

## Kun-Hsien Tsai

### Current position

Associate Chair / Associate Professor

1. Department of Public Health, College of Public Health, National Taiwan University
2. Institute of Environmental and Occupational Health Sciences, College of Public Health, National Taiwan University (Associate Professor)
3. Department of Entomology, College of Bioresources and Agriculture, National Taiwan University (Joint Associate Professor)
4. Infectious Diseases Research and Education Center, MOHW-NTU (Joint Research Fellow)



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### Research Interests

Medical Entomology, Vector Control, Rickettsiology, Vector Ecology, Tropical Medicine, Vector-borne and Zoonotic Infectious Diseases

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### Contact

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### Education

- 2004** Ph.D. in Department of Entomology, College of Bioresources and Agriculture, National Taiwan University, Taiwan (R.O.C.)
- 1998** Master in Department of Biology, College of Science, Tunghai University, Taiwan (R.O.C.)
- 1996** Bachelor in Department of Biology, College of Science, Tunghai University, Taiwan (R.O.C.)
- 1996** High School Education Program, College of Science, Tunghai University, Taiwan (R.O.C.)

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### Experience

- 2017.08~present** Associate Chair, Associate Professor Department of Public Health, CPH, NTU
- 2019.08~present** Associate Professor, Institute of Environmental and Occupational Health, CPH, NTU
- 2019.08~present** Joint Associate Professor, Department of Entomology, NTU
- 2016.08~2019.07** Associate Professor, Institute of Environmental Health, CPH, NTU

- 2012.08~2016.07** Assistant Professor, Institute of Environmental Health, CPH, NTU
- 2015.08~2017.07** Associate Chair, Global Health Center, NTU
- 2012.08~2017.07** Adjunct Research Fellow, Global Health Center, NTU
- 2012.08~present** Joint Research Fellow, Infectious Diseases Research and Education Center, MOHW-NTU
- 2014.01~2016.12** Advisor, Centro Nacional de Endemias, Ministerio da Saude, DRSTP, West-Central Africa
- 2013.08~2013.08** Visiting Research Fellow, Centre National de Référence Rickettsia, Coxiella, Bartonella, Marseille, France
- 2011.01~2016.09** Short-term expert advisor, Taiwan Anti-malaria Advisory Mission, DRSTP, West-Central Africa (Summer and winter vacation)
- 2010.08~2012.07** Project-Appointed Assistant Professor, Institute of Epidemiology and Preventive Medicine, NTU (IDREC)
- 2010.01~2010.02** Short-term Visiting Scientist, Institute of Molecular Biology, Academia Sinica
- 2009.02~2010.07** Project-Appointed Assistant Professor, Institute of Epidemiology, NTU (IDREC)
- 2005.10~2005.12** Visiting Research Fellow, Unité des Rickettsies et des pathogènes émergents CHU de Marseille, France
- 2005.01~2009.01** Post-Doctoral Fellow, Research and Diagnostics Center, Centers for Disease Control, DOH

## Events and Activities

### Membership

- Taiwan Entomological Society
- Taiwan Society of Parasitology
- Taiwan Public Health Association
- Taiwan Environmental Pest Management Association
- Entomological Society of American
- American Society of Rickettsiology
- American Society of Tropical Medicine and Hygiene

