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Molecular Biosciences and Bioengineering, University of Hawai'i at Mānoa (UHM)
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EDUCATION AND ACADEMIC TRAINING

- Post-doctoral Research Associate, Department of Civil, Construction and Environmental Engineering, **Iowa State University**, Ames, IA; Mar 2002- Feb 2004.
Major: Environmental Biotechnology/Resource Recovery/Bioenergy
- Doctor of Philosophy, **The Hong Kong University of Science and Technology**, Hong Kong; Feb 1998 - Feb 2002.
Major: Environmental Engineering (Environmental Biotechnology)
- Master of Engineering (M. Eng.), **Asian Institute of Technology**, Bangkok, Thailand; Jan 1996-Aug 1997.
Major: Environmental Engineering (Water/Wastewater Engineering)
- Bachelor of Engineering (*First class with honors*), **Malaviya National Institute of Technology** (formerly, Malaviya Regional Engineering College), Jaipur, India; Sep 1988 - Jan 1993.
Major: Civil Engineering

AWARDS

- CTAHR Dean's Award for Excellence in Research, College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa (2016). (*Awarded to one best researcher from the college annually*)

- Award to Advisee: Brent Wakizawa - College of Tropical Agriculture and Human Resources Symposium, MBBE Best Undergraduate Oral Presentation Award in (2017).
- Award to Advisees, Sreelakshmi Kutty and Ariana Kim (High School Intern, St. Andrew's Priory High School, Honolulu, HI), Second place in environment category at the Intel International Science and Engineering Fair (ISEF), Phoenix, Arizona (May 8-13, 2016).
- Award to Advisees, Sreelakshmi Kutty and Ariana Kim (High School Intern, St. Andrew's Priory High School, Honolulu, HI) selected to represent the State of Hawaii in the U.S. Stockholm Junior Water Prize (SJWP) National Competition, University of North Carolina, Charlotte, NC (Jun 17-18, 2016).
- Award to Advisee, Fernanda R. Oliveria (Ph.D. student), CTAHR Ph.D. Student Poster Presentation Award of Merit in the 28th College of Tropical Agriculture and Human Resources Symposium (2016).
- Award to Advisee, Sumeth Wonkiew (Ph.D. student), MBBE Best Ph.D. Student Poster Presentation in the 28th College of Tropical Agriculture and Human Resources Symposium (2016).
- Award to Advisees, Zackery Morrison and Noeloikeau Charlot (UG. students), MBBE Best Undergraduate Student Oral Presentation in the 28th College of Tropical Agriculture and Human Resources Symposium (2016).
- Award to Advisee, Surendra K.C.: DAAD Short-term Research Fellowship, Bonn, Germany to conduct anaerobic digestion research at Hohenheim University, Stuttgart, Germany (Jan to May 2016).
- NSF Conference Grant to four advisees: Edward Drielak (M.S. Candidate); Shilva Shrestha (M.S. student); Chayanon Sawatdeenarunat (Ph.D. Student); and Duc Nguyen (Ph.D. Student) to attend/present at S1041: *The Science and Engineering for a Bio-based Industry and Economy Annual Meeting and Symposium* in Wooster, Ohio (Aug 11-12, 2015).
- Award to Advisees, Sreelakshmi Kutty and Ariana Kim (High School Intern, St. Andrew's Priory High School, Honolulu, HI), Utilization of Invasive Macro-algae for High-value Products, Third Place in Chemistry Category at Intel International Science and Engineering Fair (ISEF), Pittsburgh, PA, USA (May 10-15, 2015).

- Award to Advisees, Sreelakshmi Kutty and Ariana Kim (High School Intern, St. Andrew's Priory High School, Honolulu, HI), Algal-biofuel, First Place in Energy and Environment Category in the State of Hawaii (2015).
- Award to Advisee, Shilva Shrestha (M.S. student). 3rd place, CTAHR M.S. Oral Award of Merit in the 27th College of Tropical Agriculture and Human Resources Symposium (2015).
- Award to Advisee, Laura Martinez, Gamma Sigma Delta Undergraduate Poster Presentation. 26th College of Tropical Agriculture and Human Resources Symposium (2015).
- Excellent Reviewer for *Bioresource Technology (BITE)* (IF: 5.651) (2014).
- Award to Advisee: Pradeep Munasinghe - Best Poster Award at the Third International Conference on Materials, Energy and Environment (ICMEE2014), Honolulu, Hawaii (Jul 2014).
- DAAD Research Fellowship, Germany to conduct research at State Institute of Agricultural Engineering and Bioenergy, Hohenheim University, Stuttgart, Germany (2013).
- Award to Advisee: Saoharit Nitayavardhana - Best Student Oral Presentation Award at the International Conference on Challenges in Environmental Science and Engineering (CESE-2012), Melbourne, Australia (Sep 9-13, 2012).
- Award to Advisee: Devin Takara - Ka Hana Po'okela Service Award, College of Tropical Agriculture and Human Resources Symposium, University of Hawaii at Manoa (2012).
- Award to Advisee: Devin Takara - College of Tropical Agriculture and Human Resources Symposium, MBBE Best Ph.D. Oral Presentation Award (2012).
- Award to Advisees: Sarah Tamashiro and Lindsay Fujimoto (High School Interns, St. Andrew's Priory School, Honolulu, HI): High school students selected to represent Hawaii in International Science Fair for three years in a row. Hawaii Academy of Science (HAS) (2009, 2010 and 2011).
- Award to Advisee: Sreelakshmi Kutty (Middle School Intern, St. Andrew's Priory High School, Honolulu, HI), Anaerobic digestion of green grass, First Place in Junior Division (2011).

- Helen Jones Farrar Award in Bioengineering to Advisee: Devin Takara (Ph.D. student, University of Hawaii at Manoa): Achievement Rewards for College Scientists (ARCS) Foundation (2010).
- Award to Advisees, Outstanding Poster Awards in Ph.D. Category (1st and 3rd among 50 posters) in the College of Tropical Agriculture and Human Resources Symposium (2010)
- 2008 R & D 100 Award for Fungal Process for Ethanol Plant Stillage Treatment. (With J (Hans) van Leeuwen, Mary Rasmussen and Anthony L. Pometto III).
- International Water Association (IWA) Project Innovation Award. (With J (Hans) van Leeuwen, Mary Rasmussen and Anthony L. Pometto III).
- American Association of Environmental Engineering Excellence Award-2008: University Research Grand Prize, Washington, D.C. "Value-Added Products from Dry-Grind Corn Milling Stillage by Fungal Processing." (With J (Hans) van Leeuwen, Mary Rasmussen and Anthony L. Pometto III).

PUBLICATIONS

(Over 80 refereed journal papers, 12 book chapters, 1 book (bestsellers), one textbook, 2 edited books, one conference proceedings, one report and one manual (Scopus *H-index*: 24; citation over 2780; Google scholar *H-index* 32; citation over 4600; Research gate (RG) Score: 38.83).

Books

- *Bioenergy: Principles and Applications*. (Yebo Li and Samir Kumar Khanal). **John-Wiley & Sons**, 2016; 600 pp) (**Textbook**). (Equal contribution)
<http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118568311,subjectCd-AG90.html>
(29-chapter textbook, SKK contributed 11 chapters)
- Proceedings of the first international conference on "Recent Advances in Bioenergy Research" (eds.: Sachin Kumar, Samir Kumar Khanal and Yogender Kumar Yadav). **Springer Publishing** (Spring 2016).

(<http://www.springer.com/us/book/9788132227717>)
- *Waste Biorefinery: Potential and Perspectives*. (eds. Thallada Bhaskar, Ventaka Mohan, Samir Kumar Khanal, D.-J. Lee, and Ashok Pandey). **Elsevier Inc.** USA. (in-press)

- *Fungal Biorefineries*. (eds. Sachin Kumar, Samir Kumar Khanal, Pratibha Dheeran and Mohammad Taherzadeh). **Springer**. (in-press)
- *Biofuels: Alternative Feedstocks and Conversion Processes for the Production of Biofuels* (2nd Edition). (eds. Ashok Pandey, Christian Larroche, Edgard Gnansounou, Samir Kumar Khanal, Claude-Gilles Dussap, Steve Ricke). Elsevier Inc. USA. (in-press)
- *Anaerobic Biotechnology for Bioenergy Production: Principles and Applications*. (**2nd Edition in Preparation, Wiley-Blackwell Publishing**) (Fall 2018).
- *Anaerobic Biotechnology for Bioenergy Production: Principles and Applications*. (**1st edition, Bestseller, Wiley-Blackwell Publishing**) (Oct 2008; 320 pp).
<http://www.wiley.com/WileyCDA/WileyTitle/productCd-0813823463.html>
- *Bioenergy and Biofuel from Biowastes and Biomass*. (**Bestseller, American Society of Civil Engineers**) (Apr 2010; 505 pp); Lead Editor and Contributor.
<http://www.asce.org/Product.aspx?id=2147487587>

Book Chapters

1. Rajendran, K., Surendra, K.C., Tomberlin, J.K., and **Khanal, S.K.** Insect-based biorefinery for bioenergy and biobased products: A critical review. In *Waste Biorefinery: Potential and Perspectives*. (eds. Thallada Bhaskar, Ventaka Mohan, Samir Kumar Khanal, D.-J. Lee, and A. Pandey). Elsevier Inc. USA. (in-press).
2. **Khanal, S.K.** Giri, B., Nitayavardhana, S., and Gadhamshetty, V. 2017. Anaerobic reactor/digester: Design and development. In *Current Developments in Biotechnology and Bioengineering*. (eds. D.-J. Lee, J. Jegatheesan, P. Hallenbeck, H. H. Ngo, and A. Pandey). Elsevier Inc. USA. Pp 261-279.
3. Takara, D., and **Khanal, S. K.** 2012. Biomass pretreatment for biofuel production. In *Sustainable Bioenergy and Bioproducts*. (eds. K. Gopalakrishnan, H. van Leeuwen, and R. Brown). Springer-Verlag Inc., London, UK. pp 59-70.
4. Shrestha, P., Pometto III. A.L., **Khanal, S. K.**, and Van Leeuwen, J. 2012. Second-generation biofuel production from corn-ethanol industry residues. In *Sustainable Bioenergy and Bioproducts*. (eds. K. Gopalakrishnan, H. van Leeuwen, and R. Brown). Springer-Verlag Inc., London, UK. pp 71-87.

5. **Khanal, S. K.**, and Munasinghe, P. 2011. Biomass-derived syngas fermentation into biofuels. In *Biofuels: Alternative Feedstocks and Conversion Processes*. (eds. A. Pandey, C. Larroche, S.C. Ricke, C.G. Dussap and E. Gnansounou). Elsevier Inc. USA. pp 79-98.
6. **Khanal, S. K.**, and Lamsal, B. P. 2010. Biofuel and bioenergy production: some perspectives. In *Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass*. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 1-22.
7. Takara, D., Shrestha, P., and **Khanal, S. K.** 2010. Lignocellulosic biomass pretreatment. In *Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass*. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 158-171.
8. Shrestha, P., Lamsal, B. P., and **Khanal, S. K.** 2010. Preprocessing of lignocellulosic biomass for biofuel production. In *Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass*. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 172-200.
9. Lamsal, B. P., Shrestha, P., and **Khanal, S. K.** 2010. Enzymatic hydrolysis of lignocellulosic biomass for biofuel production. In *Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass*. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 201-224.
10. Gadhamshetty, V., Nirmalakhandan, N., **Khanal, S. K.**, and Johnson, G. R. 2010. Bioreactor systems for biofuel/bioelectricity production. In *Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass*. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 275-312.
11. Shrestha, P., Rasmussen, M.R., Nitayavardhana, S., **Khanal, S. K.**, and Van Leeuwen, J. 2010. Bioreactor systems for biofuel/bioelectricity production. In *Biofuel and Bioenergy from Biowastes and Lignocellulosic Biomass*. (eds. Samir K. Khanal et al.). American Society of Civil Engineers. Reston, VA, USA. pp 389-410.
12. **Khanal, S.K.**, Takara, D., Shrestha, P., and Lamsal, B. P. 2010. Ultrasound applications in biofuel and bioenergy production. In *Green Chemistry for Environmental Sustainability* (eds. A. Mudhoo and S. K. Sharma). CRC Press Taylor & Francis Group LLC, Boca Raton, Florida. pp 303-313.

Report

Khanal, S. K., Turn S. and Kinoshita, C. 2009. Conversion Technology. In *Hawaii Bioenergy Master Plan Report*. <http://www.hnei.hawaii.edu/bmpp/home.asp>

Manual

Khanal, S. K. and Takara D. (2011). *Bioenergy Laboratory Manual for High and Middle School Science Teachers*.

Website: <http://www.ctahr.hawaii.edu/bioenergy/>

Refereed Journal Papers

Year 2017

1. Wongkiew, S., Park, M-R., Chandran, K., and **Khanal, S.K.** Nitrogen transformations in aquaponic systems: Evaluation of microbial communities using gene expression and next generation sequencing. *Environmental Science and Technology* (in submission).
2. Bu, F., Dong, N., **Khanal, S.K.**, and Xie, L. Effect of CO on hydrogenotrophic methanogenesis: Biomethanation performance and microbial community. *Bioresource Technology* (in submission).
3. Dong, N., Bu, F., Xie, L., **Khanal, S.K.**, and Zhou, Q. Hydrogenotrophic methanogenesis at hyperthermophilic temperature: Evaluation of microbial community. *Bioresource Technology* (in-submission).
4. Nguyen, D., Wu, Z., Shrestha, S., Lee, P.-H., Raskin, L., and **Khanal, S.K.** Oxidation-reduction potential (ORP)-based micro-aeration for anaerobic digestion process stability: Evaluation of microbial communities and mechanism. *Environmental Science and Technology* (in-submission).
5. K.C., Surendra, Ogoshi, R., Hashimoto, A., **Khanal, S. K.** High yielding tropical energy crops for bioenergy production: Effects of plant components, harvest years, and locations on biomass composition. *GBC Bioenergy* (in-submission).
6. K.C., Surendra, Ogoshi, R., Reinhardt-Hanisch, A., Oechsner, H., Hashimoto, A., **Khanal, S. K.** Anaerobic digestion of high yielding tropical energy crops for biogas production: Effects of crop types, locations and plant parts. *Applied Bioenergy* (in-submission).

7. Jia, Y., **Khanal, S.K.**, Shu, H., Zhang, H., Chen, G.H., and Lu, H. Ciprofloxacin degradation in anaerobic sulfate-reducing bacteria (SRB) sludge system: Mechanism and pathways. *Environmental Science and Technology* (in-submission).
8. Zhang, H., Jia, Y., **Khanal, S.K.**, Lu, H., Fang, H., Zhao, Q., Wu, D., and Chen, G.H. Extracellular polymeric substances (EPS)-facilitated Ciprofloxacin (CIP) adsorption in anaerobic sulfate-reducing bacteria sludge system. *Environmental Science and Technology* (in-submission).
9. Sawatdeenarunat, C., Nam, H., Adhikari, S., Sung, S., and **Khanal, S. K.** Innovative decentralized biorefinery for lignocellulosic biomass: Integrating anaerobic digestion with thermochemical conversion. *Bioresource Technology* (submitted).
10. Oliveira, F.R., Patel, A.K., Jaisi, D., Liu, H., and **Khanal, S.K.** Environmental applications of biochar: Current status and perspectives. *Bioresource Technology* (in-press).
11. Shrestha, S., Fonoll, X., **Khanal, S.K***, and Raskin, L*. Biological strategies for enhanced hydrolysis of lignocellulosic biomass during anaerobic digestion: Current status and future perspectives. *Bioresource Technology*. (in-press).
12. Wongkiew, S., Popp, B.N., and **Khanal, S.K.** 2017. Fate of nitrogen in floating-raft aquaponic systems using natural abundance nitrogen isotope. *International Biodeterioration & Biodegradation*. 125:24-32.
13. Wongkiew, S., Hu, Z., Chandran, K., Lee, J.W., and **Khanal, S.K.** 2017. Nitrogen transformations in aquaponic systems: A review. *Aquacultural Engineering*. 76:9-19. (**Most downloaded paper**).
14. Sawatdeenarunat, C., Sung, S., and **Khanal S. K.** 2017. Enhanced volatile fatty acids production during anaerobic digestion of lignocellulosic biomass via micro-oxygenation. *Bioresource Technology*). 237:139-145.
15. Jia, Y., **Khanal, S.K.**, Zhang, H., Chen, G.H., and Lu, H. Sulfamethoxazole degradation in anaerobic sulfate-reducing bacterial sludge system for wastewater treatment. *Water Research*. 119:12-20.
16. Kanjanarong, P., Giri, B.S., Jaisi, D.P., Oliveira, F.R., Boonsawang, Chaiprapat, S., Singh, R.S., Balakrishna, A., and **Khanal, S.K.** 2016. Removal of hydrogen sulfide generated during anaerobic treatment of

sulfate-laden wastewater by wood-derived biochar: Evaluation of efficiency and mechanisms. *Bioresource Technology*. 234: 115–121

Year 2016

17. Yang, W., LU, H., **Khanal, S.K.**, Zhao, Q., Meng, L., and Chen, G. H. 2016. Granulation of sulfur-oxidizing bacteria for autotrophic denitrification. *Water Research*. 104: 507-519.
18. K C Surendra; Olivier, R., Tomberlin, J.K., Jha, R., and **Khanal, S.K.** 2016. Bioconversion of organic wastes into biodiesel and animal feed via insect farming. *Renewable Energy*. 98: 197-202.
19. Sawatdeenarunat, C. Nguyen, D., Surendra, K.C., Shrestha, S., Rajendran, K., Oechsner, H., Xie, L., and **Khanal, S.K.** 2016. Anaerobic biorefinery: current status, challenges, and opportunities. *Bioresource Technology*. 215: 304-313.
20. Zhang, M, Li, X., **Khanal, S. K.**, and Zhou, Q. 2016. Biorefinery approach for cassava-based industrial wastes: current status and opportunities. *Bioresource Technology*. 215:50-62.
21. Yin, Z, Xie, L., **Khanal, S.K.**, and Zhou., Q. 2016. Interaction of organic carbon, reduced sulphur and nitrate in anaerobic baffled reactor for fresh leachate treatment. *Environmental Technology*. 37 (9); 1110-1121.

