

# Largus (Lars) T. Angenent, Ph.D.

## Contact Information

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Professor (W3) for Environmental Biotechnology  
Humboldt Professor  
University of Tübingen  
Center of Applied Geosciences (ZAG)  
Hölderlinstr. 12  
72074 Tübingen  
E-mail: [l.angenent@uni-tuebingen.de](mailto:l.angenent@uni-tuebingen.de)  
Tel: +49-7071-601-322  
Fax: +49-7071-601-1308  
Web: <http://www.envbiotech.de/>

## University Education

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### Post-Doc. Environmental Engineering/Molecular Biology, 2002

University of Colorado at Boulder, Boulder, Colorado, USA  
Advisors: Mark T. Hernandez and Norman R. Pace

### Post-Doc. Environmental Engineering, 2000

University of Illinois at Urbana-Champaign, Urbana, Illinois, USA  
Advisor: Lutgarde Raskin

### Ph.D. Environmental Engineering, 1998

Iowa State University, Ames, Iowa, USA  
Thesis Title: Development of a new high-rate anaerobic process for the treatment of industrial and domestic wastewaters: the anaerobic migrating blanket reactor (AMBR).  
Advisors: Richard R. Dague and Shihwu Sung

### M.S. Environmental Technology/Microbiology, 1994

Wageningen University, Wageningen, The Netherlands  
Thesis Title 1: The influence of pH on competition between sulfate reducing bacteria and methanogens in laboratory-scale UASB reactors.  
Advisors: Gatze Lettinga, Look W. Hulshoff Pol and André Visser  
Thesis Title 2: Enrichment studies on anaerobic, monochlorophenol-degrading bacteria.  
Advisors: Alphons J. M. Stams and Karin A. Ennik-Maarsen

### B.S. Environmental Sciences, 1992

Wageningen University, Wageningen, The Netherlands

## Professional Experience

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| Aug. 2016-present   | Professor in the Department of Geosciences, Center for Applied Geosciences (ZAG), University of Tübingen. |
| July 2017-Aug. 2018 | Adjunct Professor in the Department of Biological and Environmental Engineering, Cornell University.      |
| Jan. 2015-June 2017 | Professor in the Department of Biological and Environmental Engineering, Cornell University.              |
| Aug. 2014-Aug. 2015 | Visiting Professor in the Faculty of Bioscience Engineering, Ghent University.                            |

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| Aug. 2008-Dec. 2014 | Associate Professor in the Department of Biological and Environmental Engineering, Cornell University.   |
| Aug. 2008-Aug. 2009 | Adjunct Professor in the Department of Energy, Environmental & Chemical Engineering, Washington University in St. Louis.   |
| Aug. 2002-July 2008 | Assistant Professor in the Department of Energy, Environmental & Chemical Engineering (formerly the Department of Chemical Engineering and Environmental Engineering Science Program), Washington University in St. Louis. |
| Jan. 1999-May 1999  | Visiting Lecturer at the University of Illinois at Urbana-Champaign in the Department of Civil and Environmental Engineering.  |

### **US Patents**

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- Co-inventor US Patent Application 7298-01-US “Production of primarily caprylic acid (C8) in chain elongation bioreactors”. Filing date: May 27, 2017.
- Co-inventor US Patent No. 9,650,652: “Production of Carboxylates and Methane from Biomass Waste” issued on May 16, 2017.
- Co-inventor US Patent No. 9,523,070: “Photobioreactor Apparatus, Method and Application” issued on December 20, 2016.
- Co-inventor US Patent No. 5,885,460: "Anaerobic Migrating Blanket Reactor" issued on March 23, 1999.

### **Awards and Honors**

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- Alexander von Humboldt Professor, 2017
- SUNY Chancellor's Awards for Excellence in: Scholarship and Creative Activities, 2015
- Kavli Fellow, U.S. National Academy of Sciences, 2008
- Excellence in Review Award, *Environmental Science & Technology*, 2007
- NSF CAREER award, U.S. National Science Foundation, 2007
- GE Scholar, The Academy for Excellence in Engineering Education, Engineering College, University of Illinois at Urbana-Champaign, USA, 1999