## A. Peer Reviewed Journals

1. Kalimuthu, K., C. Panneerselvam, C. Chou, S. M. Lin, L. C. Tseng, K. H. Tsai, K. Murugan, and J. S. Hwang\*. 2017. Predatory efficiency of the copepod *Megacyclops formosanus* and toxic effect of the red alga *Gracilaria firma*-synthesized silver nanoparticles against the dengue vector *Aedes aegypti*. *Hydrobiologia*. 785: 359-372. (SCI) (IF=2.385, Q1 (22/107), Marine & Freshwater Biology)(2016.10.05)
2. Kalimuthu, K., C. Panneerselvam, C. Chou, L. C. Tseng, K. Murugan, K. H. Tsai, A. A. Alarfaj, A. Higuchi, A. Canale, J. S. Hwang, G. Benelli. 2017. Control of dengue and Zika virus vector *Aedes aegypti* using the predatory copepod *Megacyclops formosanus*: synergy with *Hedychium coronarium*-synthesized silver nanoparticles and related histological changes in targeted mosquitoes. *Proc. Safety Environ. Protection*. 109: 82-96. (SCI) (IF=4.966, Q1 (23/143), Engineering, Chemical)(2017.03.30)
3. Minahan, N.T., C. C. Chao, and K. H. Tsai\*. 2018. The re-emergence and emergence of vector-borne rickettsioses in Taiwan. *Trop. Med. Infect. Dis.* 2018, 3, 1.(2017.12.21)
4. Ng, K. C., L. F. Chaves, K. H. Tsai, and T. W. Chuang\*. 2018. Increased adult *Aedes aegypti* and *Culex quinquefasciatus* (Diptera: Culicidae) abundance in a dengue transmission hotspot, compared to a coldspot, within Kaohsiung City, Taiwan. *Insects*, 9, 98. (SCI) (IF=2.220, Q1 (18/101), Entomology)(2018.08.13)
5. Yang, S. L., K. H. Tsai, H. F. Chen, J. Y. Luo, and P. Y. Shu\*. 2019. Evaluation of enzyme-linked immunosorbent assay using recombinant 56-kDa type specific antigens derived from multiple *Orientia tsutsugamushi* strains for detection of scrub typhus infection. *Am. J. Trop. Med. Hyg.* 100: 532-539. (SCI) (IF=2.126, Q2 (9/23), Tropical Medicine)(2018.12.10)
6. Hsi, T. E., S. W. Hsiao, N. T. Minahan, T. Y. Yen, A. V. A. Carvalho, D. Raoult, P. E. Fournier, K. H. Tsai\*. 2020. Seroepidemiological and molecular investigation of spotted fever group rickettsiae and *Coxiella burnetii* in Sao Tome Island: a One Health approach. *Transboundary and Emerging Diseases*. 67: 36-43. (SCI) (IF=4.188, Q1 (4/141), Veterinary Sciences)(2019.06.24)
