

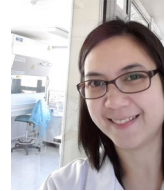


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Insecticide Toxicology and Biochemistry Laboratory

Under the direction of

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The development of insecticide resistance is a primary concerns for the management of insect pest control. A better understanding of insecticide susceptibility level and resistance mechanisms will allow for greater efficiency in insect pest control program. Therefore, our laboratory are focusing on insecticide resistance in both medically important insect such as *Aedes aegypti* which is primary dengue vector and economically important pests of stored products such as *Cryptolestes* spp. In addition, degradation and analysis of insecticide residues in environment are also our group interest.

Research topics

- Multi-center laboratory study to develop test protocols and determine discriminating concentrations of insecticides for resistance monitoring in mosquitoes.
- Investigation of insecticide resistant mechanisms of *Aedes aegypti* which is dengue vector and *Cryptolestes* spp. which is economically important pests of stored products.
- The relation between biological clock gene expression and metabolic transcriptome of *Anopheles dirus* s.s. (Diptera: Culicidae), the malaria vector in Thailand under different light intensity.

Publications

- Achee N.L. , Grieco J.P., Vatandoost H., Seixas G., Pinto J, Ching-NG L., Martins A.J., Juntarajumnong W., Corbel V., Gouagna C., David J-P., Logan J.G., Orsborne J., Marois E., Devine G.J., Vontas J. 2019. Alternative strategies for mosquito-borne arbovirus control. PLoS Neglected Tropical Diseases. 13(1): e0006822.
- Bodharamik T., Juntarajumnong W., Apiwathnasorn C., Sungvornyothin S., Arunyawat U. 2018. Diversity of mosquito species ovipositing in different zones of light intensity within limestone caves in Thailand. Journal of the American Mosquito Control Association. 34(3): 182-189.
- Corbel V., Fonseca D.M., Weetman D., Pinto J., Achee N.L., Chandre F., Coulibaly M.B., Dufour I., Grieco J., Juntarajumnong W., Lenhart A., Martins A.J., Moyes C., Ng L.C., Raghavendra K., Vatandoost H., Vontas J., Muller P., Kasai S., Fouque F., Velayudhan R., Durot C. and David J-P. 2017. International workshop on insecticide resistance in vectors of arboviruses, December 2016, Rio de Janeiro, Brazil. Parasites & Vectors. 10(1): 278.
- Faucon F., Gaude T., Dufour I., Navratil V., Corbel V., Juntarajumnong W., Girod R., Poupardin R., Boyer F., Reynaud S., David J.-P. 2017. In the hunt for genomic markers of metabolic resistance to pyrethroids in the mosquito *Aedes aegypti*: An integrated next-generation sequencing approach. PLoS Neglected Tropical Diseases. 11(4): e0005526.

Research team



Research networks

- Department of Medical Entomology, Faculty of Tropical Medicine, Mahidol University, Thailand
- The Worldwide Insecticide Resistance Network (WIN)
- Institut de recherche pour le développement, France
- Department of Biochemistry, University of Otago, New Zealand