### **Awards with Graduate Students**

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- Han Wang, 2018 CRC Fellowship, Chinese Government (4 years of stipend funding).
- Joseph G. Usack, 2015 Clinton DeWitt Smith Fellowship, College of Agricultural and Life Sciences, Cornell University.
- Juan Guzman, Recipient of the Edward A. Bouchet Graduate Honor Society Fellowship.
- Catherine Spirito, Recipient of the 2014 US Environmental Protection Agency Fellowship Award (2 years of stipend funding).
- Lauren Harroff, Recipient of the 2014 National Science Foundation Graduate Research Fellowship Award (3 years of stipend funding).
- Leo Kucek, Recipient of the 2014 National Science Foundation Graduate Research Fellowship Award (2 years of stipend funding).
- Juan Guzman, Recipient of the 2014 National Science Foundation Graduate Research Fellowship Award (3 years of stipend funding).
- Lauren Harroff, Recipient of a Fellowship Award from the Program in Cross-scale Biogeochemistry and Climate IGERT, Cornell University (2 years of stipend funding).
- Elliot Friedman, 2012 Innovation Award, International Society for Microbial Electrochemistry and Technology.

- Matthew T. Agler, Best Platform Presentation at the 13th World Congress on Anaerobic Digestion, 25th – 28th June, 2013, Santiago de Compostela, Spain.
- Juan Guzman, Recipient of the Alfred P. Sloan Foundation Fellowship Award.
- Dylan P. Webster, Zuckerman Prize for Excellence in Student Biological Engineering Research, 11th Annual BioExpo, Cornell Institute of Biological Engineering, March 14 2013, Ithaca, NY.
- Dylan P. Webster, Second place in University Forum (presentation), NYWEA 85<sup>th</sup> Annual Meeting & Exhibition, February 4-6, 2013, New York City, NY.
- Elliot S. Friedman, 2012 Small Grant Award, Program in Cross-scale Biogeochemistry and Climate IGERT, Cornell University.
- Elliot S. Friedman, 2012 Sustainable Biodiversity Fund, Atkinson Center for a Sustainable Future, Cornell University.
- Michaela A. TerAvest, Fall 2012 Provost Diversity Fellowship.
- Joseph G. Usack, 2012 Clinton DeWitt Smith Fellowship, College of Agricultural and Life Sciences, Cornell University.
- Joseph G. Usack, 2012 Ram Sagi Award, Cornell University.
- Catherine M. Spirito, 2011 Ram Sagi Award, Cornell University.
- Joseph G. Usack, 2010 Ram Sagi Award, Cornell University.
- Jeffrey J. Fornero, First place in poster competition for Architecture/Materials division, Microbial Fuel Cells - First International Symposium, Penn State University, May 27-29, 2008.
- Sarah D. Perkins, Recipient of the 2005 National Science Foundation Graduate Research Fellowship Award.

### **Bibliographic Data**

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Journal articles: 143; Patents: 3; Text Books: 2; Book (editor): 1; Book chapters: 7; PhD theses: 12; MS theses: 9; and **h-factor: 42** (Web of Science Core Collection).

### **Journal Publications In Review or In Preparation**

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1. Spirito C. M., Marzilli A. M. and Angenent L.T. (2018). Higher substrate ratios of ethanol to acetate steered chain elongation toward *n*-caprylate in a bioreactor with product extraction. *Environmental Science and Technology*, submitted.
2. Guzman J. J. L., Venkataraman A., Doud D. F. R., Zhang Y., Holmes E. C., Catania C., Bazan G. C., Rosenbaum M. A., Datta A. K. and Angenent L. T. (2017). Improving mediator uptake kinetics can alleviate current production bottleneck by synergistic co-culture of *Pseudomonas aeruginosa* and *Enterobacter aerogenes* in a bioelectrochemical system. *mBio*, in preparation.

### **Journal Publications**

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1. Uman A. E., Usack J. G., Lozano J. L. and Angenent L. T. (2018). Controlled-experiment contradicts the apparent benefits of the Fenton reaction during anaerobic digestion at a municipal wastewater treatment plant. *Water Science and Technology*, accepted.
2. Dams R. I., Viana M. B., Guilherme A. A., Silva C. M., dos Santos A. B., Angenent L. T., Santaella S. T. and Leitão R. C. (2018). Production of medium-chain carboxylic acids by anaerobic fermentation of glycerol using a bioaugmented open culture. *Biomass and Bioenergy*, Vol. 118, pp. 1-7.

