

## CURRICULUM VITAE

**Zhi (George) Zhou**  
**Ph.D., P.E., BCEE, ENVSP**

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### EDUCATION

2007            **Ph.D.**, Environmental Science in Civil Engineering, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, IL, U.S.  
2002            **M.S.**, Environmental Science, Nanjing University, China  
1999            **B.S.**, Environmental Science, Nanjing University, China

### LICENSURE AND CERTIFICATION

2018–present    **Envision Sustainability Professional (ENV SP)**, Institute for Sustainable Infrastructure  
2017–present    **Board Certified Environmental Engineer (BCEE)**, American Academy of Environmental Engineers & Scientists  
2010–present    **Professional Engineer (Civil Engineer)**, California Board for Professional Engineers, Land Surveyors, and Geologists  
2010            **Certificate** on "Developing Sustainable Program Assessment Processes", ABET workshop MD-Professional Services, ABET, Inc.  
2003–2006      **Certified Livestock Manager**, Illinois Department of Agriculture, IL

### PROFESSIONAL EXPERIENCE

06/2014–present    **Assistant Professor**, School of Civil Engineering and Division of Environmental and Ecological Engineering, Purdue University, West Lafayette, IN  
04/2017–present    **Affiliated Faculty**, Center for the Environment, Purdue University  
02/2017–present    **Affiliated Faculty**, Purdue Policy Research Institute, Purdue University  
06/2014–present    **Affiliated Faculty**, Interdisciplinary Graduate Program of Ecological Sciences & Engineering, Purdue University  
02/2010–05/2014    **Assistant Professor**, Department of Civil and Environmental Engineering, National University of Singapore (NUS), Singapore  
06/2013–07/2013    **Visiting Professor**, School of Engineering and Applied Sciences, Harvard University, Cambridge, MA  
2007–2010        **Consulting Engineer**, Carollo Engineers, Inc., Walnut Creek, CA  
2002–2007        **Research Assistant**, University of Illinois, Urbana, IL  
10/2004–11/2004    **Visiting Student**, The French National Centre for Scientific Research, National Chemical Engineering Science Laboratory (CNRS, ENSIC), Nancy, France  
2000–2002        **Research Assistant**, Nanjing University, China  
1998–1999        **Undergraduate Research Assistant**, Nanjing University, Jiangsu, China  
1998            **Intern**, National Environmental Protection Bureau, Nanjing, Jiangsu, China

**RESEARCH GRANTS**

- 2018 **Principal Investigator (PI)**, "Nature-inspired cost-effective production of biofuels with algal viruses", Purdue Research Foundation
- 2017 **PI**, "Effects of viruses on the development of harmful algal blooms", United States Geological Survey Annual Base Grants (104b)
- 2017 **PI**, "Anti-fouling electrochemical graphene/carbon nanotube ceramic membrane for wastewater treatment", Summer Faculty Grant, Purdue Research Foundation
- 2016 **PI**, "Development of electrochemical membranes to reduce biofouling for water purification", Purdue EEE Support for Exploratory Research
- 2015–2016 **PI**, "Microbial source tracking for Gunpowder Creek Watershed in Kentucky", Sanitation District No. 1 of Northern Kentucky and Boone County Conservation District
- 2015–2016 **PI**, "Artificial photosynthesis for efficient biofuel production with bioelectrocatalyzed reduction of CO<sub>2</sub>", Purdue Research Foundation
- 2015 **Co-PI**, "Recovery of nutrients from animal and human wastes", Bio Town AG Inc.
- 2013–2016 **PI**, "Rapid and accurate quantification of antibiotic resistant bacteria and quantitative risk assessment for water security", Singapore Environment & Water Industry
- 2013–2015 **PI**, "Development of electrochemical carbon nanotube filters to remove off-flavor compounds", Singapore Environment & Water Industry
- 2013–2015 **Co-PI**, "Guidelines for engineered storage for direct potable reuse systems", U.S. WateReuse Research Foundation
- 2012–2013 **Co-PI**, "Interaction of microbial consortia in anaerobic MBR treating high organic strength waste", General Electric
- 2011–2014 **PI**, "A new type of photosynthesis through electrode-driven anaerobic respiration", Singapore Ministry of Education
- 2010–2013 **PI**, "Photoelectrochemical water splitting for the production of value-added chemicals", Singapore, Peking and Oxford Research Enterprise
- 2010–2013 **PI**, "Evaluation of MLS<sub>B</sub> antimicrobial resistance at environmental samples", Singapore Ministry of Education
- 2010–2013 **Co-PI**, "Development of microbial fuel cell sensor for detection of used water toxicity", Singapore Public Utilities Board

**HONORS AND AWARDS**

- 2010 Certificate of Appreciation, Chinese American Environmental Professionals Association, Oakland, CA
- 2007 Graduate College Conference Travel Award, University of Illinois
- 2005–2007 Racheff Graduate Student Travel Fund Award, University of Illinois
- 2005 Natural Science Progress Award (second class), Nanjing, China
- 2004 American Society for Microbiology Travel Grant
- 2002 University Fellowship, University of Illinois
- 2002 John W. Page Fellowship, University of Illinois
- 2001 Excellence Fellowship, Nanjing University

**HONORS AND AWARDS OF ADVISED STUDENTS**

- 2012 Excellence Award of the ESE Poster Symposium for Yuanyan Du (senior undergraduate student), NUS

- 2012 Merit Award of the ESE Poster Symposium for Steve Chenghui Lin (senior undergraduate student), NUS
- 2011 President's Graduate Fellowship for Xinzhu Yi (Ph.D. student), NUS

### **JOURNAL PUBLICATIONS**

1. Salehi, M., M. Abouali, M. Wang, **Z. Zhou**, A.P. Nejadhashemi, J. Mitchell, S. Caskey, and A.J. Whelton (2018). "Case study: Fixture water use and drinking water quality in a new residential green building." *Chemosphere* 195: 80-89.
2. Pruden, A., R.E. Alcalde, P.J.J. Alvarez, N. Ashbolt, H. Bischel, N.L. Capiro, E. Crossette, D. Frigon, K. Grimes, C.N. Haas, K. Ikuma, A. Kappell, T. LaPara, L. Kimbell, M. Li, X. Li, P. McNamara, Y. Seo, M.D. Sobsey, E. Sozzi, T. Navab-Daneshmand, L. Raskin, M.V. Riquelme, P. Vikesland, K. Wigginton, and **Z. Zhou** (2018). "An Environmental Science and Engineering Framework for Combating Antimicrobial Resistance." *Environmental Engineering Science*.
3. Liu, C., Y. Sun, D. Wang, Z. Sun, M. Chen, **Z. Zhou**, and W. Chen (2017). "Performance and mechanism of low-frequency ultrasound to regenerate the biological activated carbon." *Ultrasonics Sonochemistry* 34: 142-153.
4. He, H. and **Z. Zhou** (2017). "Electro-Fenton process for water and wastewater treatment." *Critical Reviews in Environmental Science and Technology* 47(21): 2100-2131.
5. Le, T.-H., C. Ng, H. Chen, X.Z. Yi, T.H. Koh, T.M.S. Barkham, **Z. Zhou**, and K.Y.-H. Gin (2016). "Occurrences and characterization of antibiotic resistant bacteria and genetic determinants of hospital wastewaters in a tropical country." *Antimicrobial Agents and Chemotherapy* 60(12): 7449-7456.
6. Jing, H., S. Cheung, **Z. Zhou**, C. Wu, S. Nagarajan, and H. Liu (2016). "Spatial variations of the methanogenic communities in the sediments of tropical mangroves." *PLOS One* 11(9): e0161065.
7. Jame, S.A. and **Z. Zhou** (2016). "Electrochemical carbon nanotube filters for water and wastewater treatment." *Nanotechnology Reviews* 5(1): 41-50.
8. Goyal, N., **Z. Zhou**, and I.A. Karimi (2016). "Metabolic processes of *Methanococcus maripaludis* and potential applications." *Microbial Cell Factories* 15(1): 107.
9. Yi, X., S. Bayen, B.C. Kelly, X. Li, and **Z. Zhou** (2015). "Improved detection of multiple environmental antibiotics through an optimized sample extraction strategy in liquid chromatography-mass spectrometry analysis." *Anal Bioanal Chem* 407(30): 9071-83.
10. Liu, Y., J. Xie, C.N. Ong, C.D. Vecitis, and **Z. Zhou** (2015). "Electrochemical wastewater treatment with carbon nanotube filters coupled with in situ generated H<sub>2</sub>O<sub>2</sub>." *Environmental Science: Water Research & Technology* 1(6): 769-778.
11. Liu, Y., H. Liu, **Z. Zhou**, T. Wang, C.N. Ong, and C.D. Vecitis (2015). "Degradation of the common aqueous antibiotic tetracycline using a carbon nanotube electrochemical filter." *Environmental Science & Technology* 49(13): 7974-7980.
12. Jing, H., X. Xia, H. Liu, **Z. Zhou**, C. Wu, and S. Nagarajan (2015). "Anthropogenic impact on diazotrophic diversity in the mangrove rhizosphere revealed by nifH pyrosequencing." *Front Microbiol* 6: 1172.
13. Goyal, N., M. Padhiary, I.A. Karimi, and **Z. Zhou** (2015). "Flux measurements and maintenance energy for carbon dioxide utilization by *Methanococcus maripaludis*." *Microbial Cell Factories* 14: 146.
14. Liu, Y., J.H.D. Lee, Q. Xia, Y. Ma, Y. Yu, L.Y.L. Yung, J. Xie, C.N. Ong, C.D. Vecitis, and **Z. Zhou** (2014). "A graphene-based electrochemical filter for water purification." *Journal of Materials Chemistry A* 2(39): 16554-16562.

15. Le, T.-H., V. Sivachidambaram, X. Yi, X. Li, and **Z. Zhou** (2014). "Quantification of polyketide synthase genes in tropical urban soils using real-time PCR." *Journal of Microbiological Methods* 106(0): 135-142.
16. Goyal, N., H. Widiastuti, I.A. Karimi, and **Z. Zhou** (2014). "A genome-scale metabolic model of *Methanococcus maripaludis* S2 for CO<sub>2</sub> capture and conversion to methane." *Molecular BioSystems* 10(5): 1043-54.
17. Bayen, S., X. Yi, E. Segovia, **Z. Zhou**, and B.C. Kelly (2014). "Analysis of selected antibiotics in surface freshwater and seawater using direct injection in liquid chromatography electrospray ionization tandem mass spectrometry." *Journal of Chromatography A* 1338: 38-43.
18. Zhang, Y., C. Zhang, D.B. Parker, D.D. Snow, **Z. Zhou**, and X. Li (2013). "Occurrence of antimicrobials and antimicrobial resistance genes in beef cattle storage ponds and swine treatment lagoons." *Science of the Total Environment* 463-464: 631-8.
19. Zhang, Y., D.D. Snow, D. Parker, **Z. Zhou**, and X. Li (2013). "Intracellular and extracellular antimicrobial resistance genes in the sludge of livestock waste management structures." *Environmental Science & Technology* 47(18): 10206-13.
20. Nagarajan, S., S.K. Chou, S. Cao, C. Wu, and **Z. Zhou** (2013). "An updated comprehensive techno-economic analysis of algae biodiesel." *Bioresour. Technology* 145: 150-6.
21. **Zhou, Z.** (2012). "Enhancing engineering students' learning in an environmental microbiology course." *Journal of Microbiology & Biology Education* 13(2): 191-192.
22. **Zhou, Z.**, L. Raskin, and J.L. Zilles (2010). "Effects of swine manure on macrolide, lincosamide, and streptogramin B antimicrobial resistance in soils." *Applied & Environmental Microbiology* 76(7): 2218-2224.
23. **Zhou, Z.**, L. Raskin, and J.L. Zilles (2009). "Macrolide resistance in microorganisms at antimicrobial-free swine farms." *Applied & Environmental Microbiology* 75(18): 5814-5820.
24. Vadiveloo, E., R. Cisterna, H. Breitenkam, J. Lopez, R. Harris, T. Greiner, P. Pitt, K. Alexander, R. Latimer, P. Vinci, **Z. Zhou**, and A. Salveson (2009). "Identifying the feasibility of canal recharge for indirect potable reuse: the Plantation experience." *Florida Water Resources Journal*(8): 38-43.
25. Finney, B., R. Gearheart, A. Salveson, **Z. Zhou**, M. Burke, and J.C. Ly (2009). "Water and wastewater treatment technologies appropriate (WAWT<sup>2</sup>TAR), a planning tool for selecting wastewater treatment technologies." *Water Environment & Technology*(10): 51-54.
26. **Zhou, Z.**, M.N. Pons, L. Raskin, and J.L. Zilles (2007). "Automated image analysis for quantitative fluorescence *in situ* hybridization with environmental samples." *Applied & Environmental Microbiology* 73(9): 2956-2962.
27. Yang, L., L. Xiao, **Z. Zhou**, D. Pei, and X. Wang (2004). "Effect of pH on adsorption of phenol to organic montmorillonite." *Environmental Chemistry* 23(2): 183-187.
28. Yang, L., **Z. Zhou**, L. Xiao, and X. Wang (2003). "Chemical and biological regeneration of HDTMA-modified montmorillonite after sorption with phenol." *Environmental Science & Technology* 37(21): 5057-5061.
29. Yang, L., **Z. Zhou**, and L. Xiao (2003). "Study on adsorption of phenol to HDTMA-modified montmorillonite and its mechanism." *Shanghai Environmental Sciences* 22(7): 456-458.
30. Shi, X., F. Wang, L. Jiang, **Z. Zhou**, L. Yang, Z. Kong, G. Gao, and B. Qin (2003). "Effect of temperature on the transformation of exogenous <sup>32</sup>P in water column, *Microcystis aeruginosa* and sediments." *Chinese Journal of Applied Ecology* 14(11): 1967-1970.
31. Yang, L., L. Jiang, **Z. Zhou**, Y. Chen, and X. Wang (2002). "The sedimentation capabilities of hexadecyltrimethylammonium-modified montmorillonites." *Chemosphere* 48(4): 461-466.
32. Yang, L., Q. Fu, L. Jiang, **Z. Zhou**, D. Pei, and X. Wang (2002). "The stability of organic matters adsorbed on organoclay." *China Environmental Science* 22(1): 52-55.

33. **Zhou, Z.** and L. Yang (2001). "Screening of phenol degrading yeast and its characteristics." *Journal of Nanjing University* 37(6): 724-729.

### **CONFERENCE PROCEEDINGS**

1. Wang, M. and **Z. Zhou** (2018). "Selective pressure of trace level antibiotics on the development of antibiotic resistance and horizontal gene transfer." *Association of Environmental Engineering and Science Professors Research and Education Distinguished Lecture Conference*, West Lafayette, IN.
2. Chan, R., M. Wang and **Z. Zhou** (2018). "Effect of carbon nanotube on horizontal gene transfer in microbes." *Association of Environmental Engineering and Science Professors Research and Education Distinguished Lecture Conference*, West Lafayette, IN.
3. L., B. L., J. T. Li, **Z. Zhou**, R. Huang and Y. N. Liang (2018). "The possible role of different aggregates in nitrogen removal in single-stage Autotrophic nitrogen removal process." *Association of Environmental Engineering and Science Professors Research and Education Distinguished Lecture Conference*, West Lafayette, IN.
4. Sun, Z., S. Wu and **Z. Zhou** (2018). "Nature-inspired virus-assisted lipid extraction for efficient biofuel production with microalgae *Chlorella* sp." *Association of Environmental Engineering and Science Professors Research and Education Distinguished Lecture Conference*, West Lafayette, IN.
5. Sun, Z., P. Mrutyunjay and **Z. Zhou** (2017). "Microbial eletrosynthesis of biofuels with *Blautia* strains." *American Society for Microbiology 117th General Meeting*, New Orleans, LA.
6. Sun, T., N.-A. Nguyen, Z. Sun and **Z. Zhou** (2017). "Acetate production through microbial electrosynthesis as an intermediate for biofuels production " *Undergraduate Research and Poster Symposium*, West Lafayette, IN.
7. Stryker, B. M., S. Park and **Z. Zhou** (2017). "Removal of lead with electrochemical multi-walled carbon nanotube filters." *23rd Annual Environmental Engineering & Science Symposium at University of Illinois*, Champaign, IL.
8. Sol, P., X. Jin and **Z. Zhou** (2017). "Removal of bacteria and DNA from wastewater using electrochemical multi-walled carbon nanotube filters." *23rd Annual Environmental Engineering & Science Symposium at University of Illinois*, Champaign, IL.
9. Padhiary, M., K. Walczak, N. Goyal, Z. Sun and **Z. Zhou** (2017). "Efficient biofuel production through microbial electrosynthesis." *23rd Annual Environmental Engineering & Science Symposium at University of Illinois*, Champaign, IL.
10. Padhiary, M., Z. Sun and **Z. Zhou** (2017). "Microbial electrosynthesis of biofuels using mixture culture in activated sludge." *Association of Environmental Engineering and Science Professors Research and Education Conference*, Ann Arbor, MI.
11. Nguyen, N.-A., T. Sun, Z. Sun and **Z. Zhou** (2017). "Acetate production through microbial electrosynthesis as an intermediate for biofuel production." *23rd Annual Environmental Engineering & Science Symposium at University of Illinois*, Champaign, IL.
12. He, H. and **Z. Zhou** (2017). "Removal of recalcitrant compounds with a flow through electro-Fenton carbon nanotube filters." *23rd Annual Environmental Engineering & Science Symposium at University of Illinois*, Champaign, IL.
13. He, H. and **Z. Zhou** (2017). "Efficient wastewater treatment in a carbon nanotube-based electro-Fenton system." *Association of Environmental Engineering and Science Professors Research and Education Conference*, Ann Arbor, MI.
14. Chen, R., M. Wang, Z. Sun, P. Sol and **Z. Zhou** (2017). "Electrochemical treatment to remove chemical contaminants in landfill leachate." *Association of Environmental Engineering and Science Professors Research and Education Conference*, Ann Arbor, MI.

15. Sol, P. and **Z. Zhou** (2017). "Performance and mechanisms of electrochemical carbon nanotube filtration to remove antibiotic resistant bacteria and antibiotic resistance genes." *Association of Environmental Engineering and Science Professors Research and Education Conference*, Ann Arbor, MI.
16. Yi, X., M. Wang, Q. Wei and **Z. Zhou** (2017). "Occurrence and distribution of erythromycin resistance methylase (*erm*) genes in urban surface waters without impact of treated wastewater." *Association of Environmental Engineering and Science Professors Research and Education Conference*, Ann Arbor, MI.
17. Wang, M., M. S. Esfandarani, A. Whelton and **Z. Zhou** (2017). "Chemical leaching and microbial growth in drinking water pipes in a newly commissioned residential building." *23rd Annual Environmental Engineering & Science Symposium at University of Illinois*, Champaign, IL.
18. Wu, S., Z. Sun and **Z. Zhou** (2017). "Improvement of lipid extraction in algal biodiesel production with sonication." *Undergraduate Research and Poster Symposium*, West Lafayette, IN.
19. Yi, X., M. Wang and **Z. Zhou** (2017). "Selective pressure of trace levels of antibiotics on phenotypic antibiotic resistance in urban surface waters and soils." *American Society for Microbiology 117th General Meeting*, New Orleans, LA.
20. Wang, M., M. Scott, M. Jacobs and **Z. Zhou** (2016). "Microbial source tracking of fecal bacteria in surface waters in Gunpower Creek watershed in Kentucky." *American Society for Microbiology 116th General Meeting*, Boston, MA.
21. Wang, M., M. S. Esfandarani, A. Whelton and **Z. Zhou** (2016). "Effects of water temperature and TOC leached from PEX pipes on the occurrence of bacteria in household water distribution systems." *American Society for Microbiology 116th General Meeting*, Boston, MA.
22. Nguyen, N.-A., Z. Sun and **Z. Zhou** (2016). "Efficient biofuel production through microbial electrosynthesis." *Undergraduate Research and Poster Symposium*, West Lafayette, IN.
23. Yi, X., C. Lim, J. L. E. Ong, M. Wang and **Z. Zhou** (2015). "Correlation between trace levels of antibiotics and phenotypic antibiotic resistance in urban environmental samples." *AEEESP Research and Education Conference*, New Haven, CT.
24. Wang, T. and **Z. Zhou** (2015). "Effects of selective pressure of erythromycin on the development of antibiotic resistance in *E. coli*." *American Society for Microbiology 115th General Meeting*, New Orleans, LA.
25. Padhiary, M., K. Walczak, N. Goyal, Z. Sun and **Z. Zhou** (2015). "Bioelectrocatalyzed reduction of CO<sub>2</sub> to higher alcohols and acids using mixed cultures of acetogens and acetate-utilizing clostridium strains." *AEEESP Research and Education Conference*, New Haven, CT.
26. Liu, Y., J. Xie, **Z. Zhou** and C. N. Ong (2015). "Electrochemical filter technology in water treatment." *8th International Conference on Materials for Advanced Technologies of the Materials Research Society of Singapore*, Singapore.
27. Liu, Y., Q. Xia, Y. Kong, J. Xie, C. N. Ong, C. Vecitis, S. A. Jame, T. Wu and **Z. Zhou** (2015). "Improvement of electrochemical wastewater treatment with carbon nanotube filters coupled with *in situ* generated H<sub>2</sub>O<sub>2</sub>." *AEEESP Research and Education Conference*, New Haven, CT.
28. Goyal, N., I. A. Karimi and **Z. Zhou** (2015). "Influence of nitrogen limitation on methanogenesis and growth in *M. maripaludis*." *13th International Conference on Carbon Dioxide Utilization*, Singapore.
29. Yi, X., Q. Wei and **Z. Zhou** (2015). "Occurrence of erythromycin resistance methylase (*erm*) genes driven by environmental antibiotics in urban soils." *Critical Zone Science, Sustainability and Services in a Changing World*, West Lafayette, IN.
30. Goyal, N., I. A. Karimi and **Z. Zhou** (2014). "Genome based metabolic flux analysis (MFA) of *Methanococcus maripaludis* for improved methane productivity " *American Institute of Chemical Engineers Annual Meeting*, Atlanta, GA.

31. Liu, Y. and **Z. Zhou** (2013). "Development of a highly efficient photocatalytic fuel cell for simultaneous wastewater treatment and energy recovery of emerging contaminants." *International Water Association Water Reuse Conference*, Windhoek, Namibia.
32. Jing, H., X. Kong and **Z. Zhou** (2013). "Diversity and antibiotic resistance of *Streptomyces* in tropical soils." *American Society for Microbiology 113th General Meeting*, Denver, CO.
33. Goyal, N., H. Widiastuti, I. A. Karimi and **Z. Zhou** (2013). "Genome-scale metabolic network reconstruction and *in silico* analysis of *Methanococcus maripaludis* " *23rd European Symposium on Computer Aided Process Engineering*, Lappeenranta, Finland.
34. Zhang, Y., X. Li, D. Snow, D. Parker and **Z. Zhou** (2013). "Intracellular and extracellular antimicrobial resistance genes in livestock manure management structures." *American Society for Microbiology 113th General Meeting*, Denver, CO.
35. Yi, X., W. Cheng, Q. Wei and **Z. Zhou** (2013). "Evaluation of antimicrobial resistance in urban environments in Singapore." *Microbial Ecology and Water Engineering Conference*, Ann Arbor, MI.
36. Cheng, W., X. Yi, Q. Wei and **Z. Zhou** (2013). "Correlation of antibiotic resistance and heavy metals in urban environmental soil samples." *American Society for Microbiology 113th General Meeting*, Denver, CO.
37. Yi, X., W. Cheng, Q. Wei and **Z. Zhou** (2013). "Correlation of metal concentrations and *erm* genes in urban soils." *American Society for Microbiology 113th General Meeting*, Denver, CO.
38. Wu, C., S. Nagarajan, H. Jing and **Z. Zhou** (2013). "Correlations of methanogenic activities and environmental parameters in tropical mangrove sediments." *American Society for Microbiology 113th General Meeting*, Denver, CO.
39. Wei, Q., X. Yi, W. Cheng and **Z. Zhou** (2013). "Occurrence and diversity of erythromycin resistance genes (*erm*) in urban soils." *American Society for Microbiology 113th General Meeting*, Denver, CO.
40. Wang, T., T. M. Lim, X. Yi and **Z. Zhou** (2013). "Microbial regrowth in soils under selective pressure of various levels of erythromycin." *American Society for Microbiology 113th General Meeting*, Denver, CO.
41. Padhiary, M., S. Nagarajan and **Z. Zhou** (2013). "Evaluation of efficiencies of microbial electrochemical systems (MXCs)." *American Society for Microbiology 113th General Meeting*, Denver, CO.
42. Nagarajan, S., C. Wu, H. Jing, S. K. Chou and **Z. Zhou** (2013). "Diversity and abundance of ammonia-oxidizing Archaea in Singapore mangrove sediments." *American Society for Microbiology 113th General Meeting*, Denver, CO.
43. Chua, S. L., S. Nagarajan, S. K. Chou, M. Padhiary and **Z. Zhou** (2013). "Evaluation of hydrogen production rates and uptake rates for microbial electrosynthesis of methane." *American Society for Microbiology 113th General Meeting*, Denver, CO.
44. Yi, X., C. Lin, J. L. E. Ong and **Z. Zhou** (2012). "Comparison of MLS<sub>B</sub> antibiotic resistance among Gram-positive and Gram-negative bacteria in urban environments." *American Society for Microbiology 112th General Meeting*, San Francisco, CA.
45. Yi, X., C. Lin, J. L. E. Ong and **Z. Zhou** (2012). "Environmental risk assessment of antimicrobial resistance in an urban environment." *21st KAIST-KU-NTU-NUS Symposium*, Kuala Lumpur, Malaysia.
46. Amir, M. S. B., J. Q. M. Auw, S. Nagarajan, X. Yi, C. Wu, S. Cao and **Z. Zhou** (2012). "Development of fluorescence *in situ* hybridization probes for the quantification of Archaea." *Singapore International Water Weeks 2012*, Singapore.
47. Amir, M. S. B., C. Wu, S. Nagarajan, S. Cao, X. Yi and **Z. Zhou** (2012). "Development of novel 16S rRNA oligonucleotide probes to quantify methanogens." *American Society for Microbiology 112th General Meeting*, San Francisco, CA.

48. Auw, J. Q. M., X. Yi and **Z. Zhou** (2012). "Comparison of double-labeled and single-labeled oligonucleotide probes for *in situ* quantification of *Streptomyces*." *American Society for Microbiology 112th General Meeting*, San Francisco, CA.
49. Kong, X., C. Lin, X. Yi, X. Y. C. Chew and **Z. Zhou** (2012). "Quantification of minimum inhibition concentration and resistance levels of antimicrobials among *Streptomyces* in environmental samples." *American Society for Microbiology 112th General Meeting*, San Francisco, CA.
50. Lin, C., X. Kong, X. Yi, J. L. E. Ong, X. Y. C. Chew, T. Wang and **Z. Zhou** (2012). "Correlation of anthropogenic pressure and antimicrobial resistance in urban environments." *American Society for Microbiology 112th General Meeting*, San Francisco, CA.
51. Lin, C., X. Yi, X. Kong, J. L. E. Ong, X. Y. C. Chew, T. Wang and **Z. Zhou** (2012). "Effects of human population densities on antimicrobial resistance in an urban environment." *Singapore International Water Weeks 2012*, Singapore.
52. Nagarajan, S., S. K. Chou, S. Cao, C. Wu and **Z. Zhou** (2012). "An updated comprehensive techno-economic analysis of algae biodiesel." *5th International Conference on Industrial Bioprocesses Taipei*, Taiwan.
53. Nagarajan, S., S. K. Chou, C. Wu, S. Cao and **Z. Zhou** (2012). "Biomethane production potentials by methanogens for microbial electrosynthesis." *American Society for Microbiology 112th General Meeting*, San Francisco, CA.
54. Chew, X. Y. C., X. Yi, J. L. E. Ong, T. Wang and **Z. Zhou** (2011). "Antimicrobial resistance among *Streptomyces* in natural soil samples." *American Society for Microbiology 111th General Meeting*, New Orleans, LA.
55. Yi, X., A. Christina and **Z. Zhou** (2011). "Evaluation and design of fluorescence *in situ* hybridization probes for the quantification of *Streptomyces*." *Singapore International Water Weeks 2011*, Singapore.
56. Christina, A., **Z. Zhou**, X. Yi and T. Wang (2011). "Development of a 16S rRNA-targeted probe for *Streptomyces*." *American Society for Microbiology 111th General Meeting*, New Orleans, LA.
57. Ong, J. L. E., X. Yi, X. Y. C. Chew, T. Wang and **Z. Zhou** (2011). "Evaluation of antimicrobial resistance at environmental samples in Singapore." *Singapore International Water Weeks 2011*, Singapore.
58. **Zhou, Z.** and X. W. Wong (2011). "Low impact development techniques for sustainable environmental and water resources management." *4th ASCE-EWRI International Perspective on Water Resources & the Environment*, Singapore.
59. **Zhou, Z.**, A. Salveson, K. Bourgeois and N. Fontaine (2010). "How different is different? The traps and pitfalls of applying statistics on system performance evaluation." *83rd Annual Water Environment Federation Technical Exhibition and Conference* New Orleans, LA.
60. **Zhou, Z.**, L. Raskin and J. Zilles (2010). "Optimization of cluster analysis for FISH image analysis." *American Society for Microbiology 110th General Meeting*, San Diego, CA.
61. Rauch-Williams, T., A. Salveson, B. Narayanan, **Z. Zhou**, J. Drewes, E. Dickenson, C. Higgins, K. Hyland, S. Snyder, B. Vanderford, D. Gerrity, M. Benotti, E. Snyder and D. Drury (2010). "Trace organic compounds removal during wastewater treatment - selection of a suite of indicator TOxC." *83rd Annual Water Environment Federation Technical Exhibition and Conference* New Orleans, LA.
62. **Zhou, Z.**, A. Salveson, B. Finney, R. Gearheart and M. Burke (2009). "Cost-effective technologies for small-scale water reuse." *California Water Environment Association Annual Conference*, Palm Springs, CA.
63. **Zhou, Z.**, A. Salveson, B. Finney and M. Burke (2009). "Cost-effective technologies for small-scale water reclamation plants (WRF 06-008)." *13th Annual Water Reuse & Desalination Research Conference*, Huntington Beach, CA.



64. **Zhou, Z.**, A. Salveson, J. Brown, J. Lopez, R. Cisterna, E. Vadiveloo and H. Breitenkam (2009). "Evaluation of endocrine disrupting potentials in membrane effluents using aquatic toxicity tests and fish bioassays." *American Water Works Association Research Symposium*, Austin, TX.
65. **Zhou, Z.**, A. Salveson, J. Brown, J. Lopez, R. Cisterna, E. Vadiveloo and H. Breitenkam (2009). "Advanced membrane treatment of wastewater and resulting aquatic impact of microconstituents in receiving waters." *California Water Environment Association Annual Conference*, Palm Springs, CA.
66. **Zhou, Z.**, A. Salveson, J. Brown, J. Lopez, R. Cisterna, E. Vadiveloo and H. Breitenkam (2009). "Treatment of endocrine disruptors and pharmaceuticals through membrane processes." *American Membrane Technology Association 2009 Conference & Exposition*, Austin, TX.
67. **Zhou, Z.**, A. Salveson, J. Brown, G. Jubly and S. Li (2009). "Pathogen and microconstituent removal using a non-biological treatment process." *WateReuse California Annual Conference*, San Francisco, CA.
68. Vadiveloo, E., R. Cisterna, R. Harris, H. Breitenkam, T. Greiner, P. Pitt, P. Vinci and **Z. Zhou** (2009). "Identifying the feasibility of canal recharge for indirect potable reuse: the Plantation experience." *Florida Water Resources Conference*, Palm Beach County, FL.
69. Vadiveloo, E., R. Cisterna, H. Breitenkam, J. Lopez, R. Harris, T. Greiner, P. Pitt, K. Alexander, R. Latimer, P. Vinci, **Z. Zhou** and A. Salveson (2009). "Identifying the feasibility of canal recharge for indirect potable reuse: the Plantation experience." *82nd Annual Water Environment Federation Technical Exhibition and Conference* Orlando, FL.
70. Alexander, K., R. Cisterna, E. Vadiveloo, A. Salveson and **Z. Zhou** (2009). "Quantifying emerging contaminant removal with advanced water treatment in Arizona and Florida." *13th Annual Water Reuse & Desalination Research Conference*, Huntington Beach, CA.
71. **Zhou, Z.**, A. Salveson, B. Finney, R. Gearheart and M. Burke (2009). "Cost-effective technologies for small-scale water reclamation plants." *82nd Annual Water Environment Federation Technical Exhibition and Conference* Orlando, FL.
72. **Zhou, Z.**, A. Salveson, J. Brown, J. Lopez, D. Sullivan, H. Breitenkam, R. Cisterna, E. Vadiveloo, R. Harris, S. Snyder, E. Snyder and J. Drewes (2009). "Aquatic toxicology and removal of microconstituents through membrane processes." *American Water Works Association 10th Biennial Membrane Technology Conference and Exposition*, Memphis, TN.
73. **Zhou, Z.**, A. Salveson, B. Finney, R. Gearheart and M. Burke (2009). "Cost capacity analysis and WAWTTAR model for small-scale water reuse." *24th Annual WateReuse Symposium*, Seattle, WA.
74. **Zhou, Z.**, A. Salveson, J. Brown and J. Lopez (2008). "Water quality through advanced wastewater treatment (AWT) facilities and recharge modeling (WateReuse Research Foundation 06-019)." *California Section Annual Conference*, Newport Beach, CA.
75. Poust, S., A. Salveson, **Z. Zhou**, J. Lopez, D. Sullivan, H. Breitenkam, R. Cisterna, E. Vadiveloo, R. Harris, J. Brown and S. Jain (2008). "Trace organics and advanced wastewater treatment plants: removal, transport, and toxicology." *Florida Water Resources Conference*, Tampa, FL.
76. Poust, S., A. Salveson, **Z. Zhou**, J. Lopez, D. Sullivan, H. Breitenkam, R. Cisterna, E. Vadiveloo, R. Harris, J. Brown, S. Jain, M. Loinaz and H. Joseph (2008). "Trace organics contaminant monitoring: removal, fate and transport." *Water Quality Technology Conference and Exposition*, Cincinnati, OH.
77. **Zhou, Z.**, A. Salveson, J. Brown, J. Lopez, R. Cisterna, E. Vadiveloo and H. Breitenkam (2008). "Water quality through advanced wastewater treatment (AWT) facilities and recharge modeling (WaterReuse Research Foundation 06-019)." *23rd Annual WateReuse Symposium*, Dallas, TX.
78. **Zhou, Z.**, A. Salveson, J. Brown, J. Lopez, D. Sullivan, H. Breitenkam, R. Cisterna, V. Enrique, R. Harris, S. Snyder, E. Snyder and J. Drewes (2008). "Removal of microconstituents in an

- advanced water treatment facility and evaluation of potential water quality impact of discharged effluent to surface canals and groundwater." *81st Annual Water Environment Federation Technical Exhibition and Conference*, Chicago, IL.
79. **Zhou, Z.**, A. Salveson, B. Finney, R. Gearheart and M. Burke (2008). "Low-cost treatment technologies for small-scale water reclamation plants (WateReuse Foundation 06-008)." *23rd Annual WateReuse Symposium*, Dallas, TX.
  80. Greeley, T., **Z. Zhou** and J. Zilles (2007). "Comparing abundance of *Candidatus Accumulibacter phosphatis* and performance in a full-scale wastewater treatment plant's transition to enhanced biological phosphorus removal." *American Society for Microbiology 107th General Meeting*, Toronto, Ontario, Canada.
  81. **Zhou, Z.**, M. Robert, L. Raskin and J. Zilles (2007). "Cumulative effects of land application of manure on levels of antimicrobials and antimicrobial resistant bacteria in soils." *American Society for Microbiology 107th General Meeting*, Toronto, Ontario, Canada.
  82. **Zhou, Z.**, M. Robert, L. Raskin and J. Zilles (2006). "Quantification of MLS<sub>B</sub> antimicrobial resistance in soil amended with swine wastes." *American Society for Microbiology 106th General Meeting*, Orlando, FL.
  83. **Zhou, Z.**, M. N. Pons, L. Raskin and J. Zilles (2005). "Automated image analysis for quantitative fluorescence *in situ* hybridization in environmental samples." *American Society for Microbiology 105th General Meeting*, Atlanta, GA.
  84. **Zhou, Z.**, A. Jindal, M. Robert, L. Raskin and J. Zilles (2005). "MLS<sub>B</sub> resistance levels vary greatly for different populations in swine waste samples." *International Union of Microbiological Societies Meeting*, San Francisco, CA.
  85. **Zhou, Z.**, A. Jindal, M. Wagoner, L. Raskin and J. Zilles (2004). "FISH analysis of MLS<sub>B</sub> antimicrobial resistance in swine waste." *American Society for Microbiology 104th General Meeting*, New Orleans, LA.
  86. **Zhou, Z.** and L. Yang (2001). "Research on biological regeneration of organoclay." *5th National Environmental Microbiological Symposium of Chinese Society of Microbiology*, Nanjing, Jiangsu, China.
  87. Yang, L., Y. Gu and **Z. Zhou** (2001). "Investigation of high efficiency benzene degrading microbe." *5th National Environmental Microbiological Symposium of Chinese Society of Microbiology*, Nanjing, Jiangsu, China.
  88. **Zhou, Z.** and M. Zhang (1999). "Use of protozoan (*Tetrahymena pyriformis*) bioassay to evaluate the toxicity and mutation of pesticides." *Biennial Conference of Nanjing Society of Microbiology*, Nanjing, Jiangsu, China.

### **CONSULTING REPORTS**

1. Salveson, A., **Z. Zhou**, B. Finney, M. Burke, and J.C. Ly (2010). "Low-cost technologies for small-scale water reclamation plants." *WateReuse Research Foundation*. Alexandria, VA, USA.
2. Salveson, A., J. Brown, and **Z. Zhou** (2010). "Monitoring microconstituents in an advanced wastewater treatment (AWT) facility and modeling discharge of reclaimed water to surface canals for indirect potable use." *WateReuse Research Foundation*. Alexandria, VA, USA.

### **INVITED PRESENTATIONS**

- 11/2017 "Water", Guest lecture in ENGR 103 (Global Engineering Practice & Design), Purdue University, West Lafayette, IN
- 09/2017 "Electrochemical Carbon Nanotube Filters for Water and Wastewater Treatment", The 20th Annual Indiana Pollution Prevention Conference and Trade Show, Indianapolis, IN

- 11/2016 "Water", Guest lecture in ENGR 103 (Global Engineering Practice & Design), Purdue University, West Lafayette, IN
- 10/2016 "Antibiotic Resistance in urban and Natural Environments", Department of Biological Sciences, Purdue University, Calumet, IN
- 06/2016 "Antibiotic Resistance in Urban and Natural Environments", International Symposium of One Health: the Role of Microbe, Boston, MA
- 03/2016 "Antibiotic Resistance", Environmental Science Club, Purdue University, West Lafayette, IN
- 09/2014 "Antimicrobials and Antimicrobial Resistance in Natural and Urban Environments" in Purdue Water Community Brown Bag Lunch Seminar Series, West Lafayette, IN
- 08/2013 "Renewable Methane Production from Carbon Dioxide and Water in a Microbial Electrosynthesis Cell" in technical session "Sustainable Energy from Biomass and Waste Water", 15th Asian Chemical Congress, Singapore
- 06/2012 "Electrode-driven anaerobic respiration for improved biofuel production", City University of Hong Kong–NUS Joint Seminar, Singapore
- 04/2012 "Development of Molecular Biology Techniques for the Risk Assessment of Antibiotic Resistance in Environmental Samples", Low-Carbon Forum of Urban and Regional Development, Peking University, Shenzhen, China
- 02/2012 "Evaluation of Antimicrobial Resistance at Environmental Samples", NUS–Peking University Scientific Workshop, Singapore
- 02/2012 "Development of Molecular Microbiology Tools for Water Quality Monitoring", Singapore Ministry of Home Affairs–NUS Focus Group Meeting, Singapore
- 05/2011 "Microbial Conversion of CO<sub>2</sub> to Biofuel without Biomass Processing", NUS Industry Liaison Office–Siemens Joint Seminar, Singapore
- 11/2011 "Microbial Conversion of CO<sub>2</sub> to Biofuel", Singapore Economic Development Board – NUS Meeting on CO<sub>2</sub> Conversion and Utilization Program, Singapore
- 06/2010 "Environmental Sustainability: A Microbiologist's Perspective", University of Michigan–NUS Joint Seminar, Singapore
- 06/2010 "Environmental Risk Assessment of Macrolide-lincosamide-streptogramin B Antimicrobial Resistance", Michigan State University–NUS–Singapore Public Utilities Board Joint Seminar, Singapore
- 03/2010 "Advanced Membrane Treatment of Wastewater and Resulting Aquatic Impact of Microconstituents in Receiving Waters", Singapore Public Utilities Board, Singapore

## **RESEARCH PERSONNEL HOSTED OR SUPERVISED**

(a total of 84 persons)

### **Visiting Professors Hosted (4)**

- 2018–present Associate Professor Lei Chen, "Removal of pharmaceuticals and personal care products (PPCPs) in the electrochemical carbon nanomaterial filter", Nanjing Forestry University, China
- 2017–present Associate Professor Bolin Li, "Development of Energy-efficient Wastewater Treatment Technologies", Wuhan University of Technology, China
- 2015–2016 Associate Professor Cheng Liu, "Development of Nanomaterials for Wastewater Treatment", Hohai University, China
- 2014–2015 Associate Professor Shaohua Lin, "Development of Nanomaterials for Wastewater Treatment", Nanjing Forestry University, China

**Postdoc Research Fellows (5)**

- 2013–2014 Dr. Laurence Glass-Haller, "Rapid and Accurate Quantification of Antibiotic Resistant Bacteria and Quantitative Risk Assessment for Water Security", NUS
- 2013–2014 Dr. Thai Hoang Le, "Rapid and Accurate Quantification of Antibiotic Resistant Bacteria and Quantitative Risk Assessment for Water Security", NUS
- 2013–2014 Dr. Yanbiao Liu, "Development of Electrochemical Carbon Nanotube Filters to Remove Off-flavor Compounds", NUS
- 2012–2013 Dr. Hongmei Jing, "Photosynthesis through Electrode-driven Anaerobic Respiration", NUS
- 2011 Dr. Yiling Koh, "Photosynthesis through Electrode-driven Anaerobic Respiration", NUS

**Research Engineers (3)**

- 2014 Tianren Wwang, "Rapid and Accurate Quantification of Antibiotic Resistant Bacteria and Quantitative Risk Assessment for Water Security", NUS
- 2013–2014 Vaishnavi Sivachidambaram, "Rapid and Accurate Quantification of Antibiotic Resistant Bacteria and Quantitative Risk Assessment for Water Security", NUS
- 2011–2013 Sanjay Nagarajan, "Photoelectrochemical Water Splitting for the Production of Value-added Chemicals", NUS

**Ph.D. Students as Main Supervisors (5)**

- 2016–present Ejike Akobundu Ken-Oporum, "Fate and Transport of Antibiotic Resistant Bacteria in Subsurface Environments", Purdue University
- 2014–present Zhe Sun, "Enhanced Biofuel Production from Carbon Dioxide", Purdue University
- 2014–present Mian Wang, "Development and Persistence of Antibiotic Resistance", Purdue University
- 2012–present Mrutyunjay Padhiary, "Electrosynthesis of Biofuels from Carbon Dioxide", NUS
- 2010–2015 Xinzhu Yi, "Evaluation of Antibiotic Resistance at Urban Environments", NUS

**Ph.D. Students as Co-Supervisors (3)**

- 2011–2016 Chen Wu, "Molecular Microbiology for Improved Biofuel Production", NUS (as main supervisor till May 2014 and co-supervisor after June 2014)
- 2011–2016 Nishu Goyal, "Biochemical Conversion of Carbon Dioxide", NUS (main supervisor is Professor Iftexhar A. KARIMI)
- 2012–2014 Shivashkar Singh, "Microfluidic Devices for Biofilm Studies", Oxford University (main supervisor is Dr. Nicholas HANKINS)

**Master Students (7)**

- 2018–present Yi Ji, "Electrochemical Removal of Antibiotics", Purdue University
- 2016–present Ran Chen, "Antibiotic Resistance in Environmental Samples", Purdue University
- 2015–2017 Sol Park, "DNA Removal in Carbon Nano-tube Filters", Purdue University
- 2013–2014 Qing Xia, "Phenol Removal with Electrochemical Carbon Nanotube Filters Coupled with *in situ* Generated H<sub>2</sub>O<sub>2</sub>", NUS
- 2013–2014 Xiao Jin, "Research on Electrochemical Carbon Nanotube Filters for Bacterial and DNA Removal", NUS
- 2012–2014 Tianren Wang, "Evaluation of Microbial Regrowth after Treatment of Disinfectants or Antimicrobials", NUS

2011–2013 Subhashini Kashinath, "Utilization of Landfill Gases as Renewable Source of Energy in India", NUS

### **Graduate Independent Study Module Student (2)**

2016–2017 Wei Liu, "Electrochemical Water Treatment", Purdue University

2015–2017 Huanqi He, "Electron-Fenton Treatment of Chemical Contaminants", Purdue University

### **Undergraduate Final Year Project (Senior Thesis) Students (15)**

2013–2014 Yi Kong, "Development of Electrochemical Carbon Nanotube Filters to Remove Off-flavor Compounds", NUS

2013–2014 Dustin Juen Hon Lee, "Development of Electrochemical Carbon Nanotube Filters to Remove Off-flavor Compounds", NUS

2013–2014 Vidushini Siva, "Optimization Methane Production in a Microbial Electrolysis Cell", NUS

2012–2013 Li Jie Hsien, "Optimization of Hydrogen Production to Support Methanogenesis in a Microbial Electrolysis Cell", NUS

2012–2013 Shang Long Chua, "Theoretical and Experimental Evaluations of Methane Production in a Microbial Electrolysis Cell", NUS

2012–2013 Wen Chao Cheng, "Evaluation of Antimicrobial Resistance at Environmental Samples", NUS

2011–2012 Jin Quan Max Auw, "Development of Oligonucleotide Probes for *in situ* Quantification of *Streptomyces*", NUS

2011–2012 Yuanyan Du, "Studies on 2-methylisoborneol and Geosmin Producing *Actinomycetes* in Water Catchment Area", NUS

2011–2012 Xieheng Kong, "Antimicrobial Resistance of *Streptomyces* at Environmental Samples in Singapore", NUS

2011–2012 Chenghui Lin, "Evaluation of MLS<sub>B</sub> Antimicrobial Resistance at Environmental Samples", NUS

2011–2012 Mohammad Sairi B Amir, "Development of FISH Probes to Quantify Methanogens", NUS

2011–2012 Tianren Wang, "Evaluation of Microbial Regrowth after Treatment of Disinfectants or Antimicrobials", NUS

2010–2011 Jie Li Eugene Ong, "Evaluation of MLS<sub>B</sub> Antimicrobial Resistance at Environmental Samples", NUS

2010–2011 Xin Yu Cynthia Chew, "Evaluation of Antibiotic-producing *Streptomyces* from Soil Samples", NUS

2010–2011 Agnes Christina, "Quantification of *Streptomyces* using Fluorescence *in situ* Hybridization", NUS

### **Purdue Summer Undergraduate Research Fellowship (SURF) Students (2)**

2017 Benjamin M Stryker, "Electrochemical Removal of Metals using Carbon Nanotube Filters", Purdue University

2015 Nathaniel Kallmyer, "Resource Recovery and Reuse from Human Urine ", Purdue University (Co-supervised with Dr. Ernest Blatchley)

### **U.S. Military Academy (West Point) Cadet's/Midshipmen Summer Program Students (2)**

2016 Joshua Hulkan, "Efficient Production of Biofuels from Carbon Dioxide"

2016 Peter Zhu, "Efficient Production of Biofuels from Carbon Dioxide"

#### **Undergraduate Research Assistants (6)**

2014 Wei Liang Tay, "Design of FISH Probes to Quantify Linezolid Resistance", NUS  
 2012–2013 Qing Wei, "Genetic Diversity of Erythromycin Resistance Genes in Soils in Singapore", NUS  
 2011–2012 Shenyan Cao, "Biodiesel Production of Microalgae", NUS  
 2010–2011 Tianren Wand, "Evaluation of MLS<sub>B</sub> Antimicrobial Resistance at Environmental Samples", NUS  
 2006–2007 Maria Quinones, "Isolation of Streptomyces from Manure and Soil Samples", University of Illinois at Urbana-Champaign  
 2005–2006 Joanna Kepler, "Streptomyces and the Production of Macrolide-lincosamide-streptogramin B Antimicrobials in Organic Swine Farm Manure", University of Illinois at Urbana-Champaign

#### **Final Year Industry Project Students (5)**

2013 Jess Junhan Loong, "Testing of Linezolid Resistance with FISH probes", Republic Polytechnic, Singapore  
 2013 Xin Hui Soh, "Occurrence of Antibiotic Resistance Genes in Environmental Samples", Republic Polytechnic, Singapore  
 2013 Yan Li, "Microbial regrowth after Exposure to Erythromycin", Republic Polytechnic, Singapore  
 2013 Chang Gao, "Testing of PKS Primers with Conventional PCR", Republic Polytechnic, Singapore  
 2013 Abizer Imran, "Optimization of Hybridization Conditions for PKS Primers", Republic Polytechnic, Singapore

#### **Independent Work Program Students for U.S. Department of Energy Solar Decathlon (4)**

2012–2013 Xun Long Kew, "Development of a Grey Water Filtration System", NUS  
 2012–2013 Jason Hong Yang Tan, "Development of a Grey Water Filtration System", NUS  
 2012–2013 Miao He, "Development of a Grey Water Filtration System", NUS  
 2012–2013 Minghui Teo, "Development of a Grey Water Filtration System", NUS

#### **Undergraduate Research Opportunities Program (UROP) Student (1)**

2011–2012 Shenyan Cao, "Cost Analysis of Algae-based Biofuel", NUS

#### **Industrial Attachment Program Students (4)**

2013 Elizabeth Ying Ping Wong, NUS  
 2013 Erik Christianto, NUS  
 2013 Hoang Linh Bui, NUS  
 2013 Khittisun Chaemdikawiwat, NUS

#### **Undergraduate Independent Study Module Students (16)**

2017–present Benjamin M Stryker, "Electrochemical Water Treatment", Purdue University  
 2017–present Shujun Zhou, "Electrochemical Water Treatment", Purdue University  
 2017–present Songhao Wu, "Efficient Biofuel Production", Purdue University  
 2016–2017 Tianlong Sun, "Microbial Electrosynthesis for Biofuel Production", Purdue University  
 2016–2017 Jingfei Ding, "Antibiotic Resistant Bacteria in the Environment", Purdue University

2015–2017	Luna Nguyen, "Efficient Production of Biofuels from Carbon Dioxide", Purdue University
2015–2016	Mingyu Zhang, "Development of CNT Electrochemical Filter for Water Purification", Purdue University
2015–2016	Leslie Yoo, "Enhanced Biofuel Production from Carbon Dioxide", Purdue University
2014–2015	Emily Traxler, "Development and Persistence of Antibiotic Resistance", Purdue University
2014–2015	Neil Perry, "Enhanced Biofuel Production from Carbon Dioxide", Purdue University
2014–2015	Haitian Liu, "Enhanced Biofuel Production from Carbon Dioxide", Purdue University
2014–2015	Ryan N Loveless, "Development of Graphene Electrochemical Filter for Water Purification", Purdue University
2014–2015	Yvonne Shi, "Development of Graphene Electrochemical Filter for Water Purification", Purdue University
2014–2015	Heyi Wand, "Development of Graphene Electrochemical Filter for Water Purification", Purdue University
2014–2015	Maithilee Das, "Enhanced Biofuel Production from Carbon Dioxide", Purdue University
2011–2012	Zhe Zhang, "Bioremediation in Marine Oil Spill", NUS

### **THESIS EXAMINATION AND DEFENSE COMMITTEE**

(a total of 76 committees)

#### **Ph.D. Dissertation Examination Committee / Oral Defense Committee (19)**

2018	Yi-Ju Wang, Department of Horticulture & Landscape Architecture, Purdue
2018	Sarah E. Daly, Department of Agricultural & Biological Engineering, Purdue
2017	Raymond RedCorn, Department of Agricultural & Biological Engineering, Purdue
2014	Akm Khorshed Alam, Department of Civil & Environmental Engineering, NUS
2014	Chang Ding, Department of Civil & Environmental Engineering, NUS
2014	Yujia Shen, Department of Civil & Environmental Engineering, NUS
2013	Nandar Kyaw, Department of Civil & Environmental Engineering, NUS
2013	Siok Ling Low, Department of Civil & Environmental Engineering, NUS
2013	Bijing Cai, Department of Civil & Environmental Engineering, NUS
2013	Yue Ma, Department of Civil & Environmental Engineering, NUS
2012	Shruti Pavagadhi, Department of Civil & Environmental Engineering, NUS
2012	Venketeswari Parida, Department of Civil & Environmental Engineering, NUS
2012	Thepsuparungsikul Nichanan, Department of Civil & Environmental Engineering, NUS
2012	Xiaoying Zhu, Department of Civil & Environmental Engineering, NUS
2012	Caian Fan, Department of Civil & Environmental Engineering, NUS
2012	Betha Raghu, Department of Civil & Environmental Engineering, NUS
2011	Thi Thai Yen Doan, Department of Civil & Environmental Engineering, NUS
2011	Jing Yu, Department of Civil & Environmental Engineering, NUS
2010	Rajesh Kumar Balasubramanian, Department of Civil & Environmental Engineering, NUS

#### **Ph.D. Oral Qualifying Examination Committee (27)**

2014	Yang Yu, Department of Civil & Environmental Engineering, NUS
2013	Fengxue Xing, Department of Civil & Environmental Engineering, NUS

2013	Yu Yan, Department of Civil & Environmental Engineering, NUS
2013	Mohammad Sherafatmand, Department of Civil & Environmental Engineering, NUS
2013	Jothinathan Lakshmi, Department of Civil & Environmental Engineering, NUS
2013	Behdad Chehrenegar, Department of Civil & Environmental Engineering, NUS
2013	Wei Hong Fan, Department of Civil & Environmental Engineering, NUS
2013	Genevieve Gabrielle Rose Vergara, Department of Civil & Environmental Engineering, NUS
2013	Yun Wang, Department of Civil & Environmental Engineering, NUS
2013	Mahsa Foolad, Department of Civil & Environmental Engineering, NUS
2012	Siyao Zhao, Department of Civil & Environmental Engineering, NUS
2012	Amalraj Appavoo Initha, Department of Civil & Environmental Engineering, NUS
2012	Krishnan Padmaja, Department of Civil & Environmental Engineering, NUS
2012	Chenxi Sun, Department of Civil & Environmental Engineering, NUS
2012	Jinzhi Lim, Department of Civil & Environmental Engineering, NUS
2012	Xueqing Shi, Department of Civil & Environmental Engineering, NUS
2012	Kai Yin Melvin Tan, Department of Civil & Environmental Engineering, NUS
2011	Nan Li, Department of Civil & Environmental Engineering, NUS
2011	Yuen Sean Lam, Department of Civil & Environmental Engineering, NUS
2011	Pei Xiong, Department of Civil & Environmental Engineering, NUS
2011	Yu Ling, Department of Civil & Environmental Engineering, NUS
2011	Yujia Shen, Department of Civil & Environmental Engineering, NUS
2011	Vasanth Natarajan, Department of Civil & Environmental Engineering, NUS
2010	Akm Khorshed Alam, Department of Civil & Environmental Engineering, NUS
2010	Yue Ma, Department of Civil & Environmental Engineering, NUS
2010	Chang Ding, Department of Civil & Environmental Engineering, NUS
2010	Bijing Cai, Department of Civil & Environmental Engineering, NUS

#### **Ph.D. Comprehensive Qualifying Examination Committee (15)**

2013	Yang Yu, Department of Civil & Environmental Engineering, NUS
2013	Shamik Chowdhury, Department of Civil & Environmental Engineering, NUS
2013	Le Wand, Department of Civil & Environmental Engineering, NUS
2013	Tze Ying Wong, Department of Civil & Environmental Engineering, NUS
2012	Dandan Zhao, Department of Civil & Environmental Engineering, NUS
2012	Fengxue Xing, Department of Civil & Environmental Engineering, NUS
2012	Daphane Tan, Department of Civil & Environmental Engineering, NUS
2012	Genevieve Gabrielle Rose Vergara, Department of Civil & Environmental Engineering, NUS
2012	Yu Yan, Department of Civil & Environmental Engineering, NUS
2011	Yun Wand, Department of Civil & Environmental Engineering, NUS
2011	Siyao Zhao, Department of Civil & Environmental Engineering, NUS
2011	Yong Bin Phua, Department of Civil & Environmental Engineering, NUS
2011	Govindaswamy Balaji, Department of Civil & Environmental Engineering, NUS
2010	Yujia Shen, Department of Civil & Environmental Engineering, NUS
2010	Pei Xiong, Department of Civil & Environmental Engineering, NUS

#### **M.S. Thesis Examination Committee (10)**

2018	Tianqi Wang, School of Civil Engineering, Purdue
2017	Gaoping Cao, Division of Environmental and Ecological Engineering, Purdue



2014	Ling Ding, School of Civil Engineering, Purdue
2014	Zihan Wand, Department of Civil & Environmental Engineering, NUS
2012	Marc-Antoine Metais, Department of Civil & Environmental Engineering, NUS
2011	Zi Tan, Department of Civil & Environmental Engineering, NUS
2011	Junyou Zhang, Department of Civil & Environmental Engineering, NUS
2011	Pak Hang Martin Fung, Department of Civil & Environmental Engineering, NUS
2011	Xue Feng, Department of Civil & Environmental Engineering, NUS
2010	Sowpati Jayaker, Department of Civil & Environmental Engineering, NUS

### **Master Student Advisory Committee (non-thesis) (5)**

2018	Latha Bhat, School of Civil Engineering, Purdue
2017–present	Sacheev Mandhle, School of Civil Engineering, Purdue
2016–2018	Jesse Hamm, Division of Environmental and Ecological Engineering, Purdue
2016–2018	Yifan Tong, Division of Environmental and Ecological Engineering, Purdue
2015–2017	Huanqi He, Division of Environmental and Ecological Engineering, Purdue

### **TEACHING EXPERIENCE**

2018–present	<b>Lecturer</b> , "Membranes for water treatment" (graduate), Division of Environmental and Ecological Engineering, Purdue University
2016–present	<b>Co-Lecturer</b> , "Senior Design" (undergraduate), Division of Environmental and Ecological Engineering, Purdue University
2015–present	<b>Lecturer</b> , "Environmental Biotechnology" (graduate), School of Civil Engineering, Purdue University
2015–present	<b>Lecturer</b> , "Wastewater Treatment Processes" (undergraduate), School of Civil Engineering and Division of Environmental and Ecological Engineering, Purdue University
2016–2017	<b>Co-Lecturer</b> , "Direct Potabilization" (graduate), Division of Environmental and Ecological Engineering, Purdue University
2014	<b>Lecturer</b> , "Water and Wastewater Treatment" (undergraduate), School of Civil Engineering and Division of Environmental and Ecological Engineering, Purdue University
2012–2014	<b>Lecturer</b> , "Topics in Environmental Biotechnology" (graduate), NUS
2011–2014	<b>Lecturer</b> , "Wastewater Microbiology" (undergraduate), NUS
2010–2014	<b>Co-lecturer</b> , "Environmental Engineering Principles" (graduate), NUS
2010–2014	<b>Coordinator and Resource Person</b> on Biological Processes, "Design Project" (undergraduate), NUS
2010–2012	<b>Lecturer</b> , "Environmental Microbiological Principles" (undergraduate), NUS
2007	<b>Teaching Assistant</b> , "Engineering Risk and Uncertainty" (undergraduate), University of Illinois at Urbana-Champaign
2006	<b>Teaching Assistant</b> , "Environmental Engineering" (undergraduate), University of Illinois at Urbana-Champaign
2006	<b>Guest Lecturer</b> , "Biological Principles of Environmental Engineering Processes" (graduate), University of Illinois at Urbana-Champaign
2005	<b>Co-lecturer</b> , "Fluorescence <i>in situ</i> hybridization workshop", University of Illinois at Urbana-Champaign

**SERVICE TO DEPARTMENT/UNIVERSITY**

- 2018–present **Academics Committee Member**, Division of Environmental and Ecological Engineering, Purdue University
- 2016–2018 **Space/Facilities/Safety Committee Member**, Division of Environmental and Ecological Engineering, Purdue University
- 2017 **Reviewer** for Ismail Travel Awards, Graduate School, Purdue University
- 2017 **Internal Review Committee Member**, School of Civil Engineering, Purdue University
- 2017 **Reviewer** for design projects in Engineering Projects in Community Service (EPICS), Purdue University
- 2016 **Graduate School Fellowship Reviewer**, Purdue University
- 2016 **Reviewer** for candidates from Environmental and Ecological Engineering, Future Faculty Member Workshop, Purdue University
- 2015–2017 **Judge** for Office of Interdisciplinary Graduate Programs (OIGP) Spring Reception, Purdue University Graduate School, Purdue University
- 2015–2016 **Academics Committee Member**, Division of Environmental and Ecological Engineering, Purdue University
- 2015 **Reviewer** for candidates for Civil Engineering, Future Faculty Member Workshop, Purdue University
- 2014–2016 **Executive Committee Member**, Purdue Water Community, Purdue University
- 2014–2015 **Engagement Committee Member**, Division of Environmental and Ecological Engineering, Purdue University
- 2014–2015 **Seminar Committee Member**, Division of Environmental and Ecological Engineering, Purdue University
- 2014–2015 **Environmental and Ecological Engineering Faculty Search Committee Member**, Purdue Water Committee, Purdue University
- 2013–2014 **Student Affairs/Alumni Committee Member**, Department of Civil and Environmental Engineering, NUS
- 2013–2014 **Board of Examiners Committee Member**, Department of Civil and Environmental Engineering, NUS
- 2012–2013 **Engineering Accreditation Board Committee Member** for B. Eng. (Environmental) Accreditation, Department of Civil and Environmental Engineering, NUS
- 2012 **Chairperson** on sessions “Efficient Systems for Safe Drinking Water, Integrated Technology Based on Reduce, Reuse and Recycle (3R)”, and “River Ecological Rehabilitation”, NUS – Peking University Scientific Workshop
- 2012, 2013 **Interviewer** for M. Eng. Student Admission Committee, Department of Civil and Environmental Engineering, NUS
- 2011–2014 **Curriculum Committee Member**, Department of Civil and Environmental Engineering, NUS
- 2011, 2013 **Interviewer** for Ph.D. Student Admission Committee, Department of Civil and Environmental Engineering, NUS
- 2011, 2012 **Interviewer** for Student Exchange Program Selection Committee, Department of Civil and Environmental Engineering, NUS
- 2011 **Moderator** and **Track Lead** for Energy Efficiency in Industrial Processes in NUS–Industry Energy Efficiency Workshop, Energy Studies Institute of NUS
- 2010 **Judge**, Environmental Science and Engineering Poster Symposium, NUS

- 2004–2006 **Volunteer**, Graduate student recruiting committee, Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign  
 2003–2006 **President**, Gamma Alpha Graduate Society, Urbana, IL

### **SERVICE TO PROFESSION**

- 2017–present **Project Advisory Board Member** for project “Mitigating the Risk of Antibiotic Resistance at Critical Control Points in the Beef Cattle Manure Management Systems”, United States Department of Agriculture  
 2012–present **Academic Editor**, PLOS ONE, San Francisco, CA, U.S.  
 2018 **Proposal Reviewer**, French National Research Agency (ANR) / Research Grants Council of Hong Kong Joint Research Scheme (JRS)  
 2016–2018 **Proposal Reviewer**, Research Grants Council of Hong Kong  
 2017, 2015 **Proposal Review Panelist**, United States National Science Foundation  
 2017, 2013 **Proposal Reviewer**, Ministry of Education and Science of the Russian Federation  
 2018, 2016 **Graduate Research Fellowships Program (GRFP) Panelist**, United States National Science Foundation  
 2016 **Proposal Reviewer**, Indiana Water Resources Research 104B Grant  
 2014 **Reviewer**, AEESP Student Services Committee Academic Job Application Review  
 2013 **Judge**, Applied Materials Clean Tech Competition, Center for Science Teaching and Learning  
 2012–2014 **Honorary Auditor**, BioEnergy Society of Singapore  
 2012–2013 **Workgroup Member** to develop Guidelines for Treated Greywater Quality, Singapore Public Utilities Board  
 2008–2012 **Project Advisory Committee Member** for project “Microbial Ecology of Drinking Water Distribution Systems”, U.S. Water Research Foundation (formerly AwwaRF)  
 2013 **Proposal Reviewer**, Singapore National Research Foundation  
 2012, 2014 **Judge**, Singapore Science & Engineering Fair, organized by Singapore Ministry of Education, the Agency for Science, Technology & Research and the Science Centre Singapore  
 2010 **Judge**, Singapore Science Mentorship Program Youth Science Conference  
 2009–2010 **Board Director** and **Membership Chair**, Chinese American Environmental Professionals Association, Oakland, California, U.S.

### **JOURNAL REVIEWER**

(a total of 69 times for 29 journals)

- Applied Energy (2)  
 Applied Microbiology and Biotechnology (2)  
 Biochemical Engineering Journal (2)  
 Bioresource Technology (2)  
 Biotechnology for Biofuels (2)  
 Chemical Engineering Journal (2)  
 Critical Reviews in Environmental Science and Technology (2)  
 Desalination and Water Treatment (1)  
 Environmental Engineering Science (4)  
 Environment International (1)  
 Environmental Science & Technology (11)

Environmental Science & Technology Letters (1)  
Environmental Science: Nano (1)  
Environmental Science: Processes and Impacts (2)  
Environmental Science: Water Research & Technology (2)  
Environmental Technology (2)  
International Biodeterioration & Biodegradation (3)  
International Journal of Chemical Engineering (1)  
International Journal of Environmental Science and Technology (3)  
Journal of Materials Chemistry A (1)  
Journal of Medical Microbiology (1)  
Microbial Cell Factories (1)  
PLOS ONE (1)  
Renewable Energy (1)  
RSC Advances (4)  
Science of the Total Environment (6)  
Scientific Reports (3)  
Waste and Biomass Valorization (1)  
Water Research (4)

### **PROFESSIONAL MEMBERSHIPS**

2016–present Communication Officer and News Letter Editor, The Overseas Chinese Society for Microbiology (Sino-Micro)  
2011–present Member, American Society of Civil Engineers (ASCE)  
2011–present Member, International Water Association (IWA)  
2011–present Member, Association of Environmental Engineering and Science Professors (AEESP)  
2004–present Member, American Society for Microbiology (ASM)  
2000–present Lifetime Member, Chinese Society of Microbiology (CSM)  
2012–2014 Member, BioEnergy Society of Singapore (BESS)  
2007–2010 Board Director and Membership Chair, Chinese American Environmental Professionals Association (CAEPA)  
2008–2010 Member, American Water Works Association (AWWA)  
2007–2010 Member, Water Environment Federation (WEF)