7. Nicholas T. Minahan, Rebecca J. Davis, Stephen R. Graves, and K. H. Tsai\*. 2020. Australian case of scrub typhus contracted while hiking in northern Taiwan. *J. Formosan Med. Assoc.* 119: 662-663. (SCI) (IF=3.008 Q2 (42/165) Medicine, General & Internal Sciences)(2019.07.29)
8. Yen, T. Y., Z. Zhang, C. C. Chao, W. M. Ching, P. Y. Shu, L. F. Tseng, A. V. de A. Carvalho, and K. H. Tsai\*. 2019. Serologic evidence for *Orientia* exposure in the Democratic Republic of Sao Tome and Principe. *Vector-Borne Zoonotic Disease*. 19: 821-827. (SCI) (IF=2.249, Q2 (85/193), Public, Environmental & Occupational Health)(2019.08.13)
9. Tsai, K. H., L. H. Chung, C. H. Chien, Y. J. Tung, H. Y. Wei, T. Y. Yen, P. Y. Shu, and H. C. Wang\*. 2019. Human granulocytic anaplasmosis in Kinmen, an offshore island of Taiwan. *PLOS Negl. Trop. Dis.* 13(9): e0007728. (SCI) (IF=3.885, Q1 (1/23), Tropical Medicine)(2019.09.20)
10. Yen, T. Y., Y. J. Tung, H. C. Wang, and K. H. Tsai\*. 2020. Detection of *Ehrlichia chaffeensis* in a febrile patient in Kinmen, an offshore island of Taiwan. *J. Formosan Med. Assoc.* 119: 1329-1330. (SCI) (IF=3.008, Q1 (42/165), Medicine, General & Internal Sciences)(2019.10.25)
11. Chen, Y. A., J. C. Lien, L. F. Tseng, C. F. Cheng, W. Y. Lin, H. Y. Wang, and K. H. Tsai\*. 2019. Effects of indoor residual spraying and outdoor larval control on *Anopheles coluzzii* from malaria pre-eliminated islands, Sao Tome and Principe. *Malaria Journal*. 18: 405. (SCI) (IF=2.631, Q1 (4/23), Tropical Medicine)(2019.12.05)
12. Chen, Y. A., Y. T. Lai, K. C. Wu, T. Y. Yen, C. Y. Chen, and K. H. Tsai\*. 2020. Using UPLC-MS/MS to evaluate the dissemination of pyriproxyfen by *Aedes* mosquitoes to combat cryptic larval habitats after source reduction in Kaohsiung in Southern Taiwan. *Insects*. 11, 251. (SCI) (IF=2.220, Q1 (18/101), Entomology)(2020.04.16)
13. Zeb, I., A. Ali\*, J. Nawab, M. Q. Khan, A. Kamil, K. H. Tsai. 2020. Cutaneous leishmaniasis in male