3. Sun T.\*, Levin B. D. A.\*, Schmidt M. P., Guzman J. J. L., Enders A., Martinez C. E., Muller D. A., Angenent L. T. and Lehmann J. (2018). Simultaneous quantification of electron transfer by carbon matrices and functional groups in pyrogenic carbon. *Environmental Science & Technology*, Vol. 52, No. 15, pp. 8538–8547.
4. Weber R. S., Holladay J. E., Jenks C., Panisko E. A., Snowden-Swan L. J., Ramirez-Corredores M., Baynes B., Angenent L. T. and Boysen D. (2018). Modularized production of fuels and other value-added products from distributed, wasted, or stranded feedstocks. *WIREs Energy and Environment*, e308, DOI: 10.1002/wene.308.
5. Spirito C. M., Daly S. E., Werner J. J. and Angenent L. T. (2018). Redundancy of anaerobic digestion microbiomes during disturbances by the antibiotic monensin. *Applied and Environmental Microbiology*, Vol. 84, No. 9, e02692-17, DOI: 10.1128/AEM.02692-17.
6. Xu J., Hao J., Guzman J. J. L., Spirito C. M., Harroff L. A. and Angenent L. T. (2018). Temperature-phased conversion of acid whey waste into medium-chain carboxylic acids via lactic acid: no external e-donor. *Joule*, Vol. 2, No. 2, pp. 280-295.
7. Usack J. G., Gerber Van Doren L., Posmanik R., Labatut R. A., Tester J. W. and Angenent L. T. (2018). An evaluation of anaerobic co-digestion implementation on New York State dairy farms using an environmental and economic life-cycle framework. *Applied Energy*, Vol. 211, pp. 28-40.
8. Thompson L. R., Sanders J. G., ....., Gilbert J. A., Rob Knight R. and The Earth Microbiome Project Consortium (Largus T. Angenent as a Consortium Member). (2017). A communal catalogue reveals Earth's multiscale microbial diversity. *Nature*, Vol. 551, pp. 457-463.
9. Molitor B., Marcellin E. and Angenent L. T. (2017). Overcoming the energetic limitations of syngas fermentation. *Current Opinion in Chemical Biology*, Vol. 41, pp. 84-92.
10. Angenent L. T., Usack J. G., Xu J., Hafenbradl D., Posmanik R. and Tester J. W. (2018). Integrating electrochemical, biological, physical, and thermochemical process units to expand the applicability of anaerobic digestion. *Bioresource Technology*, Vol. 247, pp. 1085-1094.
11. Urban C., Xu J., Sträuber H., dos Santos Dantas T. R., Mühlenberg J., Härtig C., Angenent L. T. and Harnisch F. (2017). Production of drop-in fuel from biomass at high selectivity by combined microbial and electrochemical conversion. *Energy and Environmental Science*, Vol. 10, No. 10, pp. 2231-2244.
12. Woolf D., Lehmann J., Joseph S., Campbell C., Christo F. C. and Angenent, L. T. (2017). An open source biomass pyrolysis reactor. *Biofuels, Bioproducts and Biorefining*, Vol. 11, No. 6, pp. 945–954.
13. Harroff L. A., Liotta J. L., Bowman D. D. and Angenent L. T. (2017). Inactivation of *Ascaris* eggs in human fecal material through *in-situ* production of carboxylic acids. *Environmental Science and Technology*, Vol. 51, No. 17, pp. 9729-9738.
14. Doud D. F. R., Holmes E. C., Richter H., Molitor B., Jander G. and Angenent L. T. (2017). Metabolic engineering of *Rhodospseudomonas palustris* for the obligate reduction of *n*-butyrate to *n*-butanol. *Biotechnology for Biofuels*, Vol. 10, No. 178, DOI: 10.1186/s13068-017-0864-3.
15. Guzman J. J. L., Pehlivaner Kara M. O., Frey M. W. and Angenent L. T. (2017). Performance of electro-spun carbon nanofiber electrodes with conductive poly(3,4-ethylenedioxythiophene) coatings in bioelectrochemical systems. *Journal of Power Sciences*, Vol. 356, No. 1, pp. 331-337.

16. Gildemyn S., Molitor B., Usack J. G., Nguyen M., Rabaey K. and Angenent L. T. (2017). Upgrading syngas fermentation effluent using *Clostridium kluyveri* in a continuous fermentation. *Biotechnology for Biofuels*, Vol. 10, No. 83, DOI: 10.1186/s13068-017-0764-6.
17. Posmanik R., Labatut R. A., Kim A. H., Usack J. G., Tester J. W. and Angenent L. T. (2017). Coupling hydrothermal liquefaction and anaerobic digestion for energy valorization from model biomass feedstocks. *Bioresource Technology*, Vol. 233, pp. 134-143.
18. Sun T., Levin B. D. A., Guzman J. J. L., Enders A., Muller D. A., Angenent L. T. and Lehmann J., 2017. Rapid electron transfer by the carbon matrix in natural pyrogenic carbon. *Nature Communications*, Vol. 8, No. 14873, DOI:10.1038/ncomms14873.
19. Cavalcante W. A., Leitão R. C., Gehring T. A., Angenent L. T., Santaella S. T. (2017). Anaerobic fermentation for caproic acid production: a review. *Process Biochemistry*, Vol. 54, pp. 106-119.
20. Tremblay P. L., Angenent L. T. and Zhang T. (2017). Extracellular electron uptake: among autotrophs and mediated by surfaces. *Trends in Biotechnology*, Vol. 35, No. 4, pp. 360-371.
21. Kucek L. A., Xu J., Nguyen M. and Angenent L. T. (2016). Waste conversion into *n*-caprylate and *n*-caproate: resource recovery from wine lees using anaerobic reactor microbiomes and in-line extraction. *Frontiers in Microbiology*, Vol. 7, No. 1892, DOI: 10.3389/fmicb.2016.01892.
22. Richter R.\*, Molitor B.\*, Diender M., Sousa D. Z. and Angenent L. T. (2016). A narrow pH range supports butanol, hexanol, and octanol production from syngas in a continuous co-culture of *Clostridium ljungdahlii* and *Clostridium kluyveri* with in-line product extraction. *Frontiers in Microbiology*, Vol. 7, No. 1773, DOI: 10.3389/fmicb.2016.01773.
23. Kucek L. A., Spirito C. M. and Angenent L. T. (2016). High *n*-caprylate productivities and specificities from dilute ethanol and acetate: chain elongation with microbiomes to upgrade products from syngas fermentation. *Energy and Environmental Science*, Vol. 9, No. 11, pp. 3482-3494.
24. Kim B. J., Chu I., Jusuf S., Kuo T., TerAvest M. A., Angenent L. T. and Wu M. (2016). Oxygen tension and riboflavin gradients cooperatively regulate the migration of *Shewanella oneidensis* MR-1 revealed by a hydrogel-based microfluidic device. *Frontiers in Microbiology*, Vol. 7, No. 1438, DOI: 10.3389/fmicb.2016.01438.
25. Markham J. N., Tao L., Davis R., Voulis N., Angenent L. T., Ungerer J. L. and Yu J. (2016). Techno-economic analysis of a conceptual biofuel production process from bioethylene produced by photosynthetic recombinant cyanobacteria. *Green Chemistry*, Vol. 18, No. 23, pp. 6266-6281.
26. De Vrieze J., Smet D., Klok J., Colsen J., Angenent L. T. and Vlaeminck S. E. (2016). Thermophilic sludge digestion improves energy balance and nutrient recovery potential in full-scale municipal wastewater treatment plants. *Bioresource Technology*, Vol. 218, pp. 1237-1245.
27. Doud D. F. R. and Angenent L. T. (2016). Single-genotype syntrophy by *Rhodopseudomonas palustris* is not a strategy to aid redox balance during anaerobic degradation of lignin monomers. *Frontiers in Microbiology*, Vol. 7, No. 1082, DOI: 10.3389/fmicb.2016.01082.

28. Bland E. and Angenent L. T. (2016). Pigment-targeted light wavelength and intensity promotes efficient photoautotrophic growth of Cyanobacteria. *Bioresource Technology*, Vol. 216, pp. 579-586.
29. Richter H.\*, Molitor B.\*, Wei H., Chen W., Aristilde L. and Angenent L. T. (2016). Ethanol production in syngas-fermenting *Clostridium ljungdahlii* is controlled by thermodynamics rather than by enzyme expression. *Energy and Environmental Science*, Vol. 9, No. 7, pp. 2392-2399.
30. Nguyen M.\*, Sharma A.\*, Wu W., Gomi R., Sung B., Hospodsky D., Angenent L. T.\* and Worgall S.\* (2016). The fermentation product 2,3-butanediol alters *P. aeruginosa* clearance, cytokine response, and the lung microbiome. *The ISME Journal*, Vol. 10, No. 12, pp. 2978-2983.
31. Molitor B., Richter H., Martin M. E., Jensen R. O., Juminaga A., Mihalcea C. and Angenent L. T. (2016). Carbon recovery by fermentation of CO-rich off gases – turning steel mills into biorefineries. *Bioresource Technology*, Vol. 215, pp. 386-396.
32. Kucek L. A., Nguyen M. