honey bees, Henan Institute of Science and Technology, China
23. Basics of honey bee photography, Henan Institute of Science and Technology, China
24. Seeing flowers via bee's eyes, Institute of Botany, Chinese Academy of Sciences.
25. Mankind and bees, bees and flowers, Chongqing Normal University, China

2016

26. *Varroa* mite reproductive biology, University of California at San Diego
27. Insect vision through digital photography. Kunming Botanic Institute, Yunnan, China
28. Eco-toxicology of honey bees, Southwest Forestry University, Yunnan, China
29. Eco-toxicology of honey bees, Institute of Zoology, Academy of Sciences, Beijing, China
30. Eco-toxicology of honey bees, Quanzhou Normal University, Fujian, China
31. Dealing with major threats to honey bees: *Varroa destructor* and *Nosema ceranae*, Biological Sciences, Wayne State University,
32. Drugged and driven is more deadly than drugged alone, MSU Entomology
33. Using digital photography to see through insects' eyes, MSU Entomology

2015

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

2014

39. UC San Diego, Does *Nosema apis* manipulate its host? Departmental Seminar
40. Institute of Apicultural Research, Beijing, China: Methods for studying pollination
41. Methods for studying pollinators and pollination, Fujian Agriculture and Forestry University, Fuzhou, China (and two more below)
42. What do honey bee see?
43. Mechanisms of social behavior in honey bees
44. National Ilan University, Taiwan, College education in USA and China

2013

45. Fujian Agriculture and Forestry University, Fuzhou, China
46. Nanchang University, Jiangxi, China
47. 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

48. Fujian Agriculture and Forestry, Fuzhou, China
49. Jiangxi Agricultural University, Nanchang, China

- 50. Jilin Apicultural Research Institute, Jilin, China (4 talks)
- 51. Academia Sinica, Teipei, Taiwan
Using RNAi to look for genes important for *Varroa* survival and reproduction
- 52. National Chung Hsing University, Taichung, Taiwan
Effect of pesticides on honey bee homing,
- 53. National Taiwan University, Taipei, Taiwan
Effect of transgenic pollen on honey bee health

2011

- 54. Fujian Agriculture and Forestry University, Fuzhou, China
- 55. Henan College of Science and Technology, Xinxiang, China
- 56. Hunan Agricultural University, Changsha, China
- 57. Zhejiang University, Hangzhou, China
- 58. Jiangsu Academy of Agricultural Sciences, Nanjing, China
- 59. Zhejiang Academy of Agricultural Sciences, Hangzhou, China

2010

- 60. Zhejiang University, Hangzhou, China
- 61. Jiangxi Agricultural University, Jiangxi, China (2 talks)
- 62. Horticulture Research Institute, Shang'xi Academy of Agricultural Sciences
- 63. Institute of Resource Insects, Academy of Agricultural Sciences, China (2 talks)

2009

- 64. Sydney University, Australia
- 65. Macquarie University, Australia
- 66. Commonwealth Scientific and Industrial Research Organization, Australia
- 67. Sichuan University (2 talks), Nanchang University (2 talks), China
- 68. Xishuanbanna Tropical Botanical Garden, China

2008

- 69. Zhejiang University Honey Bee Lab (S.K. Su), 4 talks, Hangzhou, China
- 99. Zhejiang University, Zoological Institute, Hangzhou, China
- 100. Jiangxi Agricultural University, Honey Bee Institute, Nanchang, China
- 101. Shanghai Institute of Plant Physiology and Ecology, Shanghai, China
- 102. Hunan Agricultural University, College of Life Sciences, Changsha, China
- 103. Zhongshan University, Environmental Group (B.C. Xia), Guangzhou, China
- 104. "Does *Nosema apis* manipulate honey bee behavior through JH production?" Social Insect Research Group, Arizona State University, March
- 105. "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

2007

- 106. "Does *Nosema apis* manipulate honey bee hosts via juvenile hormone?" Department of Entomology, University of Maryland, Oct
- 107. "Evolutionary ecology of the complementary sex determination gene in honey bees," Department of Entomology, China Agricultural University, Sept
- 108. "Importance of honey bees in Michigan agriculture and threats they face," Plant Coalition, Michigan State University, June

109. "Honey bees: overview of honey bee research at MSU bee biology lab," Department of Horticulture, Michigan State University, April
110. "Insect portraiture, two perspectives," Department of Entomology, Michigan State University, East Lansing, MI, Feb (with David Cappaert)

2006 and earlier

111. Resistance mechanisms of *Varroa* mites to chemicals," Jilin Apicultural Institute, Jilin, China, August 2006
112. "Evolution of the complementary sex-determination gene of honey bees," Jilin Apicultural Institute, Jilin, China, August 2006
113. "Mitezapper as a control method for *Varroa* mites," Jilin Apicultural Institute, Jilin, China, August 2006
114. "Honey bee research in the United States," Jilin Apicultural Institute, Jilin, China, August 2006
115. "Honey bee research and extension at MSU," Jilin Apicultural Institute, Jilin, China, August 2006
116. "Honey bee queen regulates egg gender when presented only drone cells," Rothenbuler Bee Laboratory, Ohio State University, Columbus, OH, June 2006
117. "Mechanism of Division of labor in honey bees," College of Life Sciences, Tunghai University, Taichung, Taiwan, Mar 2006
118. "Mechanism of Division of labor in honey bees," Department of Entomology, National Chung Hsing University, Taichung, Taiwan, Mar 2006
119. "Mechanism of Division of labor in honey bees," Department of Entomology, National Taiwan University, Taiwan, Mar 2006
120. "Does *Nosema* parasite produce juvenile hormone to manipulate honey bee behavior," Institute of Cellular and Organismal Biology, Academia Sinica, Taipei, Taiwan, Mar 2006
121. "Advances of insect pollination inside greenhouses," Institute of Vegetable and Flower Researches, Chinese Academy of Agricultural Sciences, Beijing, China, Mar 2006
122. "Honey bee research at MSU," College of Life Science, Sun Yat-Sen University, Guangzhou, China, Feb 2006
123. "Honey bee research at MSU," Bee Research Center, Guangdong Province Institute of Entomological Research, Guangdong, China, Feb 2006
124. "Regulation of division of labor in honey bees," College of Agronomy, Tropical Agricultural University of South China, Hainan, China, Feb 2006
125. "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
126. "Research Experience with honey bees and vision for insect pollination biology," USDA Solitary Bee Lab, Logan, UT, July 2005
127. "Working with honey bees, the past, the present and the future," USDA Honey Bee Lab, Weslaco, TX, June 2005
128. "Social modulation of foraging age in worker honey bees", Department of Biological Sciences, East Tennessee State University, Johnson City, TN, Sept 2004
129. "Regulation of foraging age in honey bees," Honey Bee Research Institute, Jiangxi Agricultural University, Nanchang, Jiangxi, China, April 2004
130. "Honey bee extension, teaching and research at the Michigan State University," Honey Bee Research Institute, Jiangxi Agricultural University, Nanchang, Jiangxi, China, April 2004
131. "Working with bees and their keepers, the Michigan experience," Department of Environmental Biology, University of Guelph, Guelph, Ont, Canada, Feb 2004

132. "Effect of transgenic corn pollen on honey bees and their pest," Dept. of Natural Resources and Environmental Sciences, University of Illinois, Oct 2003
133. "Honey bee queens regulate sex ratio by overriding a highly stereotyped behavioral program," Brain and Behavioral Group, MSU, Sept 2003
134. "Working with honey bees and their keepers: A five year summary," Department of Entomology, MSU, Sept 2003
135. "Let us bee social – what do we know about honey bee sociobiology," Xishuangbanna Tropical Botanical Garden, Yunnan, China, Apr 2002
136. "*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
137. "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
138. "Melatonin and division of labor in honey bees," Brain and Behavior Group, Neuroscience Program, MSU, Feb 2002
139. "Basic and applied research combined: honey bee projects at MSU," Zoological Institute, Chinese Academy of Sciences, Beijing, China, June 2001
140. "Honey bee research projects at MSU," Department of Entomology, China Agricultural University, June 2001
141. "Mitezapper: a new method for controlling *Varroa* mites," Institute of Apicultural Research, Chinese Academy of Agricultural Sciences, Beijing, China, June. 2001
142. "Basic and applied research combined: honey bee research at MSU," Xishuangbanna Tropical Botanical Garden, Yunnan, China, May 2001
143. "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
144. "Bumble bee biology and commercial rearing," Institute of Vegetable Research, Chinese Academy of Agricultural Sciences, China, Aug 2000
145. "Honey bee research at Michigan State University and North America," Institute of Apicultural Research, Chinese Academy of Agricultural Sciences, Aug 2000
146. "Recent entomological research in North America," Hunan Agricultural University, Dec 1999
147. "Regulation of division of labor in honey bees," Dept of Apiculture, Yunnan Agricultural University, Nov 1999
148. "Regulation of foraging age in honey bee workers," Dept. Entomology, Purdue University, Oct 1999
149. "Regulation of behavioral development in honey bees: genetic physiological, and biochemical mechanisms," Dept. Entomology, Michigan State University, June 1998
150. "*Nosema* disease: a hidden threat to honey bees," Dept. Entomology, Michigan State University, June 1998
151. Dept. Entomology, Michigan State University, Sept 1997
152. Dept. Biological Sciences, Illinois State University, Feb 1996
153. Hunan Agricultural College, Hunan, China, Dec 1993
154. Honey Bee Research Institute, Academy of Agricultural Science, Beijing, China, Oct 1993
155. Dept. of Plant Protection, Beijing Agricultural University, Beijing, China, Oct 1993
156. Entomological Society of Beijing, Beijing, China, Sept 1993
157. Dept. of Environmental Biology, University of Guelph, Ont, Canada, May 1988
158. Dept. of Entomology, University of Missouri, Columbia, MO, Nov 1988
159. The Dyce Laboratory, Cornell University, Ithaca, NY, Oct 1984

Presentations at Professional Meetings (Contributed)

160. Huang, Z.Y., M.S. Saleem. 2024. Pesticides disrupt temperature resiliency in honey bees. Excellence in Insect Science Symposium, MSU.
161. F. Liu, **Z.Y. Huang**, H. Zhao, Q. Li, L. Wu, D. Cao, Y. Zhang. 2024. A microRNA down-regulates a dopamine receptor to increase sucrose sensitivity in honey bees. American Bee Research Conference, New Orleans, Jan.
162. **Huang, Z.Y.** 2023. *Nosema ceranae* infection reduces worker honey bee flight capability. American Bee Research Conference. Jan.
163. **Huang, Z.Y.**, 2022. *Nosema ceranae* infection reduces queen honey bee flight behaviors 18th COLOSS conference, Dec
164. Huang, Z.Y., J. Zhang, L. Yin, S.M. Salim. 2021. Honey bee swimming behavior: adaptive and impaired by pesticide, 17th COLOSS conference, Oct
165. **Huang, Z.Y.** 2020. Honey bee swimming behavior: panicking or adaptive? MSU Beacon Conference (Zoom), August
166. **Huang, Z.Y.** 2020. Honey bee swimming behavior: panicking or adaptive (or poisoned bees more likely to drown)? MSU EEBB Conference (Zoom), April
167. Zhang, Y., F. Liu, **Z.Y. Huang**. 2020. Honey bee queen flight ability negatively impacted by *Nosema* infection. 2020 American Bee Research Conference, Chicago, IL
168. Saleem, M.S., **Z.Y. Huang**. 2020. Neonicotinoid pesticides are more toxic to honey bees at lower temperature: implications for overwintering bees. 2020 American Bee Research Conference, Chicago, IL
169. Zhang, J., **Z.Y. Huang**. 2020. Effect of various pollen substitute on honey bee longevity and size of hypopharyngeal glands. American Bee Research Conference, Chicago, IL
170. Yin, L., G. Lu, H. Zhang, Y. Chen, **Z.Y. Huang**, K. Wang, T. Ji, G. Chen. 2020. LncRNA profile in honeybee (*Apis mellifera*) worker larvae and its function on larval development. American Bee Research Conference, Chicago, IL
171. **Huang, Z.Y.**, J. Cui, X. Fu, Z. Zhang, H. Liu. 2019. Phoretic Varroa mite reduces flight performance in honey bee foragers. 2019 American Bee Research Conference, Phoenix, AZ
172. Li, H., **Z.Y. Huang**. 2019. Honey Bee Workers Have a Critical Size (Poster) 2019 American Bee Research Conference, Phoenix, AZ
173. Liu, F., T. Shi, W. Yin, X. Su, L. Qi, **Z.Y. Huang**, S. Zhang and L. Yu. 2019. The microRNA ame-miR-279a Regulates Sucrose Responsiveness of Forager Honey Bees (*Apis mellifera*) (Poster). 2019 American Bee Research Conference, Phoenix, AZ
174. Li, Y. **Z.Y. Huang**. 2018. Parasite manipulating hosts? *Nosema ceranae* infected honey bee workers are more easily accepted by non-nestmates, American Bee Research Conference, Reno, NV, Jan
175. Lau, P., J. Rangel, V. Bryant, A. Cabrera, D. Schmehl, J. Sullivan, **Z.Y. Huang**, James Ellis. 2017. Palynological analysis of pollen collected by honey bees (*Apis mellifera*) in developed areas in four regions of the United States. Annual Conference of Entomological Society of America, Dev, CO, Nov
176. **Huang, Z.Y.**, Y. Li. 2017. Parasite manipulating hosts: *Nosema ceranae* infected honey bee workers are more easily accepted by non-nestmates. Annual Conference of Entomological Society of America, Dev, CO, Nov
177. **Huang, Z.Y.**, X. Xie. 2017. Effect of transportation on honey bees. Protecting Pollinators in Urban Landscapes Conferences, Traverse City, MI, Oct
178. **Huang, Z.Y.** 2017. Parasite manipulating hosts? *Nosema ceranae* infected honey bee workers are more easily accepted by non-nestmates. Beacon 2017 Congress, MSU
179. Huang, Z.Y. 2016. Transportation sensitizes honey bees to pesticides. A Pollinator Forum, MSU