schoolchildren in the upper and lower Dir districts of Khyber Pakhtunkhwa, and a review of previous record in Pakistan. *Acta Trop.* doi: 10.1016/j.actatropica.2020.105578. (SCI) (IF=2.555, Q1 (5/23), *Tropical Medicine*)(2020.06.10)

14. Tsai, K. H. \*, T. Y. Yen, W. J. Wu, R. Carvalho, D. Raoult, and P. E. Fournier. 2020. Investigation of *Ctenocephalides felis* on domestic dogs and *Rickettsia felis* infection in the Democratic Republic of Sao Tome and Principe. *Zoonoses and Public Health.* 67: 884-894. (SCI) (IF=2.271, Q1 (17/141), *Veterinary Sciences*)(2020.11.04)

## **B. (International Conference with peer reviewed)**

1. Tsai, K. H., L. F. Tseng, C. F. Cheng, M. C. R. Ferreira, C. A. B. D'Almeida, M. J. T. Santos, and J. C. Lien. 2016. Applying *Bacillus thuringiensis israeliensis (Bti)* to control exophilic *Anopheles coluzzii* towards pre-elimination stage of malaria in the Democratic Republic of Sao Tome and Principe. XXV International Congress of Entomology. Orlando, Florida, USA. September 25~30.
2. Yen, T. Y. and K. H. Tsai. 2016. Characterization of immunogenic proteins in *Aedes* saliva with antibodies of indigenous dengue patient in northern Taiwan. XXV International Congress of Entomology. Orlando, Florida, USA. September 25~30.
3. Tsai, K. H. 2016. Effects of climate change on new emerging vector-borne infectious diseases. CWB-APCC Workshop on Climate Service for Health. International Conference Hall, Central Weather Bureau. Taipei, Taiwan. Oct. 12~13, 2016. (Invited speaker)
4. Yen, T. Y., C. L. Sue, P. Y. Shu, and K. H. Tsai. 2016. Distinguish dengue vector exposure by antibodies against mosquito salivary protein. The 37th Annual Meeting of Taiwan Entomological Society. National Taiwan University, Taiwan. October 14~15, 2016. (Oral)
5. Chen, Y. A., L. F. Tseng, C. F. Cheng, J. C. Lien, and K. H. Tsai. 2016. Knockdown resistance (kdr) analysis of a new member of *Anopheles gambiae* complex - *Anopheles coluzzii* in Democratic Republic of Sao Tome and Principe. The 37th Annual Meeting of Taiwan Entomological Society. National Taiwan University, Taiwan. October 14~15, 2016. (Oral)
6. Hsiao, S. W., L. F. Tseng, W. J. Wu, H. C. Wang, and K. H. Tsai. 2016. Molecular and epidemiological study of spotted fever group rickettsiae in the Democratic Republic of Sao Tome and Principe. The 37th Annual Meeting of Taiwan Entomological Society. National Taiwan University, Taiwan. October 14~15, 2016. (Oral)
7. Yu, K. D., T. Y. Yen, C. S. Chen, and K. H. Tsai. 2016. The population distribution of autogenous *Culex pipiens molestus* in metropolitan city of Taipei and Kaohsiung. The 37th Annual Meeting of Taiwan Entomological Society. National Taiwan University, Taiwan. October 14~15, 2016. (Oral)
8. 沈昱均、賴羿廷、巫國志、蔡坤憲。2016。蚊蟲攜帶自營性阿米巴之檢測。2016年公衛年會聯合年會。國防醫學大學，台北。2016年10月15、16日。
9. 陳滢安、陳家揚、賴羿廷、蔡坤憲。2016。埃及斑蚊成蚊散布昆蟲生長調節劑百利普芬及抑制羽化之效能評估。2016年公衛年會聯合年會。國防醫學大學，台北。2016年10月15、16日。
10. Tsai, K. H. 2016. Applications of ovi-trap and auto-dissemination of pyriproxyfen to control cryptic source of Dengue vectors. 5th International Dengue Conference. Kaohsiung, Taiwan. Oct. 23~24, 2016. (Invited speaker)
11. Yen, T. Y., K. H. Tsai. 2016. Effects of boric acid ovitrap on the control of dengue vectors in the laboratory. ASTM 65th Annual Meeting. Atlanta, GA, USA. November 13~17, 2016. (poster)
12. Tsai, K. H., T. Y. Yen, L. F. Tseng, C. C. Chao, M. de Jesus Trovoada dos Santos, W. M. Ching, Z. Zhang, C. F. Cheng, P. Y. Shu, and A. V. de Assunção Carvalho. 2016. Human antibodies against *Orientia tsutsugamushi* in the Democratic Republic of Sao Tome and Principe. ASTM 65th Annual Meeting. in Atlanta, GA, USA. November 13~17, 2016. (poster)
13. Yen, T. Y., C. L. Sue, P. Y. Shu, and K. H. Tsai. 2016. Distinguish dengue vector exposure by antibodies against mosquito salivary protein. The 37th Annual Meeting of the Taiwan Entomological Society. National Taiwan University, Taiwan. October 14~15, 2016. (oral)

14. Hsiao, S. W. and K. H. Tsai. 2017. Molecular and epidemiological study of spotted fever group rickettsiae in the Democratic Republic of Sao Tome and Principe. One Health. 9th Tick and Tick-borne Pathogen Conference & 1st Asia Pacific Rickettsia Conference. Cairns, Queensland, Australia. August 27 ~ September 1, 2017. (Oral)
15. 巫國志、賴羿廷、蔡坤憲。2017。以新型硼酸溶液產卵桶防治登革熱病媒蚊之田間評估。第38屆台灣昆蟲學會年會，國立自然科學博物館。106年10月20日~21日。(口頭報告)
16. Yu, K. D., T. Y. Yen, C. S. Chen, and K. H. Tsai. 2017. The population distribution and vector control strategies of autogenous *Culex pipiens molestus*. The 38th Annual Meeting of Taiwan Entomological Society. National Museum of Natural Science, Taichung, Taiwan. October 20~21, 2017. (Oral)
17. Yen, T. Y., L. F. Tseng, and K. H. Tsai. 2017. Serological evidence of scrub typhus in the Democratic Republic Sao Tome and Principe. The 38th Annual Meeting of Taiwan Entomological Society. National Museum of Natural Science, Taichung, Taiwan. October 20~21, 2017. (Oral)
18. Tsai, K. H. 2018. Field experience on ecological control of dengue and malaria vectors. APEC Conference on Severe Dengue Prevention and Strategies for Reducing Disease Burden. Tainan, Taiwan. May 3~4, 2018. (Invited Speaker)
19. Yu, K. D., and K. H. Tsai. 2018. The prevalence of autogenous *Culex pipiens molestus* in northern Taipei and southern Kaohsiung city buildings and evaluation of using effective microorganism as a vector control tool. The Vietnam Annual National Scientific Conference on Infectious Diseases, HIV/AIDS & 8th ASEAN Congress of Tropical Medicine and Parasitology (8th ACTMP), Nha Trang, Vietnam. July 26~29, 2018. (Oral)
20. Yen, T. Y. and K. H. Tsai. 2018. Discovering the unknowns, taking the Democratic Republic of Sao Tome and Principe for example. The Vietnam Annual National Scientific Conference on Infectious Diseases, HIV/AIDS & 8th ASEAN Congress of Tropical Medicine and Parasitology (8th ACTMP), Nha Trang, Vietnam. July 26~29, 2018. (Poster)
21. Yeh, T. J., and K. H. Tsai. 2018. Diversity of *Wolbachia* in mosquitoes of Taiwan and cultivation of *Wolbachia* in C6/36 cells by shell-vial technique. The Vietnam Annual National Scientific Conference on Infectious Diseases, HIV/AIDS & 8th ASEAN Congress of Tropical Medicine and Parasitology (8th ACTMP), Nha Trang, Vietnam. July 26~29, 2018. (Oral)
22. Tsai, K. H. 2018. Global health and infectious diseases. International Conference on Precision Science in Life and Health, Matsu, Taiwan. August 31~September 3. (Invited speaker)
23. Hsi, T. E. and K. H. Tsai. 2018. Molecular and seroepidemiological study of Q fever in the Democratic Republic of Sao Tome and Principe. International Congress on Tropical Veterinary Medicine – 2nd Joint AITVM-STVM Meeting, Buenos Aires, Argentina. September 23~28, 2018. (poster)
24. Chung, L. H., H. C. Wang, and K. H. Tsai. 2018. Molecular detection of *Anaplasma phagocytophilum* in chiggers and small mammals' spleens in Kinmen. The 39th Annual Meeting of Taiwan Entomological Society. National Cheng Kung University, Tainan, Taiwan. October 20~21, 2018. (oral)
25. Lai, Y. T., K. C. Wu, and K. H. Tsai. 2018. Practical evaluation of novel ovitrap with boric acid solution to monitor and control dengue mosquitoes. The 39th Annual Meeting of Taiwan Entomological Society. National Cheng Kung University, Tainan, Taiwan. October 20~21, 2018. (oral)
26. Yen, T. Y. and K. H. Tsai. 2018. Stable culture of *Wolbachia* in insect cells. The 39th Annual Meeting of Taiwan Entomological Society. National Cheng Kung University, Tainan, Taiwan. October 20~21, 2018. (oral)
27. Tsai, K. H. 2018. Community-based public health education for dengue control. New South Bound: Indonesia-Taiwan Dengue Workshop. Taiwan CDC (Linsen Office). October 21~November 1, 2018. (Invited speaker)
28. Tsai, K. H. 2018. The new emerging vector-borne rickettsial diseases in Taiwan. The 3rd Symposium of "Biodiversity and Health in SEA". National Chiayi University. November 15~18, 2018. (Plenary speaker) (Session chair: Theme 2: Emerging Infectious Diseases: Vector-borne and Zoonosis)
29. Chang, I. Y. and K. H. Tsai. 2018. The push-pull control strategies of indigenous plant essential oils against the important blood-sucking insects (Diptera). Symposium of the Current Trends of Plant Essential Oils Development and Application. November 30 at National Kaohsiung University, Taiwan. (Invited speaker)
30. Yen, T. Y., C. Y. Lee, C. C. Chao, Y. W. Wu, T. P. Lu, W. M. Ching, and K. H. Tsai. 2018. *de novo* sequencing of two vectors of scrub typhus, *Leptotrombidium deliense* and *L. scutellare*. ASTMH 67th Annual Meeting, New Orleans, LA, USA. October 28~November 1, 2018. (poster)

31. Yu, K. D. and K. H Tsai. 2019. The prevalence and diversity of autogenous *Culex pipiens molestus* in Taiwan. The 16th arbovirus surveillance and mosquito control workshop in conjunction with the NE 1443 regional project's 5th annual meeting and the FMCA's NE regional meeting, St. Augustine, Florida. March 26~28, 2019. (oral)
32. Tsai, K. H. 2019. (1) General introduction of the mosquito-borne disease; (2) Overview of dengue and its vectors; (3) Biology and ecology of mosquitoes in urban area; (4) Introduction of Various Indices of Dengue Vectors. The New Southbound Policy: Vector Surveillance of Dengue and Data Analysis Workshop. Bandung Institute of Technology, Indonesia. April 22~26, 2019. (invited lecturer)
33. Tsai, K. H. 2019. Investigation of the new emerging vector-borne rickettsial diseases in Taiwan. The 6th IFSCMVD, Xiamen, China. May 26~29, 2019. (invited speaker)
34. Chao, C. C., Z. Zhang, S. L. Yang, K. H. Tsai, and P. Y. Shu. 2019. Newly cloned and expressed 56 kDa recombinant proteins are broadly reactive to *Orientia*-specific antibodies from infection by various *Orientia tsugamushi* strains. The 2nd Asia Pacific Rickettsia Conference. Chiang-Rai, Thailand. November 3~9, 2019. (poster)
35. Lin, T. L., P. Y. Deng, I. H. Tsai, L. S. Yang, L.Y. Wang, Y. F. Tsai, K. D. Yu, M. H. Lin, and K. H. Tsai. 2019. A cross sectional assessment of knowledge, attitude and practice towards tungiasis among population of Khalwenge, Kitale, Kenya. One Health International Conference. National Yang-Ming University, Taipei. September 24~26, 2019. (poster)
36. Minahan, N. T. and K. H. Tsai. 2019. An update on scrub typhus in Taiwan. One Health International Conference. National Yang-Ming University, Taipei. September 24~26, 2019. (poster)
37. Chen, Y. A., J. C. Lien, L. F. Tseng, C. F. Cheng, W. Y. Lin, H. Y. Wang, and K. H. Tsai. 2019. Effects of indoor residual spraying and outdoor larval control on *Anopheles coluzzii* from malaria pre-eliminated islands, Sao Tome and Principe. The 40th Annual Meeting of Taiwan Entomological Society. NTU Experimental Forest, Xitou Nature Education Area, Nantou, Taiwan. October 19~20, 2019. (Oral)
38. Yu, K. D., T. Y. Yen, C. S. Chen, and K. H. Tsai. 2019. The population distribution and genetic diversity of autogenous *Culex pipiens molestus* (Diptera: Culicidae) in Taipei and Kaohsiung. The 40th Annual Meeting of Taiwan Entomological Society. NTU Experimental Forest, Xitou Nature Education Area, Nantou, Taiwan. October 19~20, 2019. (Oral)
39. Cheng, Y. C., C. Y. Lin, and K. H. Tsai. 2019. Using UPLC-QqQ-MS/MS based lipidomic approach to analyze the lipid compositions in *Aedes albopictus* C6/36 cell line. The 40th Annual Meeting of Taiwan Entomological Society. NTU Experimental Forest, Xitou Nature Education Area, Nantou, Taiwan. October 19~20, 2019. (Oral)
40. Tsai, Y. F., K. H. Tsai., S. F. Shiao and J. C. Lien. 2019. Studies on sand flies (Psychodidae-Diptera- Phlebotominae) of medical importance in Taiwan. The 40th Annual Meeting of Taiwan Entomological Society. NTU Experimental Forest, Xitou Nature Education Area, Nantou, Taiwan. October 19~20, 2019. (Oral)
41. Deng, P. Y., T. L. Lin, I. H. Tsai, L. S. Yang, L. Y. Wang, Y. F. Tsai, K. D. Yu, M. H. Lin, and K. H. Tsai. 2019. A cross sectional assessment of knowledge, attitude and practice towards tungiasis among population of Khalwenge, Kitale, Kenya. The 40th Annual Meeting of Taiwan Entomological Society. NTU Experimental Forest, Xitou Nature Education Area, Nantou, Taiwan. October 19~20, 2019. (Oral)
42. Wang, C. Y. and K. H. Tsai. 2019. Occurrence of *Cimex hemipterus* in Taiwan. The 40th Annual Meeting of Taiwan Entomological Society. NTU Experimental Forest, Xitou Nature Education Area, Nantou, Taiwan. October 19~20, 2019. (poster)
43. Yu, K. D., T. Y. Yen, and K. H. Tsai. 2019. The population distribution and genetic diversity of autogenous *Culex pipiens molestus* in Taipei and Kaohsiung. ASTMH 68<sup>th</sup> Annual Meeting. National Harbor, MD, USA. November 20~24, 2019 (oral)
44. Yen, T. Y. and K. H. Tsai. 2019. Antibody responses against mosquito salivary proteins in indigenous dengue patients in Taiwan. Symposium on new emerging mosquito-borne diseases and vectors. International Conference Hall, National Health Research Institutes, Zhunan Campus, Miaoli County. November 25, 2019. (poster)

45. Yen, T. Y., Y. T. Lai, K. D. Yu, and K. H. Tsai. 2019. Vector biology and environmental characteristics of dengue outbreaks in northern Taiwan. Symposium on new emerging mosquito-borne diseases and vectors. International Conference Hall, National Health Research Institutes, Zhunan Campus, Miaoli County. November 25, 2019. (poster)
46. Chen, Y. A., Y. T. Lai, K. C. Wu, C. Y. Chen, and K. H. Tsai. 2019. Evaluation of using pyriproxyfen dissemination strategy to reduce cryptic larval sources of *Aedes aegypti* in southern Taiwan. Symposium on new emerging mosquito-borne diseases and vectors. International Conference Hall, National Health Research Institutes, Zhunan Campus, Miaoli County. November 25, 2019. (poster)
47. Tsai, K. H. and T. Y. Yen. 2020. Vector-Borne Disease Control: A Successful Story from Taiwan. The Third International Conference on Public Health for Tropical and Coastal Development (3<sup>rd</sup> ICOPH-TCD). Host by Diponegoro University, Semarang, Indonesia. Web Conference on September 29~30, 2020. (invited plenary speaker)
48. Tsai, K. H. 2020. Community Participation on Vector Control Strategies in Coastal Area. Summer Course Program: Community Participation in Public Health. Host by Faculty of Public Health, Universitas Diponegoro. October 1~10, 2020. (invited speaker)
49. Tsai, Y. F., S. F. Shiao, and K. H. Tsai. 2020. Morphological and molecular identification of sand flies of Taiwan. The 41th Annual Meeting of Taiwan Entomological Society. October 17-18, 2020. National Taiwan Science Education Center, Taipei, Taiwan. (oral)
50. Cheng, Y. C., C. Y. Lin, and K. H. Tsai. 2020. Using UPLC-QqQ-MS/MS based lipidomic approach to analyze phosphorylcholine-containing lipid compositions in Zika virus-infected *Aedes albopictus* C6/36 cells. 2020 Taiwan Public Health Association Annual Meeting. October 17-18, 2020. National Taiwan Normal University, Taipei, Taiwan. (oral)
51. Lin, T. L., J. H. Yang, C. C. Tseng, and K. H. Tsai. 2020. Molecular detection of *Rickettsia felis* and *Bartonella* spp. in cat fleas (*Ctenocephalides felis*) infesting small companion animals from Hualien. 2020 Taiwan Public Health Association Annual Meeting. October 17-18, 2020. National Taiwan Normal University, Taipei, Taiwan. (oral)
52. Chen, C. H., M. Martini, and K. H. Tsai. 2020. Investigation of flea-borne rickettsiae in Semarang City in Central Java, Indonesia. 2020 Taiwan Public Health Association Annual Meeting. October 17-18, 2020. National Taiwan Normal University, Taipei, Taiwan. (poster)
53. Deng, P. Y., C. F. Lin, and K. H. Tsai. 2020. Molecular surveillance of *Bartonella* and *Rickettsia* spp. in fleas infesting rodents in Chiayi-Tainan. 2020 Taiwan Public Health Association Annual Meeting. October 17-18, 2020. National Taiwan Normal University, Taipei, Taiwan. (poster)
54. Chen, Y. S., C. C. Chu, and K. H. Tsai. 2020. The investigation on the risk of landscaping plants forming potential vector sources: a case study of *Bromelioideae*. 2020 Taiwan Public Health Association Annual Meeting. October 17-18, 2020. National Taiwan Normal University, Taipei, Taiwan. (poster)
55. Tsai, K. H. 2020. Effects of climate change on vector-borne infectious diseases. Host by Environmental Protection Administration, Executive Yuan, R.O.C. (Taiwan). November 25, 2020. (invited speaker)