Year 2015

22. Nguyen, D., Gadhamshetty, V., and **Khanal, S.K.** 2015. Automatic process control in anaerobic digestion technology: a critical review. *Bioresource Technology*. 193:513-522.
23. Tomberlin, J.K., van Huis, A., Benbow, M.E., Jordan, H., Astuti, D.A., Azzollini, D., Banks, I., Bava, V., Borgemeister, C., Cammack, J.A., Chapkin, R.S., Čičková, H., Crippen, T.L., Day, A., Dicke, M., Drew, D., Emhart, C., Epstein, M., Finke, M., Fischer, C. H., Gatlin, D., Grabowski, N. T., He, C., Heckman, L., Hubert, A., Jacobs, J., Joseph, J., **Khanal, S. K.**, Kleinfinger, J. K., Klein, G., Leach, C., Liu, Y., Newton, G. L., Olivier, R., Pechal, J. L., Picard, C. J., Rojo, C., Roncarati, A., Sheppard, C., Tarone, A.M., Verstappen, B., Vickerson, A., Yang, H., Yen, A., Yu, Z., Zhang J., and Zheng, L. 2015. Protecting the environment through insect farming as a means to produce protein for use as livestock, poultry, and aquaculture feed, *J. Insect Food Feed* 1. 307–309.

24. Paudel, S.R., Choi, O., **Khanal, S.K.**, Chandran, K., Kim, S.P., and Lee, J.W. 2015. Effects of temperature on nitrous oxide (N₂O) emission from intensive aquaculture system. *Science of the Total Environment*. 518-519:16-23.
25. Takara, D., and **Khanal, S.K.** 2015. Characterizing compositional changes of Napier grass at different stages of growth for biofuel and biobased products potential. *Bioresource Technology*. 188:103-108.
26. Acevedo, J.C., Hernández, J. A. Valdés, C. F., and **Khanal, S.K.** 2015. Analysis of operating costs for producing biodiesel from palm oil at pilot-scale in Colombia. *Bioresource Technology*. 188:117-123.
27. Hu, Z., Lee, J.W., Chandran, K., Kim, S., Brotto, A.C., and **Khanal, S.K.** 2015. Effect of plant species on nitrogen recovery in aquaponics. *Bioresource Technology*. 188:178-186.
28. Surendra K. C., Sawatdeenarunat, C., Shrestha, S., and **Khanal, S.K.** 2015. Anaerobic digestion-based biorefinery for bioenergy and bio-based products. *Industrial Biotechnology*. 11 (2): 103-112.
29. Sawatdeenarunat, C., Surendra K. C., Takara D., Oechsner, H. and **Khanal, S.K.** 2015. Anaerobic digestion of lignocellulosic biomass: Challenges and opportunities. *Bioresource Technology*. 178: 178–186.
30. Surendra K. C. and **Khanal, S.K.** 2015. Effects of crop maturity and size reduction on digestibility and methane yield of dedicated energy crop. *Bioresource Technology*. 178:187–193.
31. Choi, I. S., Lee, Y.G., **Khanal, S.K.**, Park, B.J., and Bae, H.-J. (2015). A low-energy, cost-effective approach to fruit and citrus peel waste processing for bioethanol production. *Applied Energy* 140: 65–74.

Year 2014

32. Munasinghe, P.C., and **Khanal, S. K.** (2014). Evaluation of hydrogen and carbon monoxide mass transfer and a correlation between myoglobin-protein bioassay and gas chromatography method for carbon monoxide determination. *RSC Advances*. 4 (71): 37575 – 37581.
33. K.C., S., Takara, D., Hashimoto, A.G., and **Khanal, S. K.** 2014. Biogas as a sustainable energy source for the developing countries: Opportunities

and challenges. *Renewable and Sustainable Energy Reviews*. 31: 846-859.

34. Hu, Z., Lee, J. W., Chandran, K., Kim, S., Sharma, K., and **Khanal, S. K.** 2014. Influence of carbohydrate addition on nitrogen transformations and greenhouse gas emissions of intensive aquaculture system. *Science of the Total Environment*. 470–471 (1): 193–200.
35. Rasmussen, M., **Khanal, S. K.**, Pometto III, A.L., and Van Leeuwen, J. 2014. Water reclamation and value-added animal feed from corn-ethanol stillage by fungal processing. *Bioresource Technology*. 151 (2014) 284–290

Year 2013

36. K.C., S., Takara, D. Jasinski, J. and **Khanal, S. K.** 2013. Household anaerobic digester for bioenergy production in developing countries: opportunities and challenges. *Environmental Technology*. 34 (13 and 14): 1671-1689.
37. Devappa, R.K., Bingham, J-P., and **Khanal, S.K.** 2013. High performance liquid chromatography method for rapid quantification of phorbol esters in *Jatropha curcas* seed. *Industrial Crops & Products*. 49: 211-219.
38. Nitayavardhana, S., Kerati, I, Pavasant, P., and **Khanal, S. K.** 2013. Production of protein-rich fungal biomass in an airlift bioreactor using vinasse as substrate. *Bioresource Technology*. 133:301–306.
39. Hu., Z, Lee, J. W., Chandran, K., Kim, S., Sharma, K., and **Khanal, S. K.** 2013. Nitrous oxide emission from intensive aquaculture system. *Bioresource Technology*. 130: 314-320.
40. Lee, K.H., Park, K.Y., **Khanal, S.K.** Lee, J.W. 2013. Effects of Household Detergent on Anaerobic Fermentation of Kitchen Wastewater from Food Waste Disposer. *Hazardous Materials*. 244: 39-45.

Year 2012

41. Takara, D., Nitayavardhana, S., Munasinghe, P.C, K. C., S., and **Khanal, S. K.** 2012. Sustainable Bioenergy from Biofuel-Derived Residues. *Water Environment Research*. 84: 1568-1585.
42. Pal, A., Negi, V.S., **Khanal, S. K.**, and Borthakur, D. 2012. Immunodetection of curcin in seed meal of *Jatropha curcas* using polyclonal antibody

developed against curcumin-L. *Current Nutrition and Food Science*. 8 (3):213-219.

43. Munasinghe, P., and **Khanal, S. K.** 2012. Syngas fermentation to biofuel: evaluation and modeling of carbon monoxide mass transfer using a composite hollow fiber (CHF) membrane bioreactor. *Bioresource Technology*. 122: 130-136.
44. Hu, Z., Lee, J. W., Chandran, K., Kim, S., and **Khanal, S. K.** 2012. Nitrous oxide (N₂O) emission from aquaculture system: A review. *Environmental Science and Technology*. 46 (12):6470-6480.
45. Nitayavardhana, S., and **Khanal, S. K.** 2012. Biofuel residues ban or boon? *Critical Reviews in Environmental Science and Technology*. 42 (1): 1-43.

Year 2011

46. Montalbo-Lombay, M., **Khanal, S. K.**, Van Leeuwen, J., Raman, D. R., and Grewell, D., 2011. Simultaneous saccharification and fermentation and economic evaluation of ultrasonic and jet cooking pretreatment of corn slurry. *Biotechnology Progress*. 27 (6): 1561-1569.
47. K. C., Surendra, **Khanal, S. K.**, Shrestha, P., and Lamsal, B. P. 2011. Current Status of Renewable Energy in Nepal: Opportunities and Challenges. *Renewable and Sustainable Energy Reviews*. 15 (1): 4107-4117.
48. Nitayavardhana, S., and **Khanal, S. K.** 2011. Biodiesel-derived crude glycerol bioconversion to animal feed: A sustainable option for a biodiesel refinery. *Bioresource Technology*. 102 (10): 5808-5814.
49. Takara D., and **Khanal, S. K.** 2011. Green processing of tropical banagrass into biofuel and biobased products: An innovative biorefinery approach. *Bioresource Technology*. 102 (2): 1587-1592.

Year 2010

50. Munasinghe, P.C., and **Khanal, S. K.** 2010. Syngas fermentation to biofuel: Evaluation of carbon monoxide mass transfer coefficient ($k_L a$) in different reactor configurations. *Biotechnology Progress*. 26 (6): 1616-1621.
51. Takara, D., Nitayavardhana, S., Pinowska, A., and **Khanal, S. K.** 2010. Sustainable Bioenergy from Biofuel Residues and Wastes. *Water Environment Research*. 82 (10):1694-1719.

52. Mitra, D., Pometto III, A. L., **Khanal, S. K.**, Byron, B.S., and Van Leeuwen, J. 2010. Value-added production of nisin from soy whey. *Applied Biochemistry and Biotechnology*. 162 (7): 1819-1828.
53. Nitayavardhana, S., and **Khanal, S. K.** 2010. Innovative biorefinery concept for sugar-based ethanol industries: production of protein-rich fungal biomass on vinasse as an aquaculture feed ingredient. *Bioresource Technology*. 101 (23): 9078-9085.
54. Shrestha, P., **Khanal, S. K.**, Pometto, A. L., and Van Leeuwen, J. 2010. Ethanol production via in-situ fungal saccharification and fermentation of mild alkali and steam pretreated corn fiber. *Bioresource Technology*. 101 (22): 8698-8705.
55. Rasmussen, M., **Khanal, S. K.**, Pometto III, A.L., and Van Leeuwen, J. 2010. Sequential saccharification of corn fiber and ethanol production by the brown rot fungus *Gloephyllum trabeum*. *Bioresource Technology*. 101(10): 3526–3533.
56. Montalbo-Lombay, M., **Khanal, S. K.**, Van Leeuwen, J., Raman, D. R. Dunn, L. Jr., and Grewell, D. 2010. Ultrasonic pretreatment of corn slurry for saccharification: A comparison of batch and continuous systems. *Ultrasonics Sonochemistry*. 17(5): 939-946.
57. Sindhuja, S., **Khanal, S. K.**, Pometto, A. L., Jin, B., and Van Leeuwen, J. 2010. Use of microfungi for production of high value fungal by-products: A review. *Critical Reviews in Environmental Science and Technology*. 40 (5):1-49.
58. Munasinghe, P.C., and **Khanal, S. K.** 2010. Syngas fermentation to biofuels: Challenges and opportunities. *Bioresource Technology*. 101 (13): 5013-5022.
59. Seng, B., **Khanal, S. K.**, and Visvanathan, C. 2010. Anaerobic digestion of combined ultrasound and chemical pretreated waste activated sludge. *Environmental Technology*. 31 (3): 257-265.
60. Nitayavardhana, S., Shrestha, P. Rasmussen, M., Lamsal, B. P., Van Leeuwen, J., and **Khanal, S. K.** 2010. Ultrasound improved ethanol fermentation from cassava chips in cassava-based ethanol plants. *Bioresource Technology*. 10(8): 2741-2747.
61. Karki, B., Lamsal, B. P., Grewell, D., Jung, S., Pometto, A. L., Van Leeuwen, J., and **Khanal, S. K.** 2010. Enhancing Protein and Sugar Release from

Defatted Soy Flakes using Ultrasound Technology. *Journal of Food Engineering*. 96(2): 270-278.

62. Montalbo-Lomboy, M., Johnson, L., **Khanal, S. K.**, Van Leeuwen, J., and Grewell, D. 2010. Sonication of sugary-2 corn: A potential pretreatment to enhance sugar release. *Bioresource Technology*. 101(1): 351-358.

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63. Shrestha, P., **Khanal, S. K.**, Pometto III, A. L., and Van Leeuwen, J. 2009. Corn fiber induced extracellular enzymes production by wood rot and soft rot fungi for subsequent fermentation of hydrolyzate to ethanol. *J. of Agricultural and Food Chemistry*. 57: 4145-4161.
64. Karki, B., Lamsal, B. P., Grewell, D., Pometto, A. L., Van Leeuwen, J., **Khanal, S. K.** and Jung, S. 2009. Functional Properties of Soy Protein Isolates Produced from Ultrasonicated Defatted Soy Flakes. *J. of the American Oil Chemist Society*. 86(10):1021-1028.
65. Jasti, N., Rasmussen, M., **Khanal, S. K.**, Pometto III, A.L., and Van Leeuwen, J. 2009. Influence of selected operating parameters on fungal biomass production in corn-ethanol wastewater. *Journal of Environmental Engineering (ASCE)*. 135 (11):1106-1114.

Year 2008

66. Jasti, N., **Khanal, S. K.**, Pometto III, A.L., and Van Leeuwen, J. 2008. Converting corn wet milling effluent into high-value fungal biomass in an attached growth bioreactor. *Biotechnology and Bioengineering*. 101(6):1223-1233.
67. Sindhuja, S., **Khanal, S. K.**, Pometto, A. L., and Van Leeuwen, J. 2008. Ozone as a selective disinfectant for nonaseptic fungal cultivation on corn-processing wastewater. *Bioresource Technology*. 99(17): 8265-8272.
68. **Khanal, S. K.**, Shrestha, P., Rasmussen, M., Lamsal, B.P., Visvanathan, C., Liu H., and Van Leeuwen, J. 2008. Bioenergy and biofuel production from wastes/residues of emerging biofuel industries. *Water Environment Research*. 80 (10): 1625–1647.
69. Nitayavardhana, S., Rakshit, S. K., Grewell, D., Van Leeuwen, J., and **Khanal, S. K.** 2008. Ultrasound pretreatment of cassava chips to enhance sugar release for subsequent ethanol production. *Biotechnology and Bioengineering*. 101(3): 487-496.

70. Shrestha, P., Rasmussen, M., **Khanal, S. K.**, Pometto, A.L., and Van Leeuwen, J. 2008. Solid-state fermentation of corn fiber by *Phanerochaete chrysosporium* and subsequent fermentation of hydrolysate into ethanol. *Journal of Agriculture and Food Chemistry*. 56 (11): 3918 – 3924.
71. Xie, B., **Khanal, S. K.**, Van Leeuwen, J., Veysey, S. W., and Thompson, M. L. 2008. Sorption of Steroidal Hormones By Two Iowa Soil Materials: Detection and Modeling. *Soil Science*. 173 (9): 602-612.

Year 2007

72. **Khanal, S. K.**, Montalbo, M., Van Leeuwen, J., Srinivasan, G., and Grewell, D. 2007. Ultrasound enhanced glucose release from corn in ethanol plants. *Biotechnology and Bioengineering*. 98 (5): 978-985.
73. Ho, J., **Khanal, S. K.**, and Sung, S. 2007. Anaerobic membrane bioreactor for treatment of synthetic municipal wastewater at ambient temperature. *Water Science and Technology*. 55 (7): 79-86.
74. **Khanal, S. K.**, Grewell D, Sung, S., and Van Leeuwen, J. 2007. Ultrasound applications in wastewater sludge pretreatment: A review. *Critical Reviews in Environmental Science and Technology*. 37 (4): 277-313. **(Most cited paper)**.

Year 2006

75. **Khanal, S. K.**, Xie, B., Ong, S. K., Thompson, M. L., Sung, S., and Van Leeuwen, J. 2006. Fate, transport and biodegradation of natural estrogens in the environment and engineered systems - A review. *Environmental Science and Technology*. 40 (21): 6537-6546. **(Most cited paper)**.
76. Chen, W.-H., Chen, S.-Y., **Khanal S. K.**, and Sung, S. 2006. Kinetic study of biological hydrogen production by anaerobic fermentation. *International Journal of Hydrogen Energy*. 31(15): 2170-2178.
77. Akin, B., **Khanal, S. K.**, Sung, S., Grewell, D., and van Leeuwen, J. 2006. Ultrasound pre-treatment of waste activated sludge: effect of specific energy input and total solids on sludge disintegration. *Water Science and Technology –Water Supply*: 6(6): 35-42.

78. **Khanal, S. K.**, and Huang, J.-C. 2006. Online oxygen control for sulfide oxidation in anaerobic treatment of high sulfate wastewater. *Water Environment Research*. 78 (4): 397-408.
79. **Khanal, S. K.**, Chen, W.-H., Li, L., and Sung, S. 2006. Biohydrogen production in continuous flow reactor using mixed microbial culture. *Water Environment Research*. 78 (2): 110-117.
80. Foulkes, B., **Khanal, S. K.**, and Sung, S. 2006. Bioleaching of zinc and copper from anaerobically digested swine manure: effect of sulfur levels and solid contents. *Water Environment Research*. 78 (2): 202-208.
81. Jasti, N., **Khanal, S. K.**, Pometto, A. L., and Van Leeuwen, J. 2006. Fungal treatment of corn processing wastewater in an attached growth system. *Water Science and Practice*. 1 (3): 1-8.

Year 2005

82. **Khanal, S. K.**, and Huang, J.-C. 2005. Effect of high influent sulfate on anaerobic wastewater treatment. *Water Environment Research*. 77(7): 3037-3046.