180. Cabrera, A.R., **Z.Y. Huang**, J. Sullivan, J. Rangel, P. Lau, V. Bryant, D.R. Schmehl, J.D. Ellis. 2016. Survey of imidacloprid residues in nectar and pollen collected by honey bees (*Apis mellifera*) in urban and suburban environments in different regions of the United States. XXV International Congress of Entomology, Orlando, FL. Oct
181. Rangel, J., P. Lau, **Z.Y. Huang**, A.R., Bryant, A.R. Cabrera, D.R. Schmehl, J. Sullivan, J.D. Ellis. 2016. Palynological analysis of pollen collected by honey bees (*Apis mellifera*) in developed areas in four regions of the United States. XXV International Congress of Entomology, Orlando, FL. Oct
182. **Huang, Z.Y.** 2016 “What do bees see,” Entomological Society of China Annual Conference, Kunming, Yunnan, China. Oct
183. S. Luo, M. Yue, X. Xie, **Z.Y. Huang**. 2016. Sensitivity to insecticides depend on honey bee behavioral status, American Bee Research Conference, Ponte Vedra Beach, FL. Jan
184. Huang, Z.Y., S. Luo. 2016. Transportation sensitizes honey bees to insecticides. Beacon 2016 Congress, MSU
185. **Huang, Z.Y.**, S. Luo. 2016. Transportation and simulated transportation increase honey bee sensitivity to insecticides, American Bee Research Conference, Ponte Vedra Beach, FL. Jan. (with S. Luo)
186. Rangel, J., P. Lau, J. Sullivan, A. Cabrera, **Z.Y. Huang**, J.D. Ellis. 2016. Pesticides found in pollen and nectar collected by honey bees in urban environments, American Bee Research Conference, Ponte Vedra Beach, FL. Jan
187. Xie, X., **Z.Y. Huang**. 2016. Relocation reduces honey bee colony weight gain, American Bee Research Conference, Ponte Vedra Beach, FL. Jan
188. Wang, Q., **Z.Y. Huang**. 2016. Toxicity of insecticides to honey bees is temperature dependent, American Bee Research Conference, Ponte Vedra Beach, FL
189. **Huang, Z.Y.** 2015. Effect of simulated transportation on caged honey bees, American Bee Research Conference, Tucson, AZ
190. **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
191. **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
192. **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 (with W. Yang, X. Miao)
193. **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
194. **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
195. **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
196. **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
197. **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

198. **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
199. **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
200. **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
201. **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
202. **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
203. **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
204. **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
205. **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
206. **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
207. **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
208. **Huang, Z.Y.**, X. Xie. 2010. Preference of phoretic mites for nurses increases *Varroa* fitness, American Bee Research Conference, Orlando, FL, Jan
209. **Huang, Z.Y.**, K. Ahn, J. Riddle, J. Pettis. 2010. Effect of transportation on honey bee physiology, American Bee Research Conference, Orlando, FL, Jan
210. **Huang, Z.Y.**, K. Ahn, J. Riddle, J. Pettis. 2009. Transportation physiology of honey bees, Entomological Society of America meeting, Indianapolis, IN, Dec
211. **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
212. Leniaud, L. **Huang, Z.Y.**, E. Darronset, A.G. Bagneres. 2007. Caste differentiation and ontogenetic potentialities in the subterranean termite genus *Reticulitermes*, XV^{ème} Colloque, Physiologie de L'Insectes
213. **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
214. **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

215. **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
216. **Huang, Z.Y.** 2006. Effect of Mitezapper on *Varroa* mite populations: a field test, American Bee Research Conference, Phoenix, AZ, Dec
217. **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
218. **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
219. **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
220. **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
221. **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
222. **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
223. **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
224. **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
225. **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
226. **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
227. **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
228. **Huang, Z.Y.**, Y. Qin, Z. Zeng. 2005. Hemolymph juvenile hormone titers in worker honey bees (*Apis mellifera*) under normal and pre-swarving conditions, American Bee Research Conference, Reno, NV, Jan
229. **Huang, Z.Y.**, Y. Qin. 2004. Hemolymph juvenile hormone titers and sodium / potassium ratios in worker honey bees (*Apis mellifera*) under normal and pre-swarving conditions, Annual Meeting of Entomological Society of America, Salt Lake City, UT, Nov
230. **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
231. **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

232. **Huang, Z.Y.**, S.S. Schneider, L.A. Lewis. 2004. The vibration signal and juvenile hormone titers in worker honey bees, *Apis mellifera*, IUSI-NAS Annual Mtg, Camp Tontozona, AZ, Oct
233. **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
234. **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
235. **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
236. **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
237. **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
238. **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
239. **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
240. **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
241. **Huang, Z.Y.**, J. Michalek. 2002. Why do young worker honey bees prefer warm temperatures? Annual Meeting Entomological Society of America, Ft. Lauderdale, FL, Nov
242. **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
243. **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
244. **Huang, Z.Y.**, R. Lin, C. Dusset. 2001. Short-term changes in juvenile hormone titers in worker honey bees, Annual Meeting Entomological Society of America, San Diego, CA, Dec
245. **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
246. **Huang, Z.Y.** 2001. Larger cell size reduces *Varroa* mite reproduction, American Bee Research Conference, Port Deposit, MA, Sept
247. **Huang, Z.Y.** 2001. The Spartan Mitezapper: a novel method for mite control, American Bee Research Conference, Port Deposit, MA, Sept
248. **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
249. **Huang, Z.Y.**, R. Lin. 2000. Does *Nosema apis* affect age of first foraging in honey bees via juvenile hormone? Annual Meeting Entomological Society of America, Montreal, CA, Dec
250. **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
251. **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

252. **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
253. **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
254. American Bee Research Conference, Eastern Apicultural Society, Salisbury, MD, Aug 2000
255. 2nd International Conference of Africanized Bees and Bee Mites, Tucson, AZ, Apr, 2000 (with R. Wang, K. Dong, P.J. Elzen & J. Pettis)
256. Annual Meeting of Entomological Society of America, Atlanta, GA, Dec 1999 (with R. Wang & K. Dong)
257. Annual Meeting of Entomological Society of America, Atlanta, GA, Dec 1999 (with R. Lin)
258. Annual Meeting of Entomological Society of America, Las Vegas, NE, Dec 1998
259. American Bee Research Conference, Colorado Springs, CO, Jan 1998
260. International Union for the Study of Social Insects/North American Section Meeting, Nederland, CO. Sep 1997 (with D. Schulz & G.E. Robinson)
261. Annual Meeting of Entomological Society of America, Louisville, KY, Dec 1996 (with D.W. Borst, S.E. Fahrback & G.E. Robinson)
262. The 19th Annual Meeting of Midwest Neurobiologists, Madison, WI, June 1996
263. The 19th Annual Meeting of Midwest Neurobiologists, Madison, WI, June 1996 (with O.W. Jassim & G.E. Robinson)
264. Annual Meeting of Entomological Society of America, Las Vegas, NE, Dec 1995 (with G.E. Robinson)
265. Annual Meeting of Entomological Society of America, Las Vegas, NE, Dec 1995 (with D. Schulz & G.E. Robinson)
266. The 6th Annual Argonne Symposium for Undergraduates in Science, Engineering and Mathematics, Argonne, IL, Nov 1995 (with O. Jassim & G.E. Robinson)
267. The 6th International Conference on Juvenile Hormones, Woods Hole, MA, Sept 1995 (with G.E. Robinson)
268. Annual Meeting of Entomological Society of America, Indianapolis, IN, Dec 1993 (with G.E. Robinson)
269. Annual Meeting of Entomological Society of America, Indianapolis, IN, Dec 1993 (with G.E. Robinson)
270. Annual Meeting of Entomological Society of America, Indianapolis, IN, Dec 1993 (with T. Giray & G.E. Robinson)
271. Annual Meeting of Entomological Society of America, Baltimore, MD, Dec 1992 (with G.E. Robinson)
272. The 3rd International Congress of Neuroethology, McGill University, Montreal, Canada, Aug 1992 (with M.E. O'Neal & G.E. Robinson)
273. The 15th Annual Meeting of Midwest Neurobiologists, Columbia, MO, Mar 1992 (with G.E. Robinson)
274. Annual Meeting of Entomological Society of America, Reno, NV, Dec 1991 (with G.E. Robinson)
275. The 2nd Annual Argonne Symposium for Undergraduates in Science, Engineering and Mathematics, Argonne, IL, Nov 1991 (with M.E. O'Neal & G.E. Robinson)
276. Annual Meeting of Entomological Society of America, New Orleans, LA, Dec 1990 (with G.E. Robinson)
277. Annual Meeting of Entomological Society of America, New Orleans, LA, Dec 1990 (with C.O. Knowles)
278. Agricultural Experiment Station Workshop, Columbia, MO, Nov 1989 (with C.O. Knowles)

279. First Conference of the Chinese Association of Agricultural Students and Scholars, Ithaca, NY, June 1989
280. Annual Meeting of Entomological Society of America, Boston, MA, Dec 1987 (with G.W. Otis)
281. The 10th International Congress of IUSSI, Munich, West Germany, Aug 18-22, 1986 (with G.W. Otis)
282. Annual Meeting of Entomological Society of Canada, Ottawa, Ontario, Sept 1985
283. Annual Meeting of Entomological Society of America, Hollywood, FL, Dec 1985
284. Annual Meeting of Entomological Society of America, San Antonio, TX, Dec 1984 (with G.W. Otis)

Extension (25%: 2014-now, 50%: 1999-2013)

Extension publications

Web sites

Web URL	Visits in 2023	Contents
bees.msu.edu	23,668	Bee biology, bee plants, bee poems
cyberbee.net	33,024	Extension photos
beetography.com	30,240	Bee photos

Extension Bulletin

Huang, Z.Y., 2018. Feeding honey bees. MSU Extension bulletin, E. 3369

Articles in Popular Press

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

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. 2009. Colony collapse crisis. Good Fruit Grower 60(6)

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

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.

Wechat official account "Beelover" blog posts (in Chinese) (# of reads)

2023

Large scale honey extraction system (471)

2022

Effects of stress on honey bees (209)

Honey bee anatomy (840)

Bee my Valentine, reading by Beelover (327)

Happy Valentine (635)

Mechanisms of honey bee swarming (1206)

Bees mean no harm (poem to bees in Chinese) (422)

Honey bee behaviors (653)

Happy New bees (poem to bees in Chinese) (244)

Blog/posting at <https://bees.msu.edu>

2024

Memory in wine (100)

Memory in honey (191)

Winter flower 9 : Camellia (248)

Winter flower 8 : Fatsia (246)

2023

Winter flower 7 : Tea oil flower (1105 views, posted to Feb 2024)

Winter flower 6 : Tea (278)

Winter flower 5 : ivy tree (601)

Asian wasps (1938)

Godmother the queen bee (304)

Courage of a bee (241)

Six MSU entomologists listed as top 2% (1549)

Memories of my friend, Prof. G. Ayers (273)

Winter flowers : Jade tree flowers (368)

2022

Research update (youtube presentation) (119)

Honey bee nutrition (youtube presentation) (231)

Bee my Valentine (a poem to bees) (292)

Happy New Year, my bees (a poem to bees) (254)

2021

Merry Christmas, my bees (a poem to bees)

Zach's bee poem published in a book

Varroa mite reproductive biology

Honey bee nutrition

Bees and social insects

Effects of Nosema on honey bee behavior and physiology

Presentations by Huang
Honey bee anatomy
Extension impact
Presentations by Huang

2020

Bee a genius
Fall flower 2 : Goldenrod
Fall flower 1 : Chinese sumac
Summer flower 12 : Alfalfa
Summer flower 11 : Red clover
Bee plant videos
Summer flower 10 : star thistle
Summer flower 9 : Canda thistle
Summer flower 8 : Sweet clovers
Summer flower 7 : White clover
A queen was dead, but then resurrected
Summer flower 6 : Crown vetch
Summer flower 5 : Bird's foot trefoil
Summer flower 4 : Staghorn sumac
Summer flower 3 : Basswood
Beebehavior 1 : colony wide Nasonov-pheromone releasing
Summer flower 2 : Everlasting peas
Summer flower 1 : Cattails
Spring flower 30 : Poison ivy
Spring flower 27 : Desert false indigo
Spring flower 26 : Smoke bush
Spring flower 25 : Autumn olive
Spring flower 24 : Peonies
Spring flower 23 : Lilac
Spring flower 22 : Redbud
Spring flower 21 : Tulip
Spring flower 20 : Honeysuckle
Spring flower 19 : Peach
Spring is here !

2019

Bee-Love (poem)
Winter flower 4: Eurya spp
Winter flower 3: Chinese plum flowers (Prunus mume)
Spring flower 18: Almond flowers
Spring flower 17: Nanking cherry flowers
Spring flower 16: Flowering cherry flowers
Spring flower 15: Cherry flowers
Spring flower 14: Plum flowers
Spring flower 13: Apricot flowers
Spring flower 12: Pussy willow
Spring flower 11: Magnolia flowers

Spring flower 10: Maple tree flowers
Spring flower 9: Hyacinth flowers
Spring flower 8: Canola flowers
Spring flower 7: Grape hyacinth flowers
Spring flower 6: Skunk cabbage flowers
Spring flower 5: Anemone flowers
Spring flower 4: Christmas rose flowers
Spring flower 3: Scilla flowers
Spring flower 2: Crocus flowers
Spring flower 1: Winter aconite flowers
Winter flower 2: Wintersweet, Chimonanthus
Winter flower 1: Loquat flowers

2018

Michigan honey plants : Staghorn sumac
Michigan Honey Plants: Crown Vetch
Michigan honey plants: basswood
Bird's foot trefoil
Catalpa : nectar flow from flowers and leaves
White clover
Feeding bees

2017

Shootout at the Matthaei Botanical Gardens
Value of honey bees in Michigan from pollination service and honey production
Adjusting control mortality in LC50/LD50 determination using R

2016

Honey bees foraging on extrafloral nectaries of *Catalpa speciosa*, Bignoniaceae
False queen laying eggs
Pomegranate flowers with bees
Bee vampire picks the right host to suck
2015 in Bees and Flowers

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/>
Beebee 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 390 presentations reaching 36,221 person-hours)

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

(A total of 220 Extension talks in Michigan, reaching 20,499 person-hours)

2024

Honey bee anatomy and dissection, Pre-Vet students, MSU (13)
Honey bee anatomy, Seven Ponds Beekeepers association (75)
MSU Science Fest Pollinator Performance Center Open House (200)
Hive inspections and record keeping, Holland Beekeepers Association (65, 2x)
Honey bee behaviors, Michigan Beekeepers Association (115)
Colony inspections and record keeping, Holland Area Bee Association, Feb (2x, 80)

2023

Honey bee behaviors, Central Michigan Bee (Comb) Club, Oct (50)
Bee beauty, importance, and study, Saginaw Chippewa Academy, Mount Pleasant MI Sept. (85)
Honey bee anatomy workshop, MSU veterinary students (1.5 hour, 8)
Queen rearing class, 3 zoom talks (queen biology, drone biology, queen rearing time table, in person teaching. June 17 (18*4, in person)
Honey bee nutrition, Mid-Michigan Beekeepers Association, E. Lansing (50)
Bee biology and swarm management, Holland Beekeepers Association (50)
Hive inspections and record keeping, Holland Beekeepers Association (65, 2x)
MSU Beekeeping Office Hours, Monthly webinar (zoom, 45*5)
Michigan Bee Club Leader Meetings (in person + 3 zoom meetings, 45*4)

2022

MSU Chinese school, honey bee stresses (32 in person, 23 via zoom)
MSU College of Veterinary Medicine Bee Medicine Club (5, zoom)
Michigan Beekeepers Association Fall Conference, Muskegon, Oct (32, in person)
Honey Bee Veterinary Consortium, honey bee anatomy, Aug 27 (25, in person)
MSU Vet students, bee anatomy class, July (8, in person)
Queen rearing class, 3 zoom talks (queen biology, drone biology, queen rearing time table, in person teaching. June 18 (17*4, in person)
SEMBA meeting, walking tour to know bee plants, May 22 (15, in person)

2021

March: MBA spring conference via zoom, MSU Research Update (300, zoom)
MBA spring conference, honey bee nutrition (60, zoom)
April: Pollinator Initiative Webinar, Michigan Honey Plants (80, zoom)
July: MI Commercial Beekeepers Association meeting, (50, in person)
Aug. MSU Veterinary Training class, bee anatomy (6, in person)
MBA fall conference: Research update at Huang lab 2019-2020 (45, zoom)

2020

MBA fall conference (via Zoom):
Honey bee swimming behavior
Stresses on honey bees

MBA Spring conference (in person):
Varroa mite biology
Queen and drone biology
Michigan honey plants
Honey bee dissection (2 hrs)
MSU honey bee research update

2019

MBA talk: Varroa mite biology (2X), (60)
Queen and drone biology (2X), (35)
Honey bee dissection (2 hrs), (42)
SEMBA intermediate class:
Queen and mating biology, (40)
Drone biology, (40)
Making a split colony, (40)
Meridian garden club: beetography, (20)
Ann Arbor Home Gardeners: Honey bee basics (20)
Starting up beekeeping (10)
Honey bee disease and pests (10)
Comb Queen rearing workshop: queen biology (15)
Queen rearing group: drone and mating biology (15)
Meridian garden club: field trip for shooting bees (6)

2018

MSU Training for Veterinarians: honey bee anatomy (14)
honey bee nutrition and feeding bees (14)
SEMBA bee school, June 3rd, mite zapper (45)
Honey bee nutrition (45)
Honey Bee disease (45)
Central Michigan Bee Club Queen Rearing Class
Queen biology (20)
Drone biology and mating behaviors (20)
Bee paloosa, June 24 (400)
Michigan Beekeepers Association Spring Conference
MI honey plants (70)
Feeding bees (80)
Michigan Beekeepers Association Fall Conference, MSU Huang lab research update
Central Michigan Bee Club, hone bee pheromones (60)

2017

Kalamazoo Bee School, Feb 18, Michigan Bee Plants, (50)
Moving bees – Impact of Transportation & Relocation (30)
Michigan Beekeepers Association Spring Meeting, March 12/13
Michigan bee plants (60),
Effects of transportation and relocation on honey bees (40),
Effect of nosema on honey bees (30),
Honey bee anatomy (hands on workshop, 2 hrs x 20)
Advanced beekeeping course, SEMBA bee club, Novi Tollgate, Apr 2
Benefits of raising queens, banking queens, and two-queen systems (45),

Benefits of nucs and different kinds of nucs (45)
“Foundation options and installation”, Beginners Beekeeping course, SEMBA, April 2
“How do transportation and relocation affect your bees”, Saginaw Valley Beekeepers Association, May 5 (60)
SEMBA Bee School, beginner’s, May 7
 I.P.M. Type of varroa treatment – brood interruption options (45),
 Discussion and demo sugar roll (45).
SEMBA Bee School, Advanced Class, May 7
 Quick queen introduction (42),
 Conditions required for successful queen rearing (42).
“Michigan honey bee plants,” Ann Arbor Backyard Beekeepers, June 11 (50)
Bee Palooza, MSU campus, June 18 (300)
“What do bees see?” Seven ponds bee club, June 27 (60)
“How to photography honey bees in the field,” Shutterbug Group at Ann Arbor, Aug 8 (25)
“Honey bee photography basics,” Ann Arbor Backyard Beekeepers.

2016

Photographing honey bees, an introduction, Center of Michigan Bee Group Nov. 14 (50)
Varroa: biology, monitoring and control, Mid Michigan Beekeepers Club, Nov 3 (70)
Varroa: biology, monitoring and control, Monroe Country beekeepers, Oct 24 (25)
Varroa: biology, monitoring and control, SEMBA, Oct 23 (20)
MSU research update: Eco-physiology of moving honey bees, MBA fall meeting, Flint, MI (35)
Nosema: biology and control, MBA fall meeting, Flint, MI (10)
Varroa: biology, monitoring and control, MBA fall meeting, Flint, MI (40)
Relocation of bee colonies: loss of productivity,” Mid Michigan Beekeepers Club (70)
Laying workers in colonies, symptoms, prevention and control,” Mid Michigan Beekeepers Club (70)
The ability to identify hive problems, evaluate and apply corrective measures.” Southeast Michigan Beekeepers Summer Picnic (50)
Working with beekeepers for your blueberry pollination, Blueberry Growers Meeting, MI (20)
Bee palooza, MSU campus June (600)
Honey bee anatomy workshop (2 hrs) MSU ANR beekeeping Week. March (36 x 2 times)

2015

Bees are important in MI agriculture, Lansing Farmers’ Club. Okemos, MI Dec (75)
Michigan bee plant, MBA fall meeting, Traverse City, MI Oct (50)
Life of a worker bee, MBA fall meeting, Oct (35)
Honey bee behaviors, MBA fall meeting, Oct (35)
Honey bee dissection, Heartland Apicultural Society Annual Conference, Albion, MI July (43x2)
Effect of *Nosema* on honey bees, Heartland Apicultural Society Annual Conference, Albion, MI July (13)
Honey bee behaviors, Heartland Apicultural Society Annual Conference, Albion, MI July (20)
Bee Palooza, MSU campus June (500)
Beekeeping 101, Holt Library, MI, June (12)
Beekeeping 101, Mason Library, MI, June (18)

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

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

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

2014

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

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

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

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

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

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

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

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

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

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

2013

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

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

“Introduction to digital photography of bees,” Center of Michigan Beekeepers, East Lansing, MI. June, (60)

“Show and tell on honey bees,” Bee Palooza, MSU Campus, June 23, (120)

“Blueberry pollination,” Blueberry Prebloom IPM meeting, Paw Paw MI, May, (50)

“Introduction to digital beetography,” Southeastern Beekeepers Association, Novi, MI, March

“Honey bee anatomy and dissection,” Hands-on Workshop, MSU ANR Week, E. Lansing, MI March (2 times, 48)

2012

“Honey bee pheromones, “Michigan State University ANR Week Honey Bee Program, E. Lansing, MI, March (two times, 160)

“Mating biology of honey bees,” Michigan State University ANR Week Honey Bee Program, E. Lansing, MI, March (two times, 160)

“Effect of *Nosema spp* on honey bees,” Michigan State University ANR Week Honey Bee Program, E. Lansing, MI, March (80)

2011

“Update on *Nosema ceranae* research,” Michigan Beekeepers’ Association Fall Meeting, E. Lansing, MI Dec (50)

“Catching a swarm of honey bees,” Michigan Beekeepers’ Association Fall Meeting, E. Lansing, MI Dec (70)

- “Honey bees and beekeeping, show and tell,” Barry County Extension 4-H Youth Program. Hastings, MI, May (265 3rd grade students)
- “*Varroa* reproductive biology,” Southeastern Michigan Beekeepers’ Association Spring Meeting, March (50)
- “Pesticide synergism affect honey bee homing ability,” Southeast Michigan Beekeepers’ Association Spring Meeting, March (50)
- “Beekeeping in Turkey,” Michigan State University ANR Week Honey Bee Program, E. Lansing, MI, March (60)
- “Honey bee disease,” Michigan State University ANR Week Honey Bee Program, E. Lansing, MI, March (60) (two times, 60 x 2)

2010

- “*Varroa* mite Reproductive Biology,” Southeast Michigan Beekeepers Association Fall Meeting, Novi, MI, Nov (70)
- “Beekeeping in Turkey,” Saginaw Valley Beekeepers Association, St. John, MI, Nov. (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 (50)
- “Colony Collapse Disorder, an update,” Michigan Beekeepers’ Association Fall Meeting, Grand Rapids, MI Oct (50)
- “Honey bees and beekeeping, show and tell,” Barry County Extension 4-H Youth Program. Hastings, MI, May (350 3rd grade students)
- “Effect of transportation on honey bee physiology,” Southeast Michigan Beekeepers Association, Novi, MI, March (240)
- “Beetography: how to take macro photographs of honey bees,” MSU ANR week Beekeeping Program, East Lansing, MI, March (60)
- “*Nosema* diseases: a tale of two species,” MSU ANR week Beekeeping Program, East Lansing, MI, March (120)
- “Honey bee diseases and pests,” Shiawassee Conservation District, MI, Feb (55)
- “Honey bee biology, behavior and bee products,” Shiawassee Conservation District, MI, Feb (55)

2009

- “Honey bees: their importance to agriculture,” Bioblitz at the Kalamazoo Nature Center, Sept, (10)

2008

- “Honey bees and beekeeping, show and tell,” Barry County Extension 4-H Youth Program. Hastings, MI, May (375 3rd grade students)
- “Honey bee diseases, pests and the CCD crisis,” Ingham County Extension Center, April 9 (15)
- “Using honey bees for blueberry pollination,” special topics on blueberry production, Fennville, MI March 27, (50)
- “GM Plants and honey bees: do they cause CCD?” Southeast Michigan Beekeepers Association, Novi, MI, March 15 (150)
- “Honey bee biology,” Agricultural and Natural Resources Week Beekeeping Program, Michigan State University, March 7-8 (three times, 90)
- “Threats to honey bees and CCD update,” Bee Class by Ingham County Extension Office, MSU Pavilion, Jan 15 (25)
- “Importance of honey bees for Michigan fruit industry and their current status,” NW Michigan Orchard & Vineyard Show, Traverse City, MI, Jan (100)

2007

- “Working with your beekeeper for optimal pollination of fruits and vegetables,” Great Lakes Fruit, Vegetable & Farm Market Expo, Grand Rapids, MI, Dec (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, (100)
- “Honey bees are important to Michigan agriculture,” Capital area Audubon Program, Lansing, MI. Nov (50)
- “Honey bees: importance to Michigan agriculture and threats they face,” Pfizer, Portland, MI. June (70)
- “Fruit pollination using honey bees and other insects,” MSU Horticultural Days, Benton Harbor, MI, Feb (66)
- “Field-testing the Mitezapper,” Southeast Michigan Beekeepers Association Spring Conference, MI, Feb (80)
- “*Varroa* mites: biology and its control,” Ingham County MSU Extension Bee Program, E. Lansing, MI, Feb (24)
- “Honey bees: biology and beauty,” Senior Group, First Baptist Church, Okemos, MI. Feb (30)
- “Honey bee diseases and pests,” Ingham County MSU Extension Bee Program, E. Lansing, MI, Feb (24)

2006 and earlier

- “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 at National/Regional meetings or Other States
(A total of 105 talks, reaching 9,241 person-hours)

- “RNAi against varroa mites”, Black Swamp Beekeepers Association (OH) (50, zoom)
- “Honey bee behaviors inside and out”, Santa Clara Valley Bee-guild. Feb 2024 (50, zoom)
- “Beekeeping Around the World: China”, Mar 2023. <https://extension.psu.edu/beekeeping-around-world-china> (589+303, zoom)
- “How do honey bees see flowers differently”, Ohio State Beekeepers Association, Oct 2021 (125, zoom)
- “Honey bee behavior,” Honey Convention, Knoxville, TN, Mar 2019 (60)
- “Honey bee pheromones,” Honey Convention, Knoxville, TN, Mar 2019 (35)
- “Mite reproductive biology” (x2), Heartland Apic Soc, Bowling Green, KY, Jul 2019 (60)
- “How transportation affects honey bees” (x2) , Heartland Apic Soc, Bowling Green, KY, Jul 2019 (50)
- Heartland Apicultural Society Annual Meeting, July, 2018, St Louis, MO
 - “Beetography, field tour” (6)
 - “beetography, image processing” (6)
 - “Honey bee nutrition and feeding bees” (80)
- University of Illinois Honey Bee Short Course, May, 2018
 - Beetography demo (50)
- Heartland Apicultural Society Annual Meeting, July 2017, Evansville, IN,
 - “Honey bee behavior” (25),
 - “Honey bee behavior at the apiary” (9),
 - “Field trip for beetography” (5),
 - “What do bees see” (20).
- “Varroa mite reproduction and RNAi for its control” Penn State Beekeepers Association, Oct 2016, College Park, PA (80)
- “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 2016 Keynote, Flagler Beach, FL (300)
- “Honey bee pheromones and relevance to beekeeping,” Florida Bee School 2016, Flagler Beach, FL (60)
- “Regulation of Varroa mite reproduction,” Florida Bee School 2016, 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, Jun 2012 (35)
- “Beebehavior”, 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, Jul 2009 (20)
- “Honey bee photography,” Southern Adirondack Beekeepers Association, Albany NY, Mar 2008 (130)
- “Are genetically modified plants causing CCD?” 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)
- “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 65 international talks, reaching 6,508 person-hours)

- Large scale beekeeping in the US. South China High Efficiency Beekeeping Training Class, Guangdong China, Nov. 2023 (22)
- Honey bee swimming is adaptive and affected by pesticides, Santiago, Chile, Apimondia Conference, Sept 2023 (120)
- Biology and behavior of *Apis cerana*, Beekeeping Group Shaoshan, Hunan, China (30)
- “Why do bees swarm” Feb 2022 (45 min video conference on wechat, 1205 attendees)
- Honey bee anatomy (52 min video presentation on wechat, 839 attendees)
- Beauty of bees, Online lecture to “Wushi” school (children of labor workers in Beijing), May 2020 (25)
- Large scale beekeeping in US, Online lecture to beekeepers in China, Feb 2020 (500)
- Transportation sensitizes honey bees to pesticides, Montreal, Canada Sept 2019 (120)
- Queen biology, Bangladesh Queen Rearing Delegation, Hangzhou, China Sept 2019 (5)
- Drone biology, Bangladesh Queen Rearing Delegation, Hangzhou, China Sept 2019 (5)
- Royal jelly production: theory, Bangladesh Queen Rearing Delegation, Hangzhou, China Sept 2019 (5)

- Royal jelly production: hands on workshop. Bangladesh Queen Rearing Delegation, Zhejiang, China Sept 2019 (5)
- Drone biology, Workshop for African and Urzbekistan beekeepers, Hunan, China, Sept 2019 (30)
- Queen biology, Workshop for African and Urzbekistan beekeepers, Hunan, China, Sept 2019 (30)
- Queen rearing, Workshop for African and Urzbekistan beekeepers, Hunan, China, Sep 2019 (30)
- Beaty of honey bees, Beijing Museum of Natural History, June 2019 (100)
- 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, 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 (5 talks x 103 =515)
- “Recommendations for beekeeping in Bangladesh,
 - Honey processing,
 - Disease and pest management,
 - Honey bee division of labor, and
 - Honey bee products.” Bangladesh, Sept, 2012.
- Four Talks presented to Haitian beekeepers (4 talks x 50=200)
- “Field trip to harvest mites,
 - How to measure LD50 of fluvalinate,
 - Mite biology,
 - Small hive beetle biology,
 - Port au Prince, Cap Haitian, Haiti, Nov 2011
- “*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)
- Rapti Beekeepers Association, Dang, Nepal, Mar 2007 (8 lectures x 16 people =128)
- “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,”
- “Effect of mitezapper on *Varroa* mite population, a field test,” Apimondia Conference, Melbourne, Australia, Sept 2007 (300)
- “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 62th 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
00, 01	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	1 day workshop for undergraduates, 50	David Borst Illinois State University
1993	Behavioral Physiology and Ecology of Honey Bees	2 wk workshop beekeepers and scientists, 20 in China	Z.Y. Huang, China Agricultural University

Media Appearance and Interviews

Cracked.com phone interview regarding the movie "Beekeeper", <http://tinyurl.com/yt6t7ufx> 2024
Finding Genius Podcast, 2020

Tractor Supply Co./Out Here Magazine, 2020

Interview by MSU News, Michigan radio, 2017

Interview by MSU News, Michigan radio, 2016

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 bee photography, July 2005,
<http://www.msutoday.msu.edu/research/index.php3?article=15Jul2005-8>
 MSUE news regarding bee photography, 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

American Bee Journal, photo of varroa and *Tropilaelaps*, Sept. 2023
American Bee Journal, photos of 2 *Camellia* flowers, May, 2023
 Bee Photo as cover, Apidologie, all 2022 issues
 Bee photos (5), “Honey bee medicine”, Wiley & Sons, 2020
 Bee photo, The lives of bees: the untold story of the honey bee in the wild, T. Seeley, 2019
 Bee photo (cover), Apidologie, all 2015-2021 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 (covers), American Bee Journal, Mar 2013, Bee Culture, Mar 2013
 Bee photo (book cover), Honey Bee Biology and Beekeeping, D.M. Caron, L.C. Connor, 2013
 Bee photo, two bees feeding each other, 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 (5 photos), 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), J. 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% before 2018, 0% after 2018)

Full courses

Year/Semester	Class	# Students	Co-Teachers
Graduate			
2017S	Insect macrophotography	3	
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(s)
2018	Insect molecular biology, MSU	15	H. Chu, K. Dong
2015	Behavioral Ecology, MSU	15	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, degree	Name	Thesis	Current employment
2013-2016 M.Sc	Subas Porkhel	Division of labor in <i>A. mellifera</i> and <i>A. cerana</i> mixed colonies, degree by Fujian Ag & Forestry Univ.	Nepal
2006-2008 M.Sc	Yu-Lun Fu	Exploring new methods for <i>Varroa</i> mite control	Chemical company, Taiwan
2001-2004 Ph.D.	Ting Zhou	<i>Varroa</i> mite reproductive biology (co-advised with W. Zhang), Degree by China Agric University	Institute of Apicultural Research, China
2000-2002 M.Sc	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
2021-2024	Lauren Goldstein		
2020-2023	Alexander Farnum	Neural coding of insect olfaction	Defended Dec 2022.
2017-2020	Darren Incorvaia	Bumble bee foraging behavior	Discover Magazine
2013-2017	Knute Gundersen	Bumble bee disease and pollination planting	
2014-2015	Victor Medev	Ubx and its effect on insects	Postdoc in Canada
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	MSU
2002-2007	D. Oskay	Honey bee flight muscle development (Univ. Puerto Rico)	Associate Professor, Namik Kemal University, Turkey

Postdoctoral fellows

Year	Name	Research topic	Current employment
2012-2013	Meghan Milbrath	Nosema biology	Michigan State University

2011-2012	Wenchao Yang	Analysis of amino acid in pollen	Fujian Agriculture and Forestry University, China
2011-2012	Xianbing Xie	<i>Varroa</i> mite RNAi	Nanchang Uni, 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. Puchiheva	Efficacy of various pesticides for <i>Varroa</i> control	Lecturer University of Ruhuna, Sri Lanka
2006-2009	Kiheung Ahn	CCD related honey bee research	Konkuk University, Korea
2007	G. Suwannapong	<i>Nosema</i> effect on honey bees	Burapha Univ., Thailand
2006	Liangxian Sun	Honey bee larval in vitro rearing	Quanzhou University, China
2003-2004	Yuchuan Qin	<i>Varroa</i> mite thermal tolerance	China AgrUniversity
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> mites	Research scientist, University of Alberta
1999-2002	Huarong Lin	<i>Nosema apis</i> effect on honey bees	Commercial beekeeper, Canada

Visiting Scientists hosted

Year	Name	Research	Current employment
2022	WeiFong Huang	RNA-seq of nosema, and in bees due to nosema or varroa	USDA lab
2020	Zhengang Ma	Nosema pathology	Chongqing Normal University, China
2019-2020	Jin Zhang	Honey bee nutrition	Jiangsu Animal Husbandry Vocational College, China
2019-2020	Ling Yin	Honey bee development	Jiangsu Animal Husbandry Vocational College, China
2019-2020	Shoaib Saleem	Pesticide effect on bees	U. Karachi, Pakistan
2018-2019	Yuan Zhang	Nosema effect on bees	Southwest University, China
2018-2019	Fang Liu	Nosema effect on bees	Guangdong Institute of Insects, China
2017-2018	Zhiyong Liu	Pesticide and <i>Nosema</i> interactions	Jiangxi Univ of Traditional Chinese Medicine, China
2018-2019	Xinjian Xu	<i>Varroa</i> chemical control	Fujian Agric & Forestry University, China
2018	Shouming Li	Mechanisms of allergies	Children's Hospital, Nanchang, China

2017-2018	Honghong Li	Honey bee critical size	Guanxi University, China
2016-2017	Wenchao Yang	Honey bee longevity	Lecturer, Fujian Agr and Forestry University, China
2015-2017	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
2015-2016	Zilong Wang	Learning and DNA methylation in honey bees	Associate Prof., Jiangxi Agr University, China
2016	Haiping Li	Pesticide toxicology	Inner Mongolia Agr University, China
2015-2016	Qing Wang	Pesticide toxicity	Lecturer, Quanzhou Normal Univ., China
2015-2016	Xianbing Xie	Effect of transportation on honey bee colonies	Associate Prof, Nanchang University, China
2015-2016	Shudong Luo	Effect of temperature and social conditions on pesticide toxicity	Institute of Apicultural Research, Beijing, China
2011-2012	Xiangjie Zhu	<i>Nosema ceranae</i> effect on honey bees	Fujian Agr & Forestry University, China
2011-2012	Wenchao Yang	Analysis of amino acid in pollen	Fujian Agr. & Forestry Univ., China
2014-2015	Muhammad Imran	Lab rearing of bumble larvae	Arid Agriculture Univ. Rawalpindi Pakistan
2011-2012	Shujing Zhou	<i>Nosema ceranae</i> effect on bees	Fujian Agriculture and Forestry University
2009, 2010	Toan Van Tran	<i>Nosema ceranae</i> effect on bees	Scientist, Department of Agriculture, Viet Nam
2008	Paitoon 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	Institute of Apicultural Research, China
2003	Zhijiang Zeng	Juvenile hormone in swarming colonies	Jiangxi Agric University, China

Undergraduate Student Assistants

Year	Name	Research
2023	Jennie Soule	Mite control method
2021, 2022	Trevor Dalrymple	Gene expression in bees
2017	Mauricio R. Swartzendruber	Nosema transmission route
2017-2018	Makayla Scott	General bee research
2014	Logan Mussell, Nick Zielinski	General bee research
2008-2012	Joe Riddle	General bee research

High School Students

Year	Name	Research	Awards
2022	Anna Yang	Bee sound change due to queen loss	
2022	ZJ Xu	Winter bee longevity with different food	
<i>Okemos High School Science Program</i>			
2014/15	Thomas Rachman	Chemical communication in bees	Paper to be published
<i>MSU HSHSP (High school honors science program)</i>			
2013	Waldemar III Ortiz	Thermal preference of honey bees	
2012	Emily Crouse	<i>Nosema ceranae</i> effect on bees	
2009	Alison Nemeth	Honey bee navigation	Semi-finalist, Siemens Competition
2009	Jill Dolowich	Honey bee navigation	Semi-finalist, Siemens Competition
2009	Neil Kondamuri	Honey bee navigation	Semi-finalist, Siemens Competition
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	Semi-finalist, Siemens Competition
2004	Jennifer Zhao	<i>Varroa</i> mite feeding monitoring	Published one paper
2003	Grace Lee	Juvenile hormone in CO2 treated bees	Semi-finalist, Siemens Competition
2003	Laura Araujo	Juvenile hormone in CO2 treated bees	Semi-finalist, Siemens Competition
2002	Letti Taua	<i>Nosema apis</i> effect on bees	
2001	Priya Krishnamurti	Cyberbee website	
<i>The Minority Apprenticeship Program</i>			
2001	Errol Mathews	Bee behaviors	
2001	Sowkya Rangarajan	Bee behaviors	

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

- Apidologie, May 2020 – present
- Insect Science, 2001 – 2022
- Insects, 2019 – 2020 (resigned)
- Apiculture in China, 2019 – 2020 (resigned)
- Scientific Reports, March 2015 – 2020 (resigned)
- Apidologie (International Scientific Board), 2011 - 2020
- BeeScience, 1992 - 1994
- The Chinese Association of Agricultural Students & Scholars Journal, 1992-1993

Reviewer

2023: USDA-NIFA proposal reviewing panel (4 days), BARD proposal reviewer.

Journals: *Apidologie* (6), *Food quality and safety*, *PNAS*, *CRC book proposal review*. *J. Insect Science*, *Insect Science*, *BMC Research notes*.

Previous years

Journals: *American Bee Journal*, *American Naturalist*, *Anais da Academia Brasileira de Ciencias*, *Analytical and Bioanalytical Chemistry*, *Animal Behavior*, *Annals of the Entomological Society of America*, *Apidologie*, *Apidologie*, *Austral Entomology*, *Bee World*, *BeeScience*, *Behavioral Ecology and Sociobiology*, *BMC Ecol EVOL*, *BMC Genetics*, *GMC Genomics*, *Comparative Biochemistry and Physiology*, *Current Zoology (China)*, *Entomologia Sinica*, *Entomological Science (Japan)*, *Environmental Biosafety Research*, *Environmental Entomology*, *Environmental Microbiology and Environmental Microbiology Reports*, *Environmental Microbiology Reports*, *Experimental Gerontology*, *Food Chemistry*, *Frontiers in Ecology and Evolution*, *Insect Molecular Biology*, *Insect Science*, *Insectes Sociaux*, *Insects*, *J. Apicultural Research*, *J. Invertebrate Pathology*, *J. Microbiological Methods*, *J. Visualized Experiments*, *Journal of Animal and Plant Sciences*, *Journal of Apicultural Research*, *Journal of Applied Entomology*, *Journal of Comparative Physiology*, *Journal of Comparative Psychology*, *Journal of Economic Entomology*, *Journal of Environmental Entomology*, *Journal of Experimental Biology*, *J. Insect Physiology*, *Journal of Insect Science*, *Journal of Proteome Research*, *Journal of the Royal Society Interface*, *Journal of Visual Research*, *Naturwissenschaften*, *Pesticide Biochemistry and Physiology*, *Plos Biology*, *PLoS ONE*, **Proceedings of National Academy of Sciences**, *Proceedings of Royal Society B*, *Psyche*, **Science**, *Scientific Reports*, *Turkish Journal of Zoology*, *Veterinary Parasitology*

Grants: *Austria Science Foundation*, *Biological Sciences Research Council (UK)*, *Biotechnology and Biological Sciences Research Council (UK)*, *Israel Natural Science Foundation*, *Kentucky Science and Engineering Foundation*, *National Science Foundation*

(USA), National Natural Science Foundation of China, Polish National Science Centre, USDA-National Research Initiative, USDA-North Central Region SARE Program, USDA National Labs Project Plan Review, US-Israel Agricultural Research & Development Fund (BARD)

Service at Professional Organizations

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://aapa.cyberbee.net>, host, 2010-2023 (American Assoc of Prof. Apiculturists)
<http://cfc.bees.net>, 2010-2016 (Chinese Faculty Club website)
<http://cyberbee.net>, 1997- now (Featured in *Science*, “Best Pick”, June 2000)
<http://iussi.cyberbee.net>, host: 2002-now (Intl Union for the Study of Social Insects, NA)
<http://michiganbees.org>, host, 2004-2022 (Michigan Beekeepers’ Association)
<http://oceac.cyberbee.net>, host, 2017-2020 (Overseas Chinese Entomologist Assoc)
<http://sfi.cyberbee.net>, 2000-2005 (Santa Fe Institute Social Insect Working Group)
<http://www.soscef.org>, 1998-2005 (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, 2009-2023
NCR202, Health and survival of honey bee colonies, 1998-2003
Social Insect Working Group, Santa Fe Institute, 2000-2004
Awards committee, American Association of Professional Apiculturists, 2001

Service at 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

Mentoring committee for Meghan Milbrath, 2020
Entomology Awards Committee, 2001, 2018-2021, 2022-2023
Entomology Seminar Committee, 1999-2000, 2016-2018, 2023-
Entomology Graduate Committee, 2002-2009
Department Chair Advisory Committee, 2005-2007
Computer Committee, 2001
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, 2020, 2023

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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