

## **PRAKIT SAINGAM**

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### **Education**

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| 2016 – 2020 | Ph. D. in Civil and Environmental Engineering<br>College of Engineering, University of Hawaii at Manoa, USA     |
| 2013 – 2015 | Master of Science in Environmental Science and Engineering<br>School of Environment, Tsinghua University, China |
| 2008 - 2012 | Bachelor of Science with Honors (Biotechnology)<br>Mahidol University, Thailand                                 |

### **Scholarships**

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|-------------|--|
| 2020        | L. Stephen Lau Water Research Endowed Scholarship  |
| 2016 – 2020 | East-West Center (EWC) Student Affiliate, Honolulu, Hawaii                                 |
| 2016 – 2020 | National Science Foundation (NSF)  |
| 2013 – 2015 | China Scholarship Council (CSC) scholarship (full scholarship to cover tuition and living) |

### **Research Interests**

Microbiological quality of waters based on direct pathogen detection and wastewater-based epidemiology

### **Research Experiences**

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|------------------|---|
| 2020.1 – present | Detection of SARS-CoV-2 virus in wastewater                               |
| 2017 – 2019      | Distribution and diversity of fecal pathogens in natural waters           |
| 2016 – 2017      | Kinetics of fecal pathogens and FIB in wastewater                         |
| 2016 – 2017      | Novel detection of pathogens from water environment using PCR-NGS methods |
| 2013 – 2015      | Treatment of industrial air pollution by biofilters                       |

## Research techniques

- Microbiology (microbial cultivation, screening, and isolation)
- Molecular biology (DNA/RNA extraction, gene cloning, PCR, and qPCR)
- Microbial extraction from water, soil, and wastewater samples
- Sample preparation for Next generation sequencing (NGS)
- Biofilter, Gas Chromatography (GC) analysis
- Confocal Laser Scanning Microscopy (CLSM)
- Statistical Analysis by R
- Bioinformatics by Qiime and Python
- Groundwater modelling system (GMS) software

## Publications

**Saingam, P.**, Li, B., & Yan, T. (2020). Fecal Indicator Bacteria, Direct Pathogen Detection, and Microbial Community Analysis Provide Different Microbiological Water Quality Assessment of A Tropical Urban Marine Estuary. *Water Research*, 116280.

Baig, Z., Meng, L., **Saingam, P.**, & Xi, J. (2018). Ozonation and Depolymerization of Extracellular Polymeric Substances (EPS) Extracted from a Biofilter Treating Gaseous Toluene. *Polymers*, 10(7), 763.

Li, B., **Saingam, P.**, Ishii, S., & Yan, T. (2018). Multiplex PCR coupled with direct amplicon sequencing for simultaneous detection of numerous waterborne pathogens. *Applied microbiology and biotechnology*, 1-9.

**Saingam, P.**, Li, B., & Yan, T. (2018). Use of amplicon sequencing to improve sensitivity in PCR-based detection of microbial pathogen in environmental samples. *Journal of microbiological methods*.

**Saingam, P.**, Baig, Z., Xu, Y., & Xi, J. (2017). Effect of ozone injection on the long-term performance and microbial community structure of a VOCs biofilter. *Journal of Environmental Sciences*.

**Saingam, P.**, Xi, J., Xu, Y., & Hu, H. Y. (2016). Investigation of the characteristics of biofilms grown in gas-phase biofilters with and without ozone injection by CLSM technique. *Applied microbiology and biotechnology*, 100(4), 2023-2031.

Xu, Y., **Saingam, P.**, Gu, F., Xi, J., & Hu, H. Y. (2016). The effect of injected ozone on the microbial metabolic characteristics in biofilters treating gaseous toluene. *Ecological Engineering*, 94, 174-181.

Xi, J., **Saingam, P.**, Gu, F., Hu, H. Y., & Zhao, X. (2015). Effect of continuous ozone injection on performance and biomass accumulation of biofilters treating gaseous toluene. *Applied microbiology and biotechnology*, 99(1), 33-42.

### **Manuscripts (under review/in preparation)**

Saingam, P., Sung, S., & Yan, T. Immediate impact of hurricane Lane on microbiological water quality and enterococci diversity in Hilo bay (submitted to *Environmental science & technology*).

Saingam, P., Di, D.Y.W., & Yan, T. Pathogenic *Enterococcus* spp. in coastal water impacted by hurricane Lane at Hilo bay.

Saingam, P., & Yan, T. The microbial kinetics of enteric pathogens and FIB in simulated sewage.

Saingam, P., & Yan, T. Phylogenetic diversity, virulence genes, and antibiotic resistance of *Vibrio parahaemolyticus* in a tropical urban marine estuary in Hawaii.

### **Conferences (only the most recent three conferences are shown)**

Saingam P., & Yan, T. "Phylogenetic Diversity, Virulence Genes, and Antibiotic Resistance of *Vibrio parahaemolyticus* in a Tropical Urban Marine Estuary in Hawaii", Aug. 25-29, 2019. American Chemical Society Conference, San Diego, CA (Poster Presentation).

Saingam P., & Yan, T. "Distribution of Gastroenteritis Bacteria in Tropical Urban Estuary of Ala Wai and Correlation to Fecal Indicators", Feb. 20-21, 2019. Pacific Water Conference, Honolulu, HI (Poster Presentation).

Saingam P., & Yan, T. "Effects of Sewage Environment on the Decay of Fecal Indicator Bacteria (FIB)", Apr. 21, 2018. Hawaii Branch-ASM, Honolulu, HI (Oral Presentation).

### **Teaching & Mentoring Experience**

Jun 2020 - present    Mentoring High School student for the John and Violet Key Summer Research Fellowship, College of Engineering, UH Manoa

Aug - Dec 2019        TA of Environmental Engineering (CEE330, junior-level course), College of Engineering, UH Manoa

Jun - Aug 2019        Mentoring undergraduate students for the NHSEMP program, College of Engineering, UH Manoa

Jun - Jul 2016        Mentoring High School students for the HS internship program, College of Engineering, UH Manoa

### **Language Skills**

- Thai (native)

- English (advanced)
- Mandarin Chinese (advanced)