Year 2004

83. **Khanal, S. K.**, Chen, W.-H., Li, L., and Sung, S. 2004. Biological hydrogen production: effects of pH and intermediate products. *International Journal of Hydrogen Energy*. 29(11):1123-1131.
84. Huang, J.-C., and **Khanal, S. K.** 2004. Treatment of high sulfate and high strength wastewater in a single stage anaerobic reactor. *Water Science and Technology-Water Supply*. 4 (1): 35-45.

Year 2003

85. **Khanal, S. K.**, and Huang, J.-C. 2003. Anaerobic treatment of high sulfate wastewater with oxygenation to control sulfide toxicity. *J. Environmental Engineering, ASCE*. 129(12): 1104-1111.
86. **Khanal, S. K.**, Shang, C., and Huang, J.-C. 2003. Use of oxidation-reduction potential (ORP) to control oxygen dosing for online sulfide oxidation in anaerobic treatment of high sulfate wastewater. *Water Science and Technology*. 47(12): 183-189.

87. **Khanal, S. K.**, and Huang, J.-C. 2003. ORP based oxygenation for sulfide control in anaerobic treatment of high sulfate wastewater. *Water Research*. 37(9): 2053-2062.
88. Eckhardt, H., and **Khanal, S. K.** 1999. Suitability of Bangkok sewage and nightsoil sludges for agricultural use with emphasis on potentially toxic elements. *Journal of Environmental Science and Health - Part A Toxic/Hazardous Substances and Environmental Engineering* 34 (10): 2007-2021.

PRESS RELEASE/NEWS CLIPPINGS

- Excellence in science springs from diverse pursuits as youth, Star Advertiser, July 19, 2016.
- Khon 2 Hawaii News "High school students make waves with invasive algae research." May 21, 2015.
(<http://khon2.com/2015/05/21/high-school-students-make-waves-with-invasive-algae-research/>)
- Hawaii Public Radio's morning talk show The Conversation! October 7th 2014 at 8:40 am; tackling food waste with black soldier flies.
- Partnership to Tackle Innovative Methods of Converting Food Wastes
(<http://www.highbeam.com/doc/1P3-3449067731.html>)
- Effectual St. Andrew's senior keeps her feet on the ground, Star Advertiser, May 30, 2011.
(http://www.staradvertiser.com/news/20110530_Effectual_St_Andrews_senior_keeps_her_feet_on_the_ground.html)
- UH Tests Ethanol Waste as Animal Feed, Star Bulletin, Vol. 13, Issue 174 - Sunday, June 22, 2008.
(<http://starbulletin.com/2008/06/22/news/story02.html>)
- Iowa State researchers use fungus to improve corn-to-ethanol process
(http://www.eurekalert.org/pub_releases/2008-05/isu-isr052708.php)
- Researchers Improve Soy Processing by Boosting Protein and Sugar Yields. *ScienceDaily*.
(<http://www.sciencedaily.com/releases/2007/02/070215133344.htm>)

- From Corn to Ethanol in a Jiffy. *BusinessWeek*, pp 107, Jul 2006.
(http://www.businessweek.com/magazine/content/06_27/c3991080.htm)
- Ultrasonics Boosts Release Rates of Corn Sugars for Ethanol Production. *ScienceDaily*.
(<http://www.sciencedaily.com/releases/2006/06/060601213717.htm>)
- Biotechnology Update.
(http://www.biotech.iastate.edu/biotech_update/PDF/jun06.pdf)
- Turning Corn Fiber into Ethanol.
(<http://www.physorg.com/news68392594.html>)
- Fast Corn-to-Ethanol Approach Discover. *SHORTLINER*, Vol. LVI (14), Aug 2006.

PROFESSIONAL POSITION AND ACADEMIC EXPERIENCE

- Associate Professor (Aug 2012 to present), Department of Molecular Biosciences and Bioengineering, University of Hawai'i at Mānoa.
- Assistant Professor (Jan 2008 to Jul 2012) (granted early tenure and promotion), Department of Molecular Biosciences and Bioengineering, University of Hawai'i at Mānoa.
- Collaborating Professor, Department of Civil and Environmental Engineering, University of Hawaii at Manoa (Jan 2015 to present).
- Visiting Professor, School of Environmental Science and Engineering, Sun-Yat Sen University, Guangzhou, China (Jun to Jul 2016; Dec 2016 to Jan 2017; Jul to Aug 2017).
- Visiting Professor, School of Environmental Science and Engineering, Tongji University, Shanghai, China (Jun 2016; Jun 2017).
- Visiting Professor, State Institute of Agricultural Engineering and Bioenergy, Hohenheim University, Stuttgart, Germany (Jun to Aug 2014).
- DAAD Research Fellow, State Institute of Agricultural Engineering and Bioenergy, Hohenheim University, Stuttgart, Germany (May to Jul 2013).
- Instructor, Sustainable Engineering, Université Catholique de Lille, Lille, France (Jul 1 to Aug 2, 2013).
- Visiting Scientist, German Biomass Research Center, Leipzig, Germany (May to

Jul 2012).

- Graduate Chair, Biological Engineering Program, University of Hawai'i at Mānoa (Jan 2009 to present).
- Instructor, Sustainability: Green and Global, American Business School, Paris, France (Jun 6 to Jul 13, 2011).
- Faculty Affiliate, Renewable Energy and Island Sustainability (REIS), University of Hawai'i at Mānoa (Sep 2009 to present).
- Faculty Affiliate, Water Resources Research Center (WRRC), University of Hawai'i at Mānoa (Apr 2011 to present).
- Collaborating Professor, Department of Civil, Construction and Environmental Engineering/Biorenewable Resources Technology, Iowa State University (Jan 2008 to present).
- Visiting Professor, Hohenheim University, Stuttgart, Germany (Dec 2010-Jan 2011).
- Research Assistant Professor, Department of Civil, Construction and Environmental Engineering; Biorenewable Resources and Technology; Biotechnology; Environmental Science, Iowa State University (Mar 2004 – Dec 2007).
- Bioenergy Engineer, Lincoln Energy LLC, Nevada, IA; Midwest Grain Processor, Lakota, IA (Oct 2003 to Dec 2007).
- Visiting Assistant Professor, Environmental Engineering Program, Asian Institute of Technology (AIT), Thailand (Jul - Aug 2005; May - Sep 2006; Jun-Sep 2007).
- Post-doctoral Research Associate, Department of Civil, Construction and Environmental Engineering, and Biorenewables, Iowa State University (Mar 2002- Feb 2004).
- Research/Teaching Assistant, Department of Civil Engineering, The Hong Kong University of Science and Technology (Feb 1998 – Feb 2002).

PATENTS

- Anaerobic biorefinery concept of mono-digestion of lignocellulosic biomass using horizontal bioreactor (Provisional Patent Filing date: 03/28/2017; Provisional Patent Application No. US62/478,007; Co-invented with Chayanon

Sawatdeenarunat).

- ORP-based micro-aeration system for process stability control in anaerobic digestion process (Provisional Patent Filing date: 03/03/2017; Provisional Patent Application No. US62/467,049; Co-invented with Duc Ngyuen).
- Useful products from fungal cultivation on coproducts from dry-grind ethanol production (Jun 12, 2015).

[US Patent No. 9,079,786; Co-inventor with Hans van Leeuwen, Anthony L. Pometto III].

- Fungal Cultivation on Alcohol Fermentation Stillage for Useful Products and Energy Savings (Jul 9, 2013).

[US Patent No. 8,481, 295; Co-inventor with Hans van Leeuwen, Anthony L. Pometto III, Mary L. Rasmussen and Debjani Mitra].

- Micro-Aeration of Sulfide Removal from Biogas (Feb 5, 2013).

[US Patent No. 8,366, 932; Co-inventor with Shihwu Sung and Thanapong Duangmanee].

PROFESSIONAL REGISTRATION

- Registered Professional Engineer (PE), Environmental Engineering, State of Iowa, USA (Registration # 17553).

RESEARCH GRANTS

(A) University of Hawai'i at Mānoa

1. Novel Bio-Chars Production from Northeastern Forestry Feedstocks and Their Land Application to Enhance Environmental Sustainability of Agricultural Production Systems (Co-PI).

Funding Agency: *Northeast Regional Sun Grant Center*; Amount: \$360,000 (Oct 2017 – Sep 2019) (Khanal's part: \$64,000).

2. Anaerobically-digested Slurry (Digestate) and Digestate-derived Biochar Applications as a Fertilizer for Organic Farming (Co-PI).

Funding Agency: *USDA-Supplemental Research/ Extension grant*; Amount: \$80,000 (Oct 2017 – Sep 2019). (Khanal's part: \$10,000)

3. Fundamental Understanding of Anaerobic Digestion of Energy Crops for Bioenergy Production (PI).

Funding Agency: *USDA-Supplemental Research/ Extension grant*; Amount: \$80,000 (Oct 2016 – Sep 2018).

4. Sustainable Integrated Food Production through Aquaponic Systems (PI).

Funding Agency: *USDA-Specialty Crops*; Amount: \$32,000 (Oct 2016 – Jan 2018).

5. Characterization of High Yield Energy Crops for Bioenergy Potential (PI).

Funding Agency: *Biomass Research and Development Initiative-USDA (supplemental) and Sun grant Sub-center*; Amount: \$ 175,000 (Dec 2015 - May 2017).

6. Donation to Khanal's Bioenergy and Environment Research Group by *ProtaCulture*; Amount over \$40,000.

7. Utilization of Local Agri-processing By-products to Produce Fungal Protein for Aquatic Feed Production (PI).

Funding Agency: *Center for Tropical and Sub-tropical Aquaculture*; Amount: \$ 200,000 (Nov 2015 – May 2018).

8. Developing ORP-based Process Control for High Solids Anaerobic Digestion (PI).

Funding Agency: *United States Dept. of Agriculture (USDA-AFRI)*; Amount: \$150,000 (Sep 2013 - Aug 2016).

9. Nitrogen Transformations in Aquaponics and its Implications to Climate Change (PI).

Funding Agency: *United States Dept. of Agriculture (USDA-AFRI)*; Amount: \$500,000 (Sep 2013 - Aug 2018).

10. Conversion of High-Yield Tropical Biomass into Sustainable Biofuels (Co-PI).

Funding Agency: *Biomass Research and Development Initiative (BRDI), United States Dept. of Agriculture and US Dept. of Energy*; Amount: \$ 6,000,000 (Sep 2012 - Aug 2017). (Khanal's part: \$572,376).

11. Developing Anaerobic Digestion Biorefinery Using High Yield Tropical Feedstocks (PI).

Funding Agency: *Sun Grant Western Regional Center through U.S. Dept. of Transportation*; Amount: \$ 200,000 (Jan 2014 – Jun 2016).

12. Can Biologically-derived Nitrogen be Used as a Fertilizer for Organic Farming? (PI).

Funding Agency: *USDA-Supplemental Research/ Extension grant*; Amount: \$99,847 (Oct 2013 – Sep 2015).

13. Converting Food Waste into Biofuel and Animal Feed through Insect Farming (PI).

Funding Agency: *HATCH Grant*; Amount \$40,000 (Oct 2014- Jun 2015).

14. Analytical Instrument for Bioenergy, Aquaculture and Climate Change Research, Instruction and Extension in CTAHR (PI).

Funding Agency: *CTAHR Instructional, Extension or Research Instrumentation Award*; Amount: \$ 40,000 (May 2013- Sep 2013).

15. Enhancing Biodiesel Feedstock and Co-product Production Using Oleaginous Fungi (PI).

Funding Agency: *Pacific Biodiesel, Inc.*; Amount: \$ 10,000 (Oct 2012 - Sep 2014).

16. Green Processing of High Yield Tropical Grass to Biobased Product and Biobutanol (PI).

Funding Agency: *Sun Grant Western Regional Center*; Amount: \$ 200,000 (Sep 2011 - Aug 2014).

17. Global Mapping of N₂O Emission from Aquaculture and Its Implications to Climate Change: Fate of N₂O in Water Recirculating Aquaponic System (US Lead Researcher).

Funding Agency: *National Research Foundation of Korea*; Amount: \$ 270,000 (Oct 2011- Sep 2014).

18. An Integrated BioGas-Solar Dehydration System: Increasing Sustainability through Value-Added Agriculture (Lead University Partner).

Funding Agency: *Small Business Innovative Research (SBIR) Phase II-USDA-NIFA*; Amount \$500,000 (\$50,000 for Khanal)(Sep 2011-Aug 2014).

19. Nitrogen Transformation in Aquaculture-Aquaponic System and Its Implication to Climate Change (PI).

Funding Agency: *USDA-Supplemental Research/Extension grant*; Amount: \$61,000 (Feb 2011 – Jan 2013).

20. Lignocellulosic Biomass Conversion into Ethanol Through Syngas Fermentation with Simultaneous Recovery of Acetic Acid using Mesoporous Silica Nanoparticle Materials (PI).

Funding Agency: *USDA-STAR*; Amount \$144,807 (Oct 2009 -Sep 2013).

21. A Collaborative Effort for Utilizing Regionally-based Feedstocks and Co-Products for Aquaculture Production (Co-PI with C. Tamaru).

Funding Agency: *USDA-ARS*; Amount \$600,000 (Award to Khanal: \$100,000)(Jul 2009 -Jun 2012).

22. Development of High Yield Feedstocks y for Renewable Energy (Co-PI with A. Hashimoto).

Funding Agency: *US Department of Energy (USDOE)*; Amount \$ 6.0 Million (Award to Khanal: \$306,449)(Oct 2009 –Sep 2013).

23. Value-added Processing of Sugarcane-ethanol Vinasse: Production of Protein-rich Fungal Biomass as a Fish Feed Ingredient USDA-ARS (PI).

Funding Agency: *USDA-ARS*; Amount \$79,987 (Sep 08 – Aug 13).

24. Integrated Education and Research in Clean Energy and Island Sustainability (Lead researcher, Biofuel and Bioenergy section). Support for two graduate research assistants + supplies: \$100,000).

Funding Agency: *USDOE*; Amount \$2.5 M (Sep 2010 –Aug 2013).

25. Developing High School Bioenergy Laboratory Manual (PI).

Funding Agency: *Department of Education, Hawaii*; Amount \$10,000 (May 2011-Aug 2011).

26. Developing Hawaii Bioenergy Master Plan: Conversion Technology (PI)

Funding Agency: *State of Hawaii*; Amount \$10,000 (Apr 2009 – Dec 2009).

27. Effect of Ultrasonic Pretreatment on the Biochemical Conversion of Banagrass to Ethanol (PI)

Funding Agency: *USDOE*; Amount \$70,633 (Jul 2008- Jun 2009).

28. Wood Utilization Research on US Biofuels, Bioproducts, Hybrid Biomaterials Production, and Traditional Forest Products (PI).

Funding Agency: *USDA-Hatch*; Amount \$40,000 (Oct 2008 – Jun 2009).

(B) Completed Projects (Iowa State University)

- Ultrasonication in Soy Processing for Enhanced Protein and Sugar Yields and Subsequent Nisin Production (PI). Handed over to Dr. J (Hans) Van leeuwen.

Funding Agency: *Grow Iowa Value Fund*; Amount: \$ 81,977 (Jul 2006 - May 2008).

- Nisin Production from Soy Whey using Lactic Acid Bacteria (PI). Handed over to Dr. J (Hans) Van leeuwen.

Funding Agency: *Iowa Biotechnology Byproducts Consortium, USDA*; Amount: \$155,711 (Sep 2005 - Aug 2008).

- Anaerobic Biotechnology: Waste Treatment and Resource Recovery (PI).
Funding Agency: *Iowa Biotechnology Byproducts Consortium, USDA*; Amount: \$19,921 (Sep 2006 - May 2008).

- Converting Low Value Thin Stillage from Dry Corn Milling Ethanol Plants into High Value Fungal Biomass* (Co-PI).

Funding Agency: *Grow Iowa Value Fund*; Amount: \$ 76,806 (Aug 2006 – May 2008).

- Retooling Ethanol Industries: Integrating Ultrasonics into Dry Corn Milling to Enhance Ethanol Yield*¹(Co-PI).

***Conceiving the ideas and developing full proposal**

Funding Agency: *Grow Iowa Value Fund*; Amount: \$ 80,000 (Apr 2006 - Dec 2007).

- Integrated Approach for biofuel and bio-based product recovery from cassava: A collaborative research project between Office of Biorenewables Programs (OBP), Iowa State University and Asian Institute of Technology (AIT) (Thailand) (PI).

Funding Agency: *OBP and Council on International Programs (CIP)*; Amount: \$5,000 (Nov 2006 - Jun 2007).

- A Sequential Fermentation Biorefinery to Produce Ethanol from Corn Processing Co-products (Co-PI).

Funding Agency: *Iowa Energy Center*; Amount: \$ 114,068 (Jul 2005 - Jun 2007).

- Retooling Ethanol Industry: Anaerobic Digestion of Thin Stillage to Produce Methane and Class-A Biosolids* (Co-PI).

Funding Agency: *Iowa Biotechnology Byproducts Consortium, USDA*; Amount: \$47,540 (Sep 2006 - Aug 2007).

- White and Brown Rot Fungal Fermentation of Low Value Corn Milling Co-Products to Sugars for Ethanol Production (Co-PI).

Funding Agency: *Iowa Biotechnology Byproducts Consortium, USDA*; Amount: \$86,159 (Sep 2004 - Aug 2007).

- Biological Hydrogen Production from Organic Wastes* (Co-PI).
Funding Agency: *Iowa Energy Center*; Amount: \$ 150,000 (Sep 2006).

- Biological Hydrogen Production from Agri-residues using Enriched Microbial Culture* (Co-PI).

Funding Agency: *Institute of Physical Research and Technology*; Amount: \$34,000 (Dec 2005).

- Anaerobic Bioconversion Coupled with Thermal/Catalytic Process for Alcohol Production from Agro-wastes* (Co-PI).

Funding Agency: *Iowa Biotechnology Byproducts Consortium, USDA*; Amount: \$ 117,000 (Aug 2005).

- Bioenergy Production from Food Wastes (Co-PI).
Funding Agencies: *Universal Entech*, Phoenix, AZ and *Arizona Department of Environmental Quality*; Status: Amount: \$ 32,090 (Jun 2003).

(C) Pending Projects

- Decentralized biorefinery for lignocellulosic biomass: Integrating anaerobic digestion with thermochemical conversion (PI).
Funding Agency: *United States Dept. of Agriculture (USDA-AFRI)*; Amount: \$500,000 (Oct 2017 - Sep 2021).
- Development and testing of sulfur incorporated biochar for efficient supply of sulfur macro-nutrient for crop production (PI).

Funding Agency: *United States Dept. of Agriculture (USDA-AFRI)*; Amount: \$500,000 (Oct 2017 - Sep 2021).

TEACHING

(A) At University of Hawai'i Mānoa (Biological Engineering Course)

- BE 491: Renewable Energy (Sustainable Engineering Series; Summer 2013), Université Catholique de Lille, Lille, France.
- BE 491: Sustainable Engineering (Undergraduate course, Fall 2011).
- BUS 350: Sustainability: Green and Global (Summer 2011), American Business School, Paris, France.
- BE 410: Biomass Conversion to Biofuels/Bioenergy (Undergraduate course, Fall 2009, 2010, 2013, 2014, 2016).
- BE 375: Transport Phenomena (Undergraduate course, Spring 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017).
- BE 691: Energy and Environment (Graduate course, Fall 2016, 2017).
- MBBE 610: Graduate Seminar (1-cr, Graduate course, Fall 2008).

(B) At Iowa State University

- CE 524: Air Pollution Control Designs (Fall 2005 and 2006).

- CE326: Principles of Environmental Engineering (Fall 2004).
- CE 525: Industrial Waste Treatment and Resource Recovery (Spring 2006 and 2007).
- Delivered Special Graduate/Undergraduate Courses:
 - Anaerobic Biotechnology (Spring 2006 and 2007)
 - Biomass: A Renewable Energy Source (Spring 2007)
 - Membrane Processes for Water and Wastewater Treatment (Spring 2006)
 - Ultraviolet Disinfection; and Anaerobic Waste Treatment (Fall 2006)
 - Biological Wastewater Treatment (Fall 2005 2006)

RESEARCH SUPERVISION/MENTORING

(A) Newly-Appointed Faculty, Post-Doctoral Research Associates and Visiting Scholars (Bolds are from UH Manoa)

1. **Surendra K.C.**, Post-doc (Jun 2017 to present).
2. **Anil K. Patel**, Post-doc (Jan 2017 to present).
3. **Edward Drielak**, Research engineer (Spring 2016 to May 2017) (Current address: Compliance Engineer, US Navy, Pearl Harbor, HI).
4. **Mr. Chettaphong Phuttaro**, Royal Golden Jubilee Scholar (Sep 2016 to July 2017), Prince of Songkla University, Songkhla, Thailand.
5. **Saruda Sittikitpunya**, Royal Golden Jubilee Scholar (May 2016 to Oct 2016) (Current address: Ph.D. candidate, Khon Kaen University, Khon Kaen, Thailand).
6. **Dr. Karthik Ramachandran**, Post-doc (Mar – Jun 2016). (Current address: Post-doc, University College Cork, Cork, Ireland).
7. **Dr. Balendu Sekher Giri**, Post-doc (Mar 2015 to Feb 2016). (Current address: Post-doc, Indian Institute of Technology IIT (BHU), Varanasi, India).
8. **Jarupat Kanjanarong**, Royal Golden Jubilee Scholar (Aug 2014 to May 2015). (Current address: Completed Ph.D. from Prince of Songkhla University, Songkhla, Thailand).

9. **Juan Camila Acevedo**, Visiting Scholar (Sep 2014 to Dec 2014). Santander University, Cucuta, Colombia. (Current address: Ph.D. student, Universidad Pontificia Bolivariana, Medellin Columbia).
10. **Dr. Devin Takara**, Junior Researcher (Dec 2012 to Dec. 2014). (Current address: Senior Engineer, US Navy, Pearl Harbor, HI).
11. **Dr. Saoharit Nitayavardhana**, Post-doctoral Research Associate (Jan 2013 to Oct 2014). (Current address: Assistant Professor at Chiang Mai University, Thailand).
12. **Dr. Zhen Hu**, Post-doctoral Research Associate (Apr 2011 to Aug 2013). (Current address: Associate Professor, School of Environmental Science and Engineering, Shandong University, Jinan, Shandong, China).
13. **Dr. Pradeep Munasinghe**, Post-doctoral Research Associate (Dec 2012 to Feb 2013) (Current address: Research Engineer at WhiteDogLabs Inc., New Castle, DE).
14. **Dr. Devappa Rakshit**, Post-doctoral Research Associate (Aug 2011 to Dec Jan 2013). (Current address: Senior Scientist, Biorefining Research Institute, Lakehead University, Thunder Bay, Ontario Canada).
15. **Kerati Issarapayup**, Visiting Scholar, Chulalongkorn University, Thailand (Oct 2010 – Sep 2011).
16. **Kriangkrai Thitimakorn**, Visiting Scholar, Thailand (May - Aug 2008). Current address: Senior Development Officer, Swedish Embassy, Bangkok, Thailand).
17. Dr. Tian Qing, Visiting Professor, DongHua University, Shanghai, China (Jul 2007 – Aug 2008).
18. Dr. Buddhi P. Lamsal, Assistant Professor, Food Science and Human Nutrition Dept., Iowa State University (mentored in fermentation and biorenewable research) (Jan 2007 - Dec 2007).
19. Dr. Sang Hyoun Kim, Post-doctoral Research Associate, Korea Advance Institute of Science and Technology, Daejeon, South Korea (Nov 2006 - Dec 2007). (Current address: Associate Professor, Daegu, University, South Korea).
20. Dr. Wen-Hsing Chen, Post-doctoral Research Associate, Iowa State University (Jan 2007– Jun 2007) (Current address: Associate Professor,

National Ilan University, Taiwan).

21. Ms. Saoharit Nitayavardhana, Visiting Scholar, Asian Institute of Technology, Bangkok, Thailand (Mar - Dec 2007) (Current address: Assistant Professor, Chiang Mai University, Thailand).
22. Mr. Hrvoje Juretic, Fulbright Scholar, University of Zagreb, Zagreb, Croatia (Jun – Dec 2006).
23. Dr. Beril Akin, Visiting Professor, Gaza University, Ankara, Turkey (Jan - May 2006).
24. Ms. Melissa Montalbo, Visiting Scholar, Asian Institute of Technology, Bangkok, Thailand (Jan - Mar 2006) (Current address: Research Assistant Professor, Rowan University).
25. Dr. David Grewell, Assistant Professor, Dept. of Agricultural and Biosystems Engineering, Iowa State University (mentored in biorenewable research) (Oct 2005 - May 2006).
26. Dr. Tarek Sabry, Fulbright Scholar, Aim Shams University, Cairo Egypt (Nov 2004 – Sep 2005).

(B) Other Researchers/Graduate students Mentored

1. Gopi Krishna Kafle, Ph.D. student at Kangwon National University, South Korea (Currently, Post-doc, Washington State University, Pullman, WA) (2009-2015).
2. Po-Heng (Henry) Lee, Post-doc, INHA University, South Korea (Currently, Assistant Professor, Hong Kong Polytechnic University, Hong Kong) (2012-2015).
3. Mathava Kumar, Graduate student at IIT Madras (Currently, Associate Professor, IIT Madras, India (2006-2013).
4. Dr. Venkataramana Gadhamshetty, Graduate student, New Mexico State University (Currently, Associate Professor, Department of Civil and Environmental Engineering, South Dakota School of Mines and Technology, Rapid City, SD) (2005-2014).

(C) Current Graduate Students

1. Fernanda R. Oliveira (Ph.D. student), "High rate anaerobic digestion process for treatment of sulfate-laden industrial wastewater with simultaneous removal of hydrogen sulfide using biochar." (2016 to present).
2. Jung Shick Kwon (Ph.D. student). "Fungal protein production on sugarcane-to-ethanol process wastewater." (2016 to present).
3. Misheel Batsaikhan (M.S. student), "Protein-rich fungal biomass cultivation on agro-industrial residues and wastes for aquaculture fish feed with simultaneous water reclamation." (2016 to present).
4. Sumeth Wongkiew (Ph.D. candidate), "Nitrogen transformations in aquaponic systems and its implication to climate change." (2014 to present).
5. Nguyen Minh Duc (Ph.D. candidate), "ORP-based process control for high-solids anaerobic digestion." (2014 to present).
6. Elijah Crow (M.S. student), "Fungal-algal symbiosis system for biofuel and biobased products generation." (2014 to present).

(D) Past Students

At University of Hawai'i at Mānoa

1. Chayanon (Nont) Sawatdeenarunat (Ph.D.), "Anaerobic digestion of high solids feedstocks." (Summer 2017). (Current address: Post-doc, University of Hawaii-Hilo, HI, USA).
2. Surendra K.C. (Ph. D.), "Anaerobic digestion of energy crops for bioenergy production." (Summer 2017). (Current address: Post-doc, University of Hawaii at Manoa).
3. Ernest J. Williams (M.S. Plan B), "Sewage sludge generation and treatment in Hawaii." (Spring 2016). (Current address: environmental engineer, Washington, D.C.).
4. Shilva Shrestha (M.S. Plan A), "Anaerobic digestion of lignocellulosic biomass using rumen contents for enhanced biogas production." (Fall 2015). (Current address: Ph.D. candidate, University of Michigan Ann Arbor, MI).

5. Edward Drielak (M.S. Plan A), "Investigation of factors affecting the dilute acid pretreatment of Napier grass using a full factorial statistical approach." (Fall 2015). (Current address: Engineer, US Navy, Pearl Harbor, HI).
6. Aaron King (M.S. Plan B), "Oleaginous fungi as a source of triacylglycerides for biodiesel production." (Spring 2014). (Current address: R & D Engineer, Pacific Biodiesel, LLC, HI).
7. Sumil Thapa (M.S. Plan B), "Anaerobic digestion of food waste." (Fall 2013). (Current address: Process Engineer, Oceanit Laboratories, Honolulu, HI).
8. Mathew Wong (M.S. Plan A), "Mass transfer evaluation of fungal fermentation." (Fall 2013). (Current address: Biological engineer Healthcare Information Technology, Wuhan, China).
9. Nora Robertson (M.S. Plan B), "Life cycle analysis of Napier grass for biofuel production." (Spring 2013). (Current address: Engineer, Tissue Genesis, Honolulu, HI).
10. Saoharit Nitayavardhana (Ph.D.), "Protein-rich fungal biomass production on sugarcane-ethanol wastewater for animal feed applications with concomitant water reclamation (Fall 2012). (Current address: Assistant Professor, Chiang Mai University, Thailand).
11. Devin Takara (Ph. D.), "Green processing of Napier grass for generation of biofuel and biobased product." (Fall 2012). (Current address: Senior Engineer, US Navy, Pearl Harbor, Honolulu, HI).
12. Pradeep Munasinghe (Ph.D.), "Mass transfer evaluation and analytical modeling using composite hollow fiber (CHF) membrane for syngas fermentation to biofuels." (Fall 2012). (Current address: Research Engineer at WhiteDogLabs Inc., New Castle, DE).
13. Majdouline LeRoy (M.S. Plan-A), "Ultrastructural changes associated with different pretreatments on Napier grass." (Fall 2012). (Current address: Engineer, US Navy, Pearl Harbor, Honolulu, HI).
14. Khuyen Phan (M.S. Plan-B), "Bioconversion of papaya wastes to protein-rich feed for aquaculture application." (Fall 2009). Current address: Self-employed in architectural design, Honolulu, HI).

At Iowa State University (as Major/Co-major Professor)

1. Mary Rasmussen (Ph.D.), "Fungal treatment of thin stillage from dry corn milling ethanol plant and recovery of protein as animal feed." (Fall 2009; Current address: Unknown).
2. Micky Vincent (Ph.D.), "Sequential saccharification and fermentation of corn stover for the production of fuel ethanol using wood-rot fungi, *Saccharomyces cerevisiae* and *Escherichia coli* K011." (Summer 2010; Current address: Lecturer, Dept of Biotechnology, University of Malaysia Sarawak (UNIMAS)).
3. Bishnu Karki (Ph.D.), "Ultrasonic application in soy processing to enhance protein yield and sugar release." (Spring 2009; Current address: Post-Doc., South Dakota State University, Brookings, SD).
4. Melissa Montalbo (Ph.D.), "Ultrasonic pretreatment of corn to enhance ethanol yield." (Fall 2008; Current address: Research assistant professor, Rowan University).
5. Prachand Shrestha (Ph.D.), "Fungal conversion of lignocellulosic biomass into ethanol." (Fall 2008; Current address: Research Engineer, Edeniq, Visalia, CA).
6. Yashodhara Kambam (M.S.), "Bioenergy production from fungal treated stillage." (Summer 2008; Current address: Moved to India).
7. Nagapadma Jasti (Ph.D.), "Attached growth fungal process for protein recovery from corn processing residues." (Fall 2006; Current address: self-employed, Houston, TX).
8. Karen Bodach (M.S.) "Biological pretreatment of industrial wastewater for volatile fatty acids removal." (Spring 2006; Consulting engineer in Chicago).
9. Sindhuja Sankaran (M.S.), "Ozone as a selective disinfectant for nonaseptic fungal cultivation on corn-processing wastewater." (Spring 2006; Current address: Asst. Prof., Washington State University, WA, USA).
10. Bin Xie (M.S.), "Adsorptive removal of naturally occurring trace toxins from water: Case studies of arsenic (V) and estrogens." (Summer 2006; Current address: Project Engineer, Oceaneeing, Houston, TX).
11. Mary Rasmussen (M.S.), "Sequential saccharification of corn fiber by the brown rot fungus, *Gloeophyllum trabeum*, and ethanol production by *Saccharomyces cerevisiae*." (Summer 2006; Current address: Unknown).

12. Prachand Shrestha (M.S.), "Saccharification of corn fiber by *Phanerochaete chrysosporium* in solid-state fermentation and subsequent fermentation of hydrolysate into ethanol." (Summer 2006; Current address: Senior Research Engineer, Edeniq, Visalia, CA).
13. Yongjie Miao (M.S.), "Selective disinfection for nonaseptic fungal treatment of food processing wastewater." (Spring 2005; Current address: Engineer at Nationwide Children's Hospital, Columbus, OH).

(E) Thesis Supervision Committee Member

At University of Hawai'i at Mānoa

1. David Harris (M.S.), "An Investigation of Ambient Drying of Eucalyptus Grandis Wood." (Spring 2016).
2. Lavane Kim (Ph.D.), "Low cost soil-based biological treatment for water reclamation." (Spring 2015).
3. Daniel Amato (Ph.D.), "Evaluating the coastal impact of ocean discharge of wastewater effluent in Hawaii." (Fall 2014).
4. Seung Hyun Lee (Ph.D.), "Hybrid combination of emerging food processing technologies: Microwave and pulse ohmic heating." (Summer 2014)
5. Seerwan Ahmed Abdullah (Ph.D.), "Alternative processing techniques for pasteurization of liquid foods: microwave, ohmic heating and ultraviolet light." (Fall 2012).
6. Grace Chee (M.S.), "Electrochemical impedance spectroscopy and laser photoselectivity with gold nanoparticles for food applications." (Fall 2012).
7. Juanta Mathew (Ph.D.), "Enhanced biohydrogen production from glycerol using genetically engineered *E. coli*." (Spring 2010).
8. Seung Hyun Lee (M.S.), "Ohmic heating: CFD modeling of heating pattern of multiphase food and Pretreatment for subsequent ethanol production." (Summer 2010).
9. Michael Porter (M.S.), "*In situ* crystallization of native poly(3-hydroxybutyrate) granules in varying environmental conditions." (Fall 2010).

At Iowa State University

1. Monchai Wongkarnka (Ph.D.), "Treatment of food processing wastewater and recovery of single cell yeast." (Summer 2005; Current address: Engineer, Industrial Estate Authority of Thailand).
2. Yu-Ting Huang (M.S.), "Biological hydrogen production from biomass-derived sugars." (Spring 2006; Current address: Unknown).
3. Jaeho Ho (Ph.D.), "Anaerobic membrane bioreactor for treatment of low strength wastewater." (Spring 2007; Current address: Research engineer, Doosan Hydro Technology, Inc., Tampa, FL, USA).
4. Ling Li (Ph.D.), "Use of fly ash for removal of emerging pollutants from treated effluent." (Spring 2008; Current address: unknown).
5. Thanapong Duangmanee (Ph.D.), "Anaerobic treatment of swine manure with concurrent odor control." (Summer 2009; Current address: Environmental engineer, Mae Fang Foundation, Chiang Mai, Thailand).

(F) Mentoring of Undergraduate and High School Students

At University of Hawai'i at Mānoa

1. Kacie Niimoto (Senior in Biological Engineering, University of Hawaii at Manoa) (Summer 2017 to present).
2. Sreelakshmi Kutty (Sophomore in Civil and Environmental Engineering, University of Hawaii at Manoa) (Fall 2016 to present). (Recipient of Undergraduate Research Opportunities Program (UROP) Grant). Honors student.
3. Nutnicha Jarasjanyawat and Araya Schroder (High school students), Wells International School, Bangkok, Thailand (Jun 12 to Jul 21, 2017).
4. Brent Wakuzawa (Senior in Biological Engineering, University of Hawaii at Manoa) (Spring 2016 to Spring 2017) (Recipient of Undergraduate Research Opportunities Program (UROP) Grant). Honors student.
5. Charlene Leodones and Aliyah Abanes (High School student, St. Andrew's Priory, Honolulu, HI) (Sep 2016- present).
6. Anavat Siamwala and Thoranin Hlowjitsieng (High school students), Wells International School, Bangkok, Thailand (Jun 13 to Jul 22, 2016).

7. Noeloikeau Charlot and Zackery Morrison (Senior in Biological Engineering, University of Hawaii at Manoa), Mentor of Senior Design Project; "Design of modular hydroponic system" (Fall 2015 to Spring 2016).
8. Sean Reseigh (Senior in Tropical Plant and Soil Sciences (TPSS), University of Hawaii at Manoa) (Spring 2016) (Recipient of Undergraduate Research Opportunities Program (UROP) Grant). Co-supervised with Prof. Jonathan Deenik of TPSS.
9. Addy Oppegaard (Middle School student, Mid Pacific Institute, Honolulu, HI (Nov 2015- May 2016).
10. Noeloikeau Charlot (Junior in Biological Engineering, University of Hawaii at Manoa) (Spring 2015).
11. Sreelakshmi Kutty and Ariana Kim (High School student, St. Andrew's Priory, Honolulu, HI) (Nov 2011- Jan 2012; Dec 2012-Feb 2013 and Aug 2013 – May 2016).
12. Kimberly Tatsuyama (Junior in Biological Engineering, University of Hawaii at Manoa) (Spring 2015).
13. Sheldon Arakawa (Junior in Biological Engineering, University of Hawaii at Manoa) (Summer 2014 to Spring 2015).
14. Samira Fatemi (Senior in Biological Engineering, University of Hawaii at Manoa (Summer 2014 to summer 2015; Current address: Ph.D. student, Purdue University).
15. Laura Martinez (Junior in Biological Engineering, University of Hawaii at Manoa) (Aug - Dec 2013; Current address: Engineer with local construction Co.).
16. Raquel Auwae (Senior in Biological Engineering, University of Hawaii at Manoa) (Aug - Dec 2013; Current address: Thermocouple Engineer at Sumitomo Rubber USA).
17. Joyce Lin (Senior in Biological Engineering, University of Hawaii at Manoa) (Oct 2012 - May 2013; Current address: Unknown).
18. Victoria Lansdown (High School student, St. Andrew's Priory, Honolulu, HI) (Jan 2011- Sep 2012; Current address: Unknown).
19. Nora Robertson (Senior in Biological Engineering, University of Hawaii at Manoa) (Jun - Aug 2011 Current address: Tissue Genesis, HI).

20. Edward Drielak (Senior in Biological Engineering, University of Hawaii at Manoa) (Jun - Aug 2011; Current address: Research assistant, University of Hawaii at Manoa).
21. Jessica Schmidt (Senior in Biological Engineering, Cornell University, Ithaca, NY) (Jun – Aug 2010; Current address: Unknown).
22. Travis Nakagawa (Senior in Biological Engineering, University of Hawaii) (May – Aug 2009; St. Jude Medical, Inc.).
23. Christopher N. Vassallo (Senior in Dept. of Biology, University of Hawaii) (Jan – May 2009; Current address: Unknown).
24. Sarah Tamashiro and Lindsay Fujimoto (High School students, St. Andrew's Priory High School, Honolulu, HI) (2009 and 2010; Current address: Senior, Occidental College (Sarah); Senior, Grinnell College (Lindsay)).
25. Elise Minkin (High School student, Punahou School, Honolulu, HI) (May, 2009-Aug 2010: Senior University of Pennsylvania).

At Iowa State University

1. Victoria Young, Lincoln University: AGEP (Jun – Jul 2007).
2. Jeremy Riener, Iowa State University (Jan – May 2007).
3. James Fang, Iowa State University (Jan – May 2007).
4. Cindy Hanson, University of Idaho: Program for Women in Science and Engineering at Iowa State University (May – Jul 2005).

(G) External Advisees at Asian Institute of Technology, Bangkok, Thailand

1. Bunrith Seng (M.S.), "Effect of chemical-ultrasound pretreatment on bioenergy production from thickened waste activated sludge (TWAS)." (May 2008; Current address: Senior Manager, CINTRI (Cambodia), Institute of Technology of Cambodia).
2. Navaratnam Navaneethan (M.S.), "Anaerobic digestion of ultrasound pretreated thickened waste activated sludge (TWAS) to enhance bioenergy production." (May 2007; Current address: Water/Wastewater Engineer and Biogas Specialist, Toronto, Ontario, Canada).

3. Monruedee Moonkhum (M.S.), "Aerobic digestion of ultrasound pretreated thickened waste activated sludge (TWAS)." (May 2007; Current address: Lecturer at Panyapiwat Institute of Technology, Thailand).
4. Saoharit Nitayavardhana (M.S.), "Ultrasound pretreatment of cassava chips to enhance bioethanol production." (May 2007; Current address: Assistant Professor, Chiang Mai University, Thailand).

(H) External Reviewer of Ph.D. Students/Dissertations

1. Pritam Kumar Dikshit (Ph.D.), "Bioconversion of crude glycerol to dihydroxyacetone using immobilized *gluconobacter oxydans*: process design, optimization and intensification" Department of Chemical Engineering, Indian Institute of Technology (IIT)-Guwahati, India (Summer 2017).
2. Jarupat Kanjanarong (Ph.D.), "Hydrogen sulfide removal from biogas produced during anaerobic digestion of palm oil mill wastewater" Department of Industrial Biotechnology, Prince of Songkla University, Hatyai, Thailand (Summer 2017). (External member; Invited for onsite visit).
3. Ratul Kumar Das (Ph.D.), "Production of fumaric acid from different agro-industrial wastes through solid and submerged fermentation." Institut national de la recherche scientifique (INRS), Centre for Water, Earth and Environment, Québec, Canada (Spring 2016).
4. Julius Gbenga Akinbomi (Ph.D.), "Fermentative hydrogen and methane productions using membrane bioreactors." University of Borås, Borås, Sweden (Fall, 2015). (Served as an opponent; Invited for onsite visit).
5. Muhammad Yasin (Ph.D.), "High gas-liquid mass transfer bioreactor for microbial syngas utilization." Gwanju Institute of Science and Technology, South Korea (2015).
6. Jayashri Kala (Ph.D.), "Environmental Management in Jaipur City, India." Malaviya National Institute of Technology, Jaipur, India (2015).
7. Abraham Mebrat Asmare (Ph.D.), "Investigation of use of microalgae consortium for wastewater treatment and algal biomass production." Addis Ababa Institute of Technology, Addis Ababa, Ethiopia (Summer 2014). (Served as a Major external examiner; Invited for onsite visit).
8. Rahul Singh Chutia (Ph.D.), "Thermochemical Conversion of Bioenergy Byproducts to Bio-oil and Biomaterials." Tezpur University, India (2014).

9. Supawat Chaikasem (Ph.D.), "Effect of PVA-gel on Performance Improvement of Two Stage Thermophilic Anaerobic Membrane Bioreactor." Asian Institute of Technology, Thailand (2014).

REFEREED CONFERENCE PRESENTATIONS (PODIUM) (speaker with "**")

1. Sawatdeenarunat, C., and **Khanal, S. K.***, 2017. Innovative decentralized biorefinery for lignocellulosic biomass: Integrating anaerobic digestion with thermochemical conversion. *15th World Congress on Anaerobic Digestion*, Oct 18-20, 2017, Beijing, China.
2. Wongkiew, S*., Popp, B.N., Park, M.R., Chandran, K., and **Khanal, S.K.** Aquaponic system - An emerging technology for resource recovery. *2nd International Resource Recovery Conference*, Aug 5-9, 2017, Columbia University, New York, NY.
3. Shrestha, S*., Fonoll, X., Dosta, J., Mata-Alvarez, J., **Khanal, S.K.**, and Lutgarde R. Natural strategies for enhanced biogas production from lignocellulosic biomass revealed through the synergistic application of microbial and engineering techniques. *1st Symposium on Microbiological Methods for Waste and Water Resource Recovery*, May 18-19, 2017, Delft, The Netherlands.
4. Surendra, K.C., and **Khanal, S.K.***. High yielding tropical energy crops for bioenergy production: effects of plant components, harvest years, and locations on biomass composition and subsequent biogas production. *International Conference on Progress in Biogas IV*, University of Hohenheim, Mar 8-11, 2017, Stuttgart, Germany.
5. Nguyen, D., and **Khanal, S.K.***. Redox potential-based micro-aeration process control for anaerobic digestion. *1st International Conference on Bioenergy, Bioproducts & Environmental Sustainability*, Oct 23-26, 2016, Sitges, Spain.
6. Sawatdeenarunat. C, and **Khanal, S.K.***. Enhanced volatile fatty acids production with micro-oxygenation during anaerobic digestion of lignocellulosic biomass. *1st International Conference on Bioenergy, Bioproducts & Environmental Sustainability*, Oct 23-26, 2016, Sitges, Spain.
7. Shrestha, S., Fonoll, X*., Mata-Alvarez, J., Raskin, L., **Khanal, S. K.**, 2015. Anaerobic co-digestion of lignocellulosic biomass and cow manure using

- rumen content as inoculum. *14th World Congress on Anaerobic Digestion*, Nov 15-18, 2015, Viña del Mar, Chile.
8. K.C. Surendra Fonoll, X*., and **Khanal, S. K.** Does maturity and size reduction matter on digestibility and methane yield of energy crop? *14th World Congress on Anaerobic Digestion*, Nov 15-18, 2015, Viña del Mar, Chile.
 9. K.C. Surendra*, Olivier, R., Tomberlin, J.K., and **Khanal S.K.** Insect farming on organic wastes: A novel strategy to produce biodiesel and animal feed with concurrent waste remediation. *8th International Conference on Challenges in Environmental Science and Engineering, CESE-2015*, Sep 28 – Oct 2, 2015, Sydney, Australia.
 10. K.C., Surendra*, and **Khanal, S. K.** Effect of crop maturity stage and size reduction on digestibility of energy crop for biomethane production by anaerobic digestion. *American Society of Agricultural and Biological Engineers (ASABE) 2014 Annual International Meeting*, Jul 13-16, 2014, Montreal, QC, Canada.
 11. Drielak, E*., and **Khanal, S.K.** Investigation of acid concentration, retention time and temperature on dilute acid pretreatment of banagrass. *American Society of Agricultural and Biological Engineers (ASABE) 2014 Annual International Meeting*, Jul 13-16, 2014, Montreal, QC, Canada.
 12. Takara, D*., and **Khanal, S.K.** Biorefining potential of a high-yielding tropical feedstock for biofuel and biobased products. *American Society of Agricultural and Biological Engineers (ASABE) 2014 Annual International Meeting*, Jul 13-16, 2014, Montreal, QC, Canada.
 13. Nitayavardhana, S*., and **Khanal, S.K.** Bioconversion of sugarcane-to-ethanol wastewater into fungal protein for animal feed applications. *American Society of Agricultural and Biological Engineers (ASABE) 2014 Annual International Meeting*, Jul 13-16, 2014, Montreal, QC, Canada.
 14. **Khanal, S.K.*.** and Nitayavardhana, S. Sugarcane-to ethanol biorefinery: Protein-rich fungal biomass production on vinasse for animal feed and organic food production. *10th International Conference on Renewable Resources and Biorefineries*, Jun 4-6, 2014, Valladolid, Spain.
 15. **Khanal, S.K.*.** and Takara D. Biorefining tropical feedstocks for biofuel and biobased products. *1st International Congress on Bioenergy*, May 23-25, 2013, Portalegre, Portugal.

16. K.C., S., and **Khanal, S.K***. Ensilage strategy to pretreat green grass for enhanced biomethane production *27th Annual Biocycle West Coast Conference 2013*, Apr 9-11, 2013, San Diego, CA.
17. Takara, D., Hashimoto, A.G., and **Khanal, S.K***. Green processing: a biorefinery perspective. *Sun Grant National Conference: Science for Biomass Feedstock Production and Utilization*, Oct 2-5, 2012, New Orleans, LA.
18. Hashimoto, A. G*., Arnold, J., Ayars, J., Crow, S., Eggeman, T., Jakeway, L., Karkee, M., **Khanal, S.K.**, Kiniry, J., Matsunaga, J., Meki, N., Murthy, G., Nakahata, M., Ogoshi, R., Turano, B., Turn, S., Yanangida, J., and Zhang, Q. High-Yield Tropical Biomass for Advanced Biofuels. *Sun Grant National Conference: Science for Biomass Feedstock Production and Utilization*, Oct 2-5, 2012, New Orleans, LA.
19. Takara, D*., Hashimoto, A. G. and **Khanal, S. K.** Green processing of dedicated energy crops for biofuel and biobased products. *International Conference on Challenges in Environmental Science and Engineering (CESE) 2012*, Sep 9-13, 2012, Melbourne, Australia.
20. Munasinghe, P.C.*, and **Khanal, S. K.** Evaluation and analytical modeling of carbon monoxide mass transfer using a composite hollow fiber (CHF) membrane bioreactor in syngas fermentation. *International Conference on Challenges in Environmental Science and Engineering (CESE) 2012*, Sep 9-13, 2012, Melbourne, Australia.
21. Nitayavardhana, S*., Kerati, I, Pavasant, P., and **Khanal, S. K.** Biofuel residues conversion into aquatic feed via fungal fermentation. *International Conference on Challenges in Environmental Science and Engineering (CESE) 2012*, Sep 9-13, 2012, Melbourne, Australia.
22. Takara, D.* , and **Khanal, S. K.** Wet processing of banagrass: A biorefinery perspective. *American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting*, Aug 7-10, 2011, Louisville, KY.
23. Munasinghe, P.C.*, and **Khanal, S. K.** Evaluation of hydrogen and carbon monoxide mass transfer and a correlation between myoglobin-protein bioassay and gas chromatography method for carbon monoxide determination. *American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting*, Aug 7-10, 2011, Louisville, KY.
24. Nitayavardhana, S.* and **Khanal, S. K.** Biodiesel-derived crude glycerol bioconversion to animal feed: A sustainable option for a biodiesel refinery.

American Society of Agricultural and Biological Engineers (ASABE) 2011 Annual International Meeting, Aug 7-10, 2011, Louisville, KY.

25. Takara, D.*, and **Khanal, S. K.** Enhanced sugar release and co-product generation of green banagrass. *Asian Congress on Biotechnology (ACB)*, May 11-15, 2011, Shanghai, China.
26. Takara, D*., and **Khanal, S. K.** Green processing of banagrass (*Pennisetum purpureum*) for enhanced sugar release. *Pacific Rim Summit on Industrial Biotechnology and Bioenergy*, Dec 11-14, 2010, Honolulu, HI.
27. Takara, D*., and **Khanal, S. K.** Optimization of chemical pretreatment of banagrass (a variety of *Pennisetum purpureum*) for enhanced sugar release. *Pacific Rim Summit on Industrial Biotechnology and Bioenergy*, Nov 8-11, 2009, Honolulu, HI.
28. Munasinghe, P.C*., and **Khanal, S. K.** Syngas fermentation to biofuel: evaluation of carbon monoxide mass transfer in different reactors configurations. *Pacific Rim Summit on Industrial Biotechnology and Bioenergy*, Nov 8-11, 2009, Honolulu, HI.
29. Montalbo-Lombay, M.*, **Khanal, S.K.**, Van Leeuwen, J., Raman, D.R., Dunn Jr., L., and Grewell, D. Simultaneous saccharification and fermentation of ultrasonically treated corn slurry. *American Society of Agricultural and Biological Engineers Annual International Meeting*, Jun 21-24, 2009, Reno, NV.
30. Montalbo-Lombay, M., **Khanal, S.K.**, Van Leeuwen, J., Raman, D.R., Dunn Jr., L., and Grewell, D.* Ultrasonic pretreatment of corn slurry in batch and continuous systems. *American Society of Agricultural and Biological Engineers Annual International Meeting*, Jun 21-24, 2009, Reno, NV.
31. **Khanal, S. K.**, Montalbo, M*., Van Leeuwen, J., Srinivasan, G., and Grewell, D. Ultrasonic enhanced liquefaction and saccharification of corn for biofuel production. *American Society of Agricultural and Biological Engineers Annual International Meeting*, Jun 17-20, 2007, Minneapolis, MN.
32. Karki, B*., Lamsal, B. P., Grewell, D., Van Leeuwen, J., and **Khanal, S. K.** Ultrasonication in soy processing for enhanced protein and sugar yields and subsequent bacterial nisin production. *American Society of Agricultural and Biological Engineers Annual International Meeting*, Jun 17-20, 2007, Minneapolis, MN.

33. Rasmussen, M*., **Khanal, S. K.**, Pometto, A. L., and Van Leeuwen, J. Thin stillage treatment from dry grind ethanol plants with fungi. *American Society of Agricultural and Biological Engineers Annual International Meeting*, Jun 17-20, 2007, Minneapolis, MN.
34. Shrestha, P*., Vincent, M., **Khanal, S. K.**, Pometto, A. L., and Van Leeuwen, J. Fungal fermentation of corn fiber to enhance ethanol production. *American Society of Agricultural and Biological Engineers Annual International Meeting*, Jun 17-20, 2007, Minneapolis, MN.
35. Akin, B*., **Khanal, S. K.**, Sung, S., Grewell, D., and Van Leeuwen, J. Effect of total solids concentration on ultrasonic disintegration of waste activated sludge. *IWA Specialized Conference – Facing Sludge Diversities: Challenges, Risks, and Opportunities*, Mar 28-30, 2007, Antalya, Turkey.
36. **Khanal, S. K*.**, Isik, H., Sung, S., and Van Leeuwen, J. Ultrasound pretreatment of waste activated sludge: evaluation of sludge disintegration and aerobic digestibility. *IWA World Water Congress and Exhibition*, Sep 10-14, 2006, Beijing, China.
37. **Khanal, S. K*.**, Isik, H., Sung, S., and Van Leeuwen, J. Ultrasonic conditioning of waste activated sludge for enhanced aerobic digestion. *IWA Specialized Conference - Sustainable Sludge Management: State of the Art, Challenges and Perspectives*, May 29-31, 2006, Moscow, Russia.
38. **Khanal, S. K*.**, Isik, H., and Sung, S. Effects of ultrasound pretreatment on aerobic digestibility of thickened waste activated sludge. *7th Specialized Conference on Small Water and Wastewater Systems*, Mar 7 -10, 2006, Mexico City, Mexico.
39. Ho, J., **Khanal, S. K*.**, and Sung, S. Anaerobic membrane bioreactor for treatment of synthetic municipal wastewater at ambient temperature. *7th Specialized Conference on Small Water and Wastewater Systems*, Mar 7 - 10, 2006, Mexico City, Mexico.
40. Huang, J.-C*., and **Khanal, S. K.** Biological odor control technology for high sulfate wastes. *4th Symposium on Anaerobic Digestion of Solid Waste*, Aug 31- Sept 2, 2005, Copenhagen, Denmark.
41. Jasti, N*., **Khanal, S. K.**, Pometto, A. L., and Van Leeuwen, J. Attached growth fungal system for food processing wastewater treatment and high value protein recovery. *78th Annual Conference & Exposition (WEFTEC)*, Oct 29 - Nov 2, 2005, Washington, D.C.

42. Jasti, N*., **Khanal, S. K.**, Pometto, A. L., and Van Leeuwen, J. Treatment of food processing wastewater using attached growth fungal system. *1st IWA-ASPIRE (Asia Pacific Regional Group) Conference & Exhibition*, Jul 10-15, 2005, Singapore.
43. Huang, Y.-T., Chen, S.-Y., **Khanal, S. K*.**, and Sung, S. Biological hydrogen production potential of cellulose-derived sugars. *1st IWA-ASPIRE (Asia Pacific Regional Group) Conference & Exhibition*, Jul 10-15, 2005, Singapore.
44. Wongkamka, M., **Khanal, S. K*.**, Eliosov, B., Leeuwen, J., and Ellis, T.G. Production of aerobic yeast from industrial process stream. *1st IWA-ASPIRE (Asia Pacific Regional Group) Conference & Exhibition*, Jul 10-15, 2005, Singapore.
45. **Khanal, S. K*.**, and Huang, J.-C. Treatment of high sulfate wastewater in upflow anaerobic filter. *Asian WaterQual 2003*, Oct 19-23, 2003, Bangkok, Thailand.
46. Li, C., Ho, J. H., **Khanal, S. K.**, and Sung, S*. Temperature-phased anaerobic digestion (TPAD) of food waste together with wax-coated cardboard. *Asian WaterQual 2003*, Oct 19-23, 2003, Bangkok, Thailand.
47. Sung, S., **Khanal, S. K.**, Chen, W.-H*., and Cao, Q. Bioconversion of sulfide to elemental sulfur in trickling filter. *Asian WaterQual 2003*, Oct 19-23, 2003, Bangkok, Thailand.
48. **Khanal, S. K.**, Shang, C*., and Huang, J.-C. Use of ORP to control oxygen dosing for online sulfide oxidation in anaerobic treatment of high sulfate wastewater. *IWA 3rd World Water Congress*, Apr 7-12, 2002, Melbourne, Australia.
49. **Khanal, S. K*.**, and Huang, J.-C. Anaerobic biotechnology for the treatment of sulfate-laden wastewater. *IWA-WISA sponsored conference on Managing Water and Waste in the New Millennium*, May 23-26, 2000, Midrand, Johannesburg, South Africa.

TECHNICAL PRESENTATIONS/POSTERS, MEETINGS AND WORKSHOPS

1. Nyugen, D., and **Khanal, S. K.**, 2017 Automated micro-aeration system for enhancing the process stability of anaerobic digestion at high organic loading rates. *15th World Congress on Anaerobic Digestion*, Oct 18-20, 2017, Beijing, China.

2. Shilva Shrestha, S., Fonoll, X., Dosta, J., Mata-Alvarez, J., **Khanal, S.K.**, and Lutgarde R. Natural strategies for enhanced biogas production from anaerobic digestion of lignocellulosic biomass. 3rd International Conference on Biogas Microbiology (ICBM-3), May 1-3, 2017, Wageningen, The Netherlands.
3. Batsaikhan, M., and **Khanal, S. K.** Recovery of high-value fungal protein from agr--processing wastewater with simultaneous water reclamation. Poster Presentation. *29th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 7-8, 2017.
4. Phuttaro, C., Chaiprapat, S., and **Khanal, S. K.** Effects of high pressure pretreatment on anaerobic digestion of Napier grass. Poster Presentation. *29th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 7-8, 2017.
5. Wakizawa, B, and **Khanal, S.K.** Reduction of inhibitory compounds generated from high pressure treatment of *Gracilaria Salicornia*. Oral Presentation. *29th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 7-8, 2017.
6. Hawaii Aquaculture and Aquaponics Conference, Feb 24, 2017, Kapiolani Community College, Honolulu, HI.
7. S-1041: The Science and Engineering for a Biobased Industry and Economy Meeting, Aug 8 -9, 2106, USDA Western Regional Research Center, Albany, CA.
8. Sawatdeenarunat, C., and **Khanal, S. K.** Enhanced volatile fatty acids production with micro-oxygenation during anaerobic digestion of lignocellulosic biomass. Poster Presentation. *28th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 8-9, 2016.
9. Wongkiew, S., and **Khanal, S.K.** Nitrogen transformations in floating-raft aquaponic systems. Poster presentation. *28th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 9-10, 2016.

10. Nguyen D., and **Khanal, S. K.** Oxidation reduction potential (ORP)-based micro-aeration system for anaerobic digestion. Poster presentation. *28th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 8-9, 2016.
11. Shrestha, S., Fonoll, X., Mata-Alvarez J., Raskin L., and **Khanal, S.K.** Anaerobic digestion of lignocellulosic biomass using rumen content as inoculum for enhanced biogas production. Poster presentation. *S-1041: Science and Engineering for a Biobased Industry and Economy, Research Meeting*, Aug 10-11, 2015, Wooster, OH.
12. Nguyen, D. and **Khanal, S.K.** Oxidation reduction potential (ORP)-based micro-aeration system for anaerobic digestion". Poster presentation. *S-1041: Science and Engineering for a Biobased Industry and Economy, Research Meeting*, Aug 10-11, 2015, Wooster, OH.
13. Driolak, E., and **Khanal S.K.** Dilute acid pretreatment: investigation of acid concentration, time, temperature and solid to liquid ratio on total sugar release from Napier grass. Poster presentation. *S-1041: Science and Engineering for a Biobased Industry and Economy, Research Meeting*, Aug 10-11, 2015, Wooster, OH.
14. Sawatdeenarunat, C., and **Khanal, S.K.** Enhanced volatile fatty acids production with oxygenation during anaerobic digestion of lignocellulosic biomass. Poster presentation. *S-1041: Science and Engineering for a Biobased Industry and Economy, Research Meeting*, Aug 10-11, 2015, Wooster, OH.
15. Sawatdeenarunat, C., and **Khanal, S. K.** Enhanced volatile fatty acids production with micro-oxygenation during anaerobic digestion of lignocellulosic biomass. Poster Presentation. *27th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 10-11, 2015.
16. Wongkiew, S., and **Khanal, S.K.** Nitrogen transformations in floating-raft aquaponic systems. Oral presentation. *27th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 10-11, 2015.
17. K.C. Surendra, Olivier, R., Tomberlin, J. K., and **Khanal, S.K.** Bioconversion of food wastes to biodiesel and animal feed through insect farming. Poster

- presentation. *27th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 10-11, 2015.
18. Nguyen D., and **Khanal, S. K.** Oxidation reduction potential (ORP)-based micro-aeration system for anaerobic digestion. Poster presentation. *27th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 10-11, 2015.
19. Shrestha, S., Fonoll, X., Mata-Alvarez, J., Raskin, L., and **Khanal, S.K.** Anaerobic digestion of lignocellulosic biomass using rumen content as inoculum for enhanced biogas production. Oral presentation. *27th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 10-11, 2015.
20. Kanjanarong, J., Boonsawang, P., and **Khanal, S.K.** Hydrogen sulfide (H₂S) removal by using biochar. Poster presentation. *27th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 10-11, 2015.
21. Hashimoto, A, Ogoshi, R., Takara, D., **Khanal, S.K.**, and Crow, S. High-yield tropical feedstocks for bioenergy production. *Poster Presentation. European Biomass Energy Conference*, Jun 23-26, 2014, Hamburg, Germany.
22. Drielak, E., and **Khanal, S. K.** Examination of factors affecting sugar release from Napier grass during dilute acid pretreatment. *Oral Presentation. 26th Annual College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawaii at Manoa, Apr 13-14. 2014.
23. Martinez, L., Drielak, E., and **Khanal, S. K.** Co-product potential of biofuel residue streams generated from green processing of Napier grass. *Oral presentation. 26th College of Tropical Agriculture and Human Resources (CTAHR) and College of Engineering (COE) Student Research Symposium*, University of Hawai'i at Mānoa, Apr 13-14. 2014.
24. *13th World Congress on Anaerobic Digestion*, Jun 25-28, 2013, Santiago de Compostela, Spain.

25. *S-1041: The Science and Engineering for a Biobased Industry and Economy meeting*, Jun 17-18, 2013, Maui, HI, USA.
26. *Water Environment Federation Mini Symposium on Activated Sludge on its 100th Birthday: Challenges and Opportunities*. Jun 9-11, 2013, Easton, MA.
27. Takara, D., Hashimoto, A.G., and **Khanal, S.K.** Green processing of high yield tropical grass for biofuel and biobased products. *S-1041-The Science and Engineering for a Biobased Industry and Economy Annual Meeting and Symposium*, Aug 6-7, 2012, Waterfront Center (USDA), Washington, DC.
28. Takara, D. and **Khanal, S. K.** Green processing of tropical feedstocks for biofuel and biobased products. *College of Tropical Agriculture and Human Resources Research (CTAHR) Symposium*, University of Hawaii at Manoa, Apr 13-14, 2012.
29. Nitayavardhana, S. and **Khanal, S. K.** Green processing of tropical feedstocks for biofuel and biobased products. *College of Tropical Agriculture and Human Resources Research (CTAHR) Symposium*, University of Hawaii at Manoa, Apr 13-14, 2012.
30. Munasinghe, P.C. and **Khanal, S. K.** Green processing of tropical feedstocks for biofuel and biobased products. *College of Tropical Agriculture and Human Resources Research (CTAHR) Symposium*, University of Hawaii at Manoa, Apr 13-14, 2012.
31. *21st Biogas Annual Conference and Biogas Trade*, Jan 10-12, 2012, Bremen, Germany.
32. *S-1041: The Science and Engineering for a Biobased Industry and Economy meeting*, Aug 1-2, 2011, Stillwater, OK.
33. *20th Biogas Annual Conference and Biogas Trade*, Jan 11-13, 2011, Nuremberg, Germany.
34. *Pacific Rim Summit on Industrial Biotechnology and Bioenergy*, Dec 11-14, 2010, Honolulu, HI, USA.
35. *S-1041: The Science and Engineering for a Biobased Industry and Economy meeting*, Aug 1-2, 2010, Eastern Regional Research Center, USDA, Wyndmoor, PA.
36. *Pacific Rim Summit on Biotechnology and Bioenergy*, Nov 8-11, 2009, Honolulu, HI.

37. *S-1041: The Science and Engineering for a Biobased Industry and Economy meeting*, Sep 21-22, 2009, Pacific Northwest National Laboratory, Richland, WA.
38. *Sixth Industrial Biotechnology and Bioprocessing*, Jul 19-22, 2009, Montreal, Qubec, Canada.
39. *Sustainable Bioenergy: Focus on the Future of Biofuels and Chemicals*, Apr 13-14, 2006, University of Illinois, Urbana-Champaign, Urbana, IL.
40. *BIO Conference on Biobased Industry Outlook*, Aug 29-30, 2005, Iowa State University Ames, IA.
41. *Biotechnology Byproducts Consortium Symposium*, Oct 27-28, 2004, University of Iowa, Iowa City, IA.
42. *US Department of Energy Workshop on Hydrogen Production via Direct Fermentation*, Jun 9, 2004, Baltimore, MD.
43. *BIO Conference on Biobased Industry Outlook*, Mar 7-8, 2004, Iowa State University, Ames, IA.
44. *Water Environment Federation: Charting the Future Direction of Bioenergy Technologies*, Aug 14-15, 200, Tulane University, New Orleans, LA.
45. *US Department of Energy Hydrogen and Fuel Cells, 2003 Annual Merit Review*, May 19- 22, 2003, Berkeley, CA.
46. *Iowa Academy of Science, 115th Annual Meeting*, Apr 25 - 26, 2003, Des Moines, IA.
47. *Water Environment Federation: WEFTEC 75th Annual Technical Exhibition and Conference*, Sep 28 - Oct 2, 2002, Chicago IL.

KEYNOTE/INVITED SPEAKER

1. Keynote speaker, International Conference on Alternative Fuels and Energy – ICAFE-2017, Daegu, South Korea (Oct 23-25, 2017). "Anaerobic digestion biorefinery for bioenergy and biobased products."
2. Invited speaker, International Conference on Emerging Trends in Biotechnology for Waste Conversion (ETBWC-2017) and XIV Convention of the Biotech Research Society, CSIR-National Environmental Engineering

- Research Institute, Nagpur, India (Oct 8-10, 2017). "Anaerobic digestion process control via oxidation-reduction potential (ORP)-based micro-aeration."
3. Invited speaker, Faculty of Engineering, Prince of Songkla University, Hat Yai, Thailand (Jul 31, 2017). "*Oxidation-reduction potential (ORP)-based micro-aeration for anaerobic digestion process stability at high organic loading rate.*"
 4. Keynote speaker, The 7th International Conference on Fermentation Technology for Value-added Agricultural Products and the 12th Asian Biohydrogen & Biorefinery Symposium, Khon Kaen, Thailand (Jul 26-28, 2017). "*Anaerobic Biorefinery of Lignocellulosic Feedstock to Produce Bioenergy and Biobased Products.*"
 5. Keynote speaker, Water Environment Association of the Philippines Convention 2017, Manila, Philippines (Jul 19-21, 2017). "Waste to energy: Current status and perspectives."
 6. Invited speaker, School of Environmental Engineering and Science, Tongji University, Tongji, China (Jun 27, 2017). "*Anaerobic Digestion Process Control Using Oxidation-Reduction Potential (ORP).*"
 7. Keynote speaker, the 2nd International Conference on Biological Waste as Resource (BWR2017), Hong Kong (May 25–28, 2017). "*Biochar application in hydrogen sulfide removal from biogas.*"
 8. Invited speaker, 7th International Industrial Bioprocessing, Wuxi, China (May 21-24, 2017). "*Anaerobic digestion of lignocellulosic biomass using horizontal bioreactor with focus on decentralized biorefinery.*"
 9. Invited speaker, Montana Tech of the University of Montana, Butte, MT (Apr 28, 2017). "*Oxidation-reduction potential (ORP)-based micro-aeration for anaerobic digestion process stability at high organic loading rate.*"
 10. Keynote speaker, Joint Workshop - University of Hawaii and Tokyo University of Agriculture and Technology, Honolulu (Feb 21, 2017). "Renewable energy and climate change."
 11. Invited speaker, International conference on Bioprocessing India 2016, Center of Innovative and Applied Bioprocessing, Mohali, India (Dec 15-17, 2016). "*Anaerobic digestion of lignocellulosic biomass using horizontal bioreactor: Evaluation of long-term digester performance.*"

12. Invited speaker, International Conference on Strategies for Environmental Protection and Management and 29th Annual meeting of National Environmental Science Academy, Jawaharlal Nehru University, New Delhi, India (Dec 11-13, 2016). *"Waste-to-resources: opportunities and challenges."*
13. Invited speaker, International Conference on Current Trends in Biotechnology, Vellore, India (Dec 8-10, 2016). *"Anaerobic digestion of high yield energy crops for bioenergy production."*
14. Invited speaker, Dept. of Environmental Engineering and Science, National University of Singapore, Singapore (Dec 5, 2016). *"Anaerobic digestion of high yield energy crops."*
15. Invited speaker, 1st International Conference on Bioenergy, Bioproducts & Environmental Sustainability, Sitges, Spain (Oct 23-26, 2016). *"Converting biofuel process residues/wastes into protein-rich aquatic feed with simultaneous reclamation of treated effluent."*
16. Invited speaker, School of Environmental Science and Engineering, Sun Yat-Sen University, Guangzhou, China (Aug 2, 2016). *"Tips on writing research paper."*
17. Invited speaker, 4th S²NU-K²U Symposium on Waste-to-Energy, Seoul National University, Seoul Korea (July 1, 2016). *"Bioconversion of organic wastes into biofuel via insect farming."*
18. Invited speaker, College of Environmental Science and Engineering, Tongji University, Shanghai, China (June 9, 2016). *"Research and development in anaerobic biotechnology."*
19. Invited speaker, College of Environmental Science and Engineering, Shandong University, Jinan, China (June 17, 2016). *"Resource recovery from wastes/residues."*
20. Invited speaker, Shiv Nadar University, Gautam Nagar, India (April 21, 2016). *"Research and development: Interfacing energy and environment"*.

21. Invited speaker, Dept. of Environmental Engineering, National Ilan University, Ilan, Taiwan (April 19, 2016). "*Resource recovery from wastes/residues.*"
22. Invited speaker, Dept. of Environmental Engineering, National Ilan University, Ilan, Taiwan (April 19, 2016). "*Anaerobic waste treatment and bioenergy production.*"
23. Invited speaker, Dept. of International Environmental and Agricultural Science, Tokyo University of Agriculture and Technology, Tokyo, Japan (Dec 15, 2015). "*Bioenergy and resource recovery.*"
24. Invited speaker, International Conference on New Horizons in Biotechnology, Trivendrum, India (Nov 23-25, 2015). "*Anaerobic biorefinery for biofuel and biobased products.*"
25. Invited speaker, Swedish Centre for Resource Recovery, University of Borås, Borås, Sweden (Oct 27, 2015). "*Bioconversion of waste/residues into resources.*"
26. Invited speaker, The Sixteenth Royal Golden Jubilee - Ph. D. Congress (RGJ-Ph.D. Congress XVI), Pattaya, Thailand (Jun 11-13, 2015). "*My 12 years of research journey with Thai students and visiting scholars on energy and environment.*"
27. Invited speaker, Faculty of Agro-Industry, Prince of Songkla University, Hat Yai, Thailand (Jun 8, 2015). "*Environmental biotechnology and anaerobic digestion.*"
28. Invited speaker, Dept. of Environmental Science, Royal University of Phnom Penh (Jun 5, 2015). "*Anaerobic process for waste treatment.*"
29. Invited speaker, Ministry of Agriculture, Forestry and Fisheries, Kingdom of Cambodia (Jun 5, 2015). Delivered 3-hr workshop on "*Bioenergy-Anaerobic Digestion*" to engineers, scientist and field workers from the ministry.
30. Invited speaker, School of Energy and Environment, City University of Hong Kong, Hong Kong (Jun 1, 2015). "*Resource recovery from wastes.*"
31. Invited speaker, Leading Edge Technology 2015 (LET-2015), International Water Association, Food Waste Workshop, Hong Kong (May 31st, 2015). "*Co-treatment of organic solid wastes in the sewage treatment facilities for waste reduction and energy recovery.*"

32. Invited speaker, Dept. of Environmental Engineering, Chulalongkorn University, Bangkok, Thailand (May 29, 2015). "Research interfacing energy and environment"
33. Invited speaker, Local Feed Workshop, Aquatic Feeds and Nutrition Department Oceanic Institute of Hawaii Pacific University, Waimanalo, HI (Nov 21, 2014). "*Utilization of local agri-processing by-products to produce fungal protein for aquatic feed production.*"
34. Invited speaker, Dept. of Civil Engineering, Malaviya National Institute of Technology, Jaipur, India (Nov 11, 2014). "*Bioenergy and environment research?*" (For graduate students).
35. Invited speaker, Dept. of Civil Engineering, Malaviya National Institute of Technology, Jaipur, India (Nov 10, 2014). "*How can we build a circular society?*" (For undergraduate students).
36. Invited speaker, International Conference on Emerging Trends in Biotechnology (ICETB-2014), New Delhi, India (Nov 6-9, 2014). "*Fractionation of tropical feedstocks for bioenergy and biobased products.*"
37. Invited speaker, Department of Biotechnology, BOKU University of Natural Resources and Life Sciences, Vienna, Austria (Aug 29, 2014). "*Resource recovery from wastes/residues.*"
38. Invited speaker, Dept. of Civil and Environmental Engineering, Technion University – Israel Institute of Technology, Haifa, Israel (Jul 17, 2014). "*Bioconversion of water (water) into resources.*"
39. Invited speaker, School of Biochemical Engineering, Addis Ababa Institute of Technology, Addis Ababa, Ethiopia (Jun 27, 2014). "*Biotechnology for resource recovery from waste (water).*"
40. Invited speaker, Dept. of Civil and Environmental Engineering, Hong Kong University of Science and Technology, Hong Kong (May 16, 2014). "*Converting waste (water) into value-added products.*"
41. Invited speaker, Dept. of Civil and Environmental Engineering, Hong Kong University of Science and Technology, Hong Kong (May 15, 2014). "*Emerging trends in environmental biotechnology for waste valorization.*"

42. Invited speaker, Dept. of Environmental Engineering, Fudan University, Shanghai, China (May 13, 2014). "*Resource recovery from waste (water).*"
43. Invited speaker, College of Environmental Science and Engineering, Tongji University, Shanghai, China (May 12, 2014). "*Resource recovery from waste (water).*"
44. Invited speaker, International Conference on Progress on Biogas III (Sep 10-11, 2014), Stuttgart, Germany. "*Examine the effects of crop maturity and size reduction on digestibility of energy crop for biomethane production.*"
45. Invited speaker, 10th European Symposium on Biochemical Engineering Sciences, Lille, France (Sep 8 to 10, 2014). "*Green processing of tropical feedstocks for biofuels and high value co-products.*"
46. Invited speaker, State Institute of Agricultural Engineering and Bioenergy, Hohenheim University, Stuttgart, Germany (Jul 10, 2014). "*Biogas production from tropical crops.*"
47. Invited speaker, Universidad de Santander, Cucuta, Colombia (Apr 4, 2014). "*Sustainable bioenergy production: Opportunities and challenges.*"
48. Invited speaker, Chonnam National University, Gwanju, South Korea (Feb 27, 2014). "*Fractionation of tropical feedstocks for bioenergy and biobased products.*"
49. Invited speaker, Sustainability Center, University of Wisconsin (Dec 11, 2013). "*Sustainability: interfacing energy and environment.*"
50. Invited speaker, *International Conference on Advances in Biotechnology & Bioinformatics. 10th Convention of the Biotech Research Society, Pune, India (Nov 25-27, 2013).* "*Biorefinery concept for sugarcane-to-ethanol industries: production of protein-rich fungal biomass on vinasse as a protein ingredient for animal feed and organic food production.*"
51. Invited speaker, Centre for Environmental Science and Engineering (CESE) Indian Institute of Technology Bombay (IIT-B) (Nov 21, 2013). "*Technological alternatives for conversion of biomass to energy.*"
52. Keynote Speaker, Research Internships in Science and Engineering Scholar (RISE) Meeting (Jul 4, 2013). "*International education and research experience.*" Organized by DAAD Germany at Heidelberg University, Heidelberg, Germany.

53. Invited speaker, West Virginia State University, Charleston, WV, USA (Jun 6, 2013). "*Bioenergy/biobased product and environmental biotechnology research.*"
54. Invited speaker, State Institute of Agricultural Engineering and Bioenergy, Hohenheim University, Stuttgart, Germany (Jun 4, 2013). "*High-rate anaerobic digestion of energy crops.*"
55. Invited speaker, Center for Energy and Environment Policy, Imperial College London (Oct 26, 2012). "*Current status of bioenergy research in the United States.*"
56. Invited speaker, New Horizons in Biotechnology, Mini Symposia in Biofuels - Current perspectives and challenges for commercialization at conference, Trivendrum, India (Nov 21-24, 2011). "*Green processing of a tropical grass for advanced biofuel and biobased products.*"
57. Invited speaker, Malaviya National Institute of Technology (MNIT), Jaipur, India (Nov 25-26, 2011). "*Biotechnology for energy, environment and food security.*"
58. Invited speaker, NC 1023: Engineering for Food Safety and Quality, USDA Multi-state Committee Meeting, Honolulu, HI (Oct 3, 2011). "*Biorefinery for Hawaii.*"
59. Invited speaker, Bioengineering Workshop for Middle Schools, Honolulu, HI (Apr 23, 2011). "*Biofuel/bioenergy from renewable bioresources.*"
60. Invited speaker, Korea University, Sejong, South Korea (Oct. 30, 2010). "*Green growth: energy, environment and food.*"
61. Invited speaker, 2010 Asian Pacific Clean Energy Summit and Workshop, Honolulu, HI (Aug 31, 2010). "*Integrated education and research in renewable energy: biofuel*".
62. Invited speaker, Bangor University, Gwynedd, United Kingdom (Jul 12, 2010). "*Ultrasound applications in biofuel and biobased products.*"
63. Invited speaker, Chonnam National University, Gwanju, South Korea (May 4, 2010). "*Biomass conversion to biofuels.*"

64. Invited speaker, National Academy of Agriculture, Suwon, South Korea (Apr 30, 2010). "*Anaerobic biotechnology for bioenergy production: challenges and opportunities.*"
65. Invited speaker, Renewable Energy and Island Sustainability (REIS), University of Hawaii at Manoa, Honolulu, HI (Oct 22, 2009). "*Biomass conversion to biofuels and biobased products.*"
66. Invited speaker, Hawaii Institute of Food Technologists (HIFT), Honolulu, HI (Feb 17, 2009). "*Conversion of biomass into biofuels and biobased products.*"
67. Invited speaker, Hawaii Natural Energy Institute, University of Hawaii at Manoa, Honolulu, HI (Sep 30, 2008). "*Conversion of agri-residues to biofuels and biobased products.*"
68. Invited speaker, The Hong Kong University of Science and Technology, Hong Kong (June 23-27, 2008). "*Ultrasound application in biorenewables for enhanced biofuel/bioenergy production.*"
69. Invited speaker, University of Hawai'i at Mānoa (Civil and Environmental Engineering Dept.), Honolulu, HI (Feb 8, 2008). "*Fungal process for biobased product recovery and water reclamation.*"
70. Invited speaker, University of Hawai'i at Mānoa (Bioenergy Research Group), Honolulu, HI (Feb 28, 2008). "*Biofuels from solid, liquid and gaseous feedstocks.*"
71. Invited speaker, Oklahoma State University (Biosystems and Agricultural Engineering Dept.), Stillwater, OK (Oct 4, 2007). "*Fermentation of solid, liquid and gaseous feedstocks for biofuel, and biochemical recovery.*"
72. Invited speaker, University of Hawai'i at Manoa (Molecular Biosciences and Bioengineering Dept.), Honolulu, HI (Oct 18, 2007). "*Microbial systems for bioenergy production and energy balance.*"
73. Invited speaker, University of Hawai'i at Manoa (Molecular Biosciences and Bioengineering Dept.), Honolulu, HI (Oct 19, 2007). "*Bioprocessing for bioenergy and value-added product recovery from solid, liquid and gaseous feedstocks.*"
74. Invited speaker, Asian Institute of Technology (Environmental Engineering Program), Bangkok, Thailand (Sep 14, 2007). "*Changing paradigm in*

environmental engineering research: from waste treatment to bioenergy and value-added product recovery."

75. Invited speaker, The Fifth International Starch Technology Conference, University of Illinois, Urbana-Champaign, IL (Jun 3 – 6, 2007). "*Energy issue.*"
76. Invited speaker, Cornell University, Ithaca, NY (May 10, 2007). "*Renewable energy from agro-based feedstocks: A key to sustainability.*"
77. Invited speaker, Cornell University, Ithaca, NY (May 11, 2007). "*Biomass: A renewable energy source.*"
78. Invited speaker, Ohio State University, Columbus, OH (Feb 5, 2007). "*Microbial bioconversion of agro-based feedstocks to bioenergy and biobased products.*"
79. Invited speaker, University of New Mexico, Albuquerque, NM (Mar 6, 2007). "*Anaerobic membrane bioreactor (AMBR) for treatment of low strength wastewater.*"
80. Invited speaker, Joint Graduate School of Energy and Environment, King Mongkut's University of Technology, Bangkok, Thailand (Jan 17, 2007). "*Bioenergy and value-added bioproducts from agro-based feedstock: An emerging research frontier.*"
81. Invited speaker, Iowa State University, Biorenewables Meeting (Dec 19, 2006). "*Bioenergy production from cellulose-to-ethanol plants-derived stillage.*"
82. Invited speaker, Hong Kong University of Science and Technology, Hong Kong (Sep 19, 2006). "*Use of poly-tetrafluoroethylene (PTFE) laminated non-woven filter for municipal wastewater treatment.*"
83. Invited speaker, Advanced Science Institute, Hong Kong University of Science and Technology, Hong Kong (Sep 20, 2006). "*Ultrasonic pretreatment of waste activated sludge.*"
84. Invited speaker, Beijing Normal University, Beijing (Sep 14, 2006). "*Recovery of high-value fungal bio-products from wet corn milling liquid stream.*"
85. Invited speaker, The Society for Engineering in Agricultural, Food, and Biological Systems, Society of Manufacturing Engineering, Society of Mechanical Engineering, Society of Automotive Engineering, Waterloo, IA (Nov 10, 2005), "*Alternative Energy: Energy Engineering*"

86. Invited speaker, Department of Agricultural and Biosystems Engineering, North Dakota State University, Fargo, ND (Aug 31, 2005). "*Converting agri-residues to biofuels and bio-products.*"
87. Invited speaker, Biobased Industry Outlook Conference, Ames, IA (Aug 29, 2005). "*Anaerobic digestion of thin stillage to produce methane and Class-A biosolids.*"
88. Invited speaker, Hacettepe University, Ankara, Turkey (Aug 17, 2005). "*Anaerobic membrane bioreactor for municipal sewage treatment.*"
89. Invited speaker, Asian Institute of Technology, Bangkok, Thailand (Aug 11, 2005). "*Integrated Waste Biomass-based Biorefinery.*"
90. Invited speaker, Malaysia University of Science and Technology, Malaysia (Jul 15, 2005). "*Emerging research frontiers: coupling waste treatment with bio-products and bioenergy recovery.*"
91. Invited speaker, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology, Cambridge, MA (Apr 26, 2005).
92. Invited speaker, Department of Agricultural and Biosystems Engineering, Iowa State University, Ames, IA (Mar 24, 2005). "*Bioconversion for sustainability.*"
93. Invited speaker, Department of Civil, Construction and Environmental Engineering, Iowa State University, Ames, IA (Feb 3, 2004). "*New directions in anaerobic biotechnology.*"
94. Invited speaker, Dept. of Civil Engineering, University of Canterbury, Christchurch, New Zealand (Dec 6, 2003). "*Anaerobic biotechnology for waste treatment and resource recovery.*"
95. Invited speaker, Department of Civil and Environmental Engineering, University of Missouri-Columbia, MO, (Oct 31, 2002). "*Oxygenated anaerobic treatment of high sulfate wastewater.*"

NATIONAL/INTERNATIONAL RESEARCH COLLABORATIONS

- **Prof. Karthik Chandran**, Columbia University: Nitrogen Transformations in Aquaponic (Funding Agency: USDA-NIFA) (2010- present).

- **Prof. Lutgarde M. Raskin**, University of Michigan: Microbial Community Analysis in AD System Digesting Cellulosic Biomass (Funding Agency: USDA-HATCH) (2014-present)
- **Prof. Ganti S. Murthy**, Oregon State University: Techno-economic Analysis (Funding Agency: Western Regional Sun Grant) (2013-present)
- **Dr. Po-Heng (Henry) Lee**, Hong Kong Polytechnic University: Microbial Kinetics, Bioenergetics and Thermodynamics of Biological Systems (Funding Agency: USDA-HATCH) (2015-present).
- **Prof. Satindar Kaur Brar**, Institut national de la recherche scientifique (INRS) Centre - Eau Terre Environnement/Centre for Water, Earth and Environment, Quebec, Canada: Advanced Bioprocessing for Resource Recovery from Wastes/Residues (2016-present)
- **Dr. Kaushlendra Singh**, Western Virginia University: Biochar Applications for Sustainable Agriculture (Funding Agency: USDA-HATCH) (2015-present).
- **Dr. Deb Jaisi**, Delaware University: Chemical Characterization of Biochars for Sulfide Removal from Biogas (Funding Agency: USDA-HATCH) (2015-present).
- **Prof. Jaewoo Lee**, Korea University, South Korea: Nitrogen Transformations in Aquaponic (Funding Agency: National Research Foundation of Korea) (2010-present).
- **Dr. Hans Oeschner**, Hohenheim University, Germany: Anaerobic Biorefinery for Biofuel and Biobased Products (Funding Agency: DOE and Western Regional Sun Grant) (2010-present).
- **Prof. Hyeun-jong Bae**, Chonnam National University: Biomass Pretreatment for Biofuel Production (Funding Agency: Bioenergy Center, Chonnam National University) (2010-present).
- **Prof. Xie (Sally) Li**, Tongji University, China: Fungal Fermentation and Hydrogenotrophic Methanogenesis for Biogas Upgrading (Funding Agency: National Science Foundation of China) (2014- present).
- **Dr. Hui Lu**, Sun Yat-Sen University, China: Granulation of Sulfur-oxidizing Bacteria for Autotrophic Denitrification (Funding Agency: National Science Foundation of China) (2016- present).
- **Prof. Alissara Reungsang**, Khon Kaen University, Thailand: Optimization of Co-digestion of Food Waste, Sewage Sludge and Energy Crop by Using Simplex

Lattice Design (Funding Agency: Royal Golden Jubilee Program, Thailand) (May 2016 to Present).

- **Prof. Sumate Chaiprapat**, Prince of Songkla University, Thailand: Mono-digestion of Napier Grass (Funding Agency: Royal Golden Jubilee Program, Thailand) (Sep 2016 to Present).
- **Prof. Sushil Adhikari**, Auburn University: Integrated Anaerobic Biorefinery and Thermochemical Conversion (Funding Agency: USDA supplemental Grant) (Sep 2016 to Present).

INDUSTRIAL/CONSULTING EXPERIENCES

- Geopower Energy, Salt Lake City, UT
 - Napier grass pelletization for biopower
 - Techno analysis for Napier grass use for biopower
- ICM, Inc., Colwich, KS
 - Sulfide removal and digester failure evaluation
- ProtaCulture, Inc., Sanoma County, CA
 - Food waste conversion to biodiesel and animal feed
 - Process control and bioreactor design and optimization
- Technical Consultant, Gerente Técnico Algae, Sao polo, Brazil.
 - Aquatic feed production from biofuel residues
 - Commercialization of fungal protein production process
- Technical Consultant, OmniGreen Renewables, Honolulu, HI.
 - Anaerobic digestibility of green grass
 - Digester start-up and monitoring
- Provided technical help to California State Department of Water Resources, Fresno, CA to treat high sulfate water from agricultural run-off from San Joaquin Valley.
- Technical Consultant, Universal Entech, Phoenix, Arizona):
 - Treatability study of food waste together with wax-coated cardboard and rendering waste using temperature-phased anaerobic digestion (TPAD)
- Consulting Services to Town of Carbondale, CO: Ameliorate the aerobic digestibility of waste activated sludge.
- Researcher for the following externally funded project at Hong Kong University

of Science and Technology (Jan 2001 - Sep 2001):

- Bio-kinetic study of existing municipal activated sludge process at Taipo, Hong Kong
- Determination of specific nitrification rate of Taipo wastewater treatment facility, Hong Kong
- Biodegradability study of dyeing wastewater from China Dyeing, Hong Kong

RESEARCH INTERESTS AND AREA OF SPECIALIZATIONS

- Microbial processes for resource recovery and waste remediation
- Waste/agri-residues to biofuel and biobased products and biorefinery
- Anaerobic biorefinery
- Hydrogenotrophic methanogenesis
- Novel sulfate-reducing pathway for energy-efficient wastewater treatment
- ORP-based process control for biological waste treatment system
- Aquaponic for nitrogen recovery and climate change mitigation
- Biochar applications for waste (water) treatment and biogas upgrading
- Low-cost decentralized waste treatment system including anaerobic membrane bioreactor.
- High solids digestion and bioenergetics

TEACHING INTERESTS

Environmental Biotechnology; Biological waste treatment; Water and Wastewater Engineering; Principles of Environmental Engineering; Sustainable Engineering; Industrial Waste Treatment and Resource Recovery; Solid Waste Management; Hazardous Waste Management; Biomass Conversion to Biofuel and Bioenergy; Transport Phenomena; Anaerobic Biotechnology; Organic Waste Recycling.

TRAININGS

- 2-full day training on SimaPro Software for Life Cycle Assessment- SimaPro User Certificate, EarthShift, Seattle, WA, Nov 30 to Dec 1, 2011.
- 2-full day NSF-sponsored workshop on "Teaching Sustainable Engineering Course to Undergraduate Engineering Students in the United States", Syracuse University, Syracuse, NY, May 23 to 24, 2011.
- USDA-CSREES Grantsmanship Workshops, Dallas, TX, Oct 16-17, 2006.
- 2-full day course on "Writing Competitive Proposals and Grants", Iowa State University and Persuade and Publish International, LLC, Ames, IA, May 17 – 18, 2004.

- US Classroom for International Faculty, Iowa State University, Ames, IA, Jan 19, 2004.
- Preparing Future Faculty (PFF), Iowa State University, Ames, IA, Dec 2002 to Dec 2003.
- Laboratory Safety Training, Iowa State University, Ames, IA, May 30, 2002.
- Teaching Assistant Training, The Hong Kong University of Science and Technology, Hong Kong, Jan 22 - Feb 3, 1998.

HONORS

- Outstanding Teaching Assistant Award, Dept. of Civil Engineering, The Hong Kong University of Science and Technology, Hong Kong (Mar 2001).
- Graduate Student Research Grant, University Grant Commission, The Hong Kong University of Science and Technology, Hong Kong (May 2000 and Sep 2001).
- Excellent Grade Award for M.S. research work, Asian Institute of Technology, Bangkok (Aug 1997).
- Letter of Appreciation for excellent poster presentation of master research work in Research Bazaar, Asian Institute of Technology, Bangkok (Aug 1997).
- Tribhuvan University Teachers Association Award for excellent academic performance, Butwal Multiple Campus, Butwal, Nepal (Jul 1987).

SCHOLARSHIPS (Recipient of academic excellence scholarship throughout the study period)

- Research/Teaching Assistantship, Dept. of Civil Engineering, The Hong Kong University of Science and Technology, Hong Kong (Feb 1998 - Feb 2002).
- German Academic Exchange Services (DAAD) Scholarship, Asian Institute of Technology, Bangkok (Jan 1996 - Aug 1997).
- Higher Educational Scholarship, Malaviya National Institute of Technology, Jaipur, India (Sep 1988 - Jan 1993).
- Tribhuvan University Merit Scholarship in Proficiency Certificate Level (PCL) in Science for academic excellence (Jun 1986 - Aug 1987).

- District Merit Scholarship, Ministry of Education and Welfare, His Majesty Government of Nepal for academic excellence (Jun 1983 - Jun 1984).

NEWSPAPER ARTICLES

- CFCs and ozone layer destruction, *The Rising Nepal* (May 31, 1993)
- Environmental pollution: threat to mankind, *The Rising Nepal* (Jun 13, 1993)
- The problem of acid rain, *The Rising Nepal* (August 20, 1993)
- Changing face of our environment, *The Rising Nepal* (Dec 24, 1993)

PROFESSIONAL SOCIETIES AND SERVICES

(A) Professional Affiliations

- International Bioprocessing Association (IBA) (Life member)
- Member, International Water Association (IWA)
- Member, Association of Environmental Engineering and Science Professors (AEESP)

(B) Referee of Journal Articles

Biotechnology Advances; Aquacultural Engineering, Applied Energy; PLOS ONE; Energies; Water Research; Environmental Engineering (ASCE); Biotechnology and Bioengineering; Journal of Applied Aquaculture; Bioscience and Bioengineering; Biofuels, Bioproducts and Biorefining; Global Biogeochemical Cycles; Water Environment Research; International Journal of Hydrogen Energy; Water Science and Technology; Environmental, Science and Technology; Biotechnology Progress; Applied Biochemistry and Biotechnology; Journal of Biotechnology; Applied Microbiology and Biotechnology; International Biodeterioration and Biodegradation; Journal of Environmental Management; Process Biochemistry; Biochemical Engineering; Journal of Environmental Engineering and Science; Environmental Technology; Bioresource Technology; Separation and Purification Technology; GCB Bioenergy; BMC Biotechnology; Marine Environment; Journal of Chemical Engineering and Processing; Journal of Renewable and Sustainable Energy; Fuels and Energy; Chemosphere; American Society of Agricultural and Biological Engineers; Critical Reviews in Environmental Science and Technology; Ultrasonics Sonochemistry; Chemical Engineering Journal; Bioresource Engineering; Water, Air and Soil.

(C) Referee of Grant Proposals

- Review Panel, US Department of Agriculture (USDA), National Institute of Food and Agriculture - Foundation Program, Washington, D.C (2017).
- Environment and Conservation Fund (ECF), Hong Kong (2017).
- New faculty HATCH Proposal, University of Idaho, Moscow (Jan 2017).
- North Dakota Department of Commerce (Mar 2016, Jan 2017).
- Research Grant Council (RGC) of Hong Kong, Hong Kong SAR (Mar 2013, 2017).
- Fondazione Cariplo, Milan Italy (Jun to Aug 2014, 2015, 2016, 2017).
- US Department of Agriculture, Agricultural and Food Research Institute (AFRI); Reviewer of the First Distributed Peer Review System (Sep 2016).
- Life Science Program, Israeli Ministry of Science, Technology and Space (Aug 2016).
- NSF Review Panel: Environmental Engineering, Washington, D.C. (Mar 2016).
- US Department of Agriculture, Small Business Innovation Research Program (SBIR) Phase I (2015, 2016).
- Danish Council for Strategic Research on Sustainable Energy and Environment (Oct 2014).
- Research Council for Culture and Society, Academy of Finland (Aug 2013).
- Review Panel, US Department of Agriculture (UDA), 1890 Capacity Building Grant (CBG), Bioenergy, Environment and Food, Washington, D.C. (2012).
- Review Panel, US Department of Agriculture (USDA), Bioenergy and Biobased Products, Small Business Innovation Research, Washington, D.C (2012).
- US Department of Agriculture (USDA), Small Business Innovation Research, Washington, D.C (2010).

- Netherlands Organization for Scientific Research (NWO): Innovative Research Incentives Scheme (2010).
- University of Leuven: new initiatives and high quality research grant, Belgium (2010).
- California Energy Commission, Energy Innovation Small Grant (EISG) Program (2005 to present).
- NSF Review Panel: Bioresources/Biotechnology/Bioenergy, Washington, D.C. (2006, Mar 2008, Jul 2008).
- US Department of Agriculture (USDA), Cooperative State Research, Education and Extension Service (CSREES), Washington, D.C. (2008).
- US Department of Energy Small Business Innovation Research (Pacific Northwest National Lab, Sequim, WA (2005, 2006, 2008).
- College of Engineering, Utah State University, Logan UT (2008).
- US Department of State (International Science and Technology Center (ISTC) (2005 to present).
- Missouri Life Science Research Board (2007).
- Florida Research for the Commercialization of Public Research (2010).
- Nevada Institute for Renewable Energy Commercialization (2010).

(D) Others

- Associate Editor, *Bioresource Technology* (Jan 2018-present).
- Editorial Board Member, *Bioresource Technology* (2014- present), *Korean Journal of Environmental Engineering* (2011- present), and *Turkish Journal of Engineering* (2017-present).
- External Examiner, Senior Design Project, Biological and Ecological Engineering Dept., Oregon State University, Mar 21, 2017, Corvallis, OR.
- Session Chair, International Conference on Emerging Trends in Biotechnology for Waste Conversion (ETBWC-2017) and XIV Convention of the Biotech Research Society, CSIR-National Environmental Engineering Research Institute, Nagpur, India (Oct 8-10, 2017); 2nd International Conference on *Biological*

Waste as Resource (BWR2017), May 25-28, 2017, Hong Kong; 7th International Forum on *Industrial Bioprocesses*, May 21-24, 2017, Wuxi, China; *Progress in Biogas IV*, Mar 8-11, 2017, Stuttgart, Germany; *Current Trends in Biotechnology*, Dec 8 - 10, 2016, Vellore, India; BIORESTEC, Oct 23-26, 2016, Sitges, Spain; International Conference on *Advances in Biotechnology & Bioinformatics*, Nov 25-27, 2013, Pune India; IWA Specialized Conference, Asian Institute of Technology, Sep 2006, Bangkok; IWA Asia-Pacific Regional Conference: *ASIAN WATERQUAL 2003*, Oct 19-23, Bangkok, Thailand.

- Scientific Committee, International Conference on Emerging Trends in Biotechnology for Waste Conversion (ETBWC-2017) and XIV Convention of the Biotech Research Society, CSIR-National Environmental Engineering Research Institute, Nagpur, India (Oct 8-10, 2017); The 7th International Conference on Fermentation Technology for Value-added Agricultural Products and the 12th Asian Biohydrogen & Biorefinery Symposium, Jul 26-28, 2017, Khon Kaen, Thailand; The 2nd International Conference on *Biological Waste as Resource (BWR2017)*, May 25-28, 2017, Hong Kong; International Conferences on *Progress in Biogas IV: Biogas Production from Agricultural Biomass and Organic Residues*, Mar 8 – 10, 2017, Stuttgart, Germany; 7th International Forum on *Industrial Bioprocesses*, May 21-24, 2017, Wuxi, China; *Biotechnologies for Controlling Non-point source Pollution and Protecting Natural Waters (BNPW-2017)*, Mar 26-29, 2017, Nanjing, China.
- Scientific/Advisory Committee of international conferences on 2nd International Conference on *Bioenergy, Bioproducts & Environmental Sustainability (BIORESTEC)*, Sitges, Spain (Sep 16-19, 2018); *Emerging Trends in Biotechnology for Waste Conversion (ETBWC-2017)* and XIV Convention of the Biotech Research Society, CSIR-National Environmental Engineering Research Institute, Nagpur, India (Oct 8-10, 2017); *Current Trends in Biotechnology*, Vellore, India, Dec 8 - 10, 2016; *Strategies for Environmental Protection and Management and 29th Annual meeting of National Environmental Science Academy*, Jawaharlal Nehru University, New Delhi, India, Dec 11-13, 2016; *Bioprocessing India 2016*, Mohali, India, Dec 15-17, 2016.
- International Advisor, Environmental Engineering Program, Korea University, Seoul Korea (2016 - present)
- Guest Co-editor, Special issues of *Bioresource Technology* on *Advances in Anaerobic Digestion (2017)*; *Bioenergy, Bioproducts & Environmental Sustainability (BIORESTEC) (2017)*; *Waste Biorefinery-Advocating Circular Economy (2016)* and *Advances in Biogas Research and Applications (2015)*, Special issue of *Renewable Energy (2016)*, and *Indian Journal of Experimental Biology* on *Advances in Biotechnology and Bioinformatics (2014)*.

- International Advisory Committee, *First International Conference on Recent Advances in Bio-energy Research (ICRABR-2015)*, Mar 14-17, 2015 and *Second International Conference on Recent Advances in Bio-energy Research (ICRABR-2016)*, Feb 25-27, 2016, Kapurthala, India
- External Evaluator, Tenure and Promotion Application of a faculty member at Sultan Qaboos University, Muscat, Oman (2015); University of Alberta, Edmonton Canada (2017).
- International Advisory Committee, *International Conferences on New Horizons in Biotechnology (NHBT-2015)*, Nov 22-25, 2015, Trivandrum, India; *Energy, Environment and Climate (ICEECC-2015)*, Jul 8-9, 2015, Mauritius.
- Instructor, Training Workshop on Anaerobic Digestion Technology for Waste treatment and Resource Recovery, Jul. 25, 2017, Dept. of Biotechnology, Khon Kaen University, Khon Kaen, Thailand.
- Instructor, International Training Workshop on Biogas Technology for Bioenergy, Oct. 20-24, 2014, Kunming China. Delivered the following modules:
 - Introduction to AD process/biology, brief history of application and development (Day-1).
 - Waste treatment with anaerobic digestion (Day-1).
 - Detailed biological process and kinetics (including calculations) (Day-2).
 - Biogas management (Day-2).
 - Anaerobic digestion residue management (digestate) (Day-3).
- International Advisory/Scientific Committee, *International Conferences on Emerging Trends in Biotechnology (ICETB 2014)*. Nov 6-9, 2014, New Delhi, India; *Progress in Biogas III: Biogas Production from Agricultural Biomass and Organic Residues*. Sep 8 – 9, 2014, Stuttgart, Germany; *Advances in Biotechnology and Bioinformatics (ICABB 2013)*, Nov 25-27, 2013, Pune, India
- Provided Hands-on Training to 25 grade 8 students in Central Middle School on Building Microbial Fuel Cell (Dec 4, 2012).
- Organized USDA NIFA Multi State Research S1041: "The Science and Engineering for a Biobased Industry and Economy" meeting in Washington, D.C. (Aug 6-7, 2012).
- USDA NIFA Multi State Project S1041: The Science and Engineering for a Biobased Industry and Economy, Secretary (2009-2010); Vice-Chair (2010-2011) and Chair (2011-2012).

- Search committee member of Biological Engineering faculty position (2011-2012); Junior specialist (2017).
- Provided Hands-on Training to Middle School Teachers on Bioenergy Production (Nov 5, 2011, Jan 28, 2012).
- Book Proposal Reviewer: Biomethane Engineering, Cambridge University Press (2017); Biogas Technology (2016), Environmental Biotechnology (2014), Thermochemical Conversion of Biomass (2013) [Elsevier Publishing; Textbook of Bioenergy, CRC Press (2011); Biofuel and Biochemicals from Agri-residues, Blackwell Publishing (2007);
- Special Reviewer, IWA World Water Congress, Beijing China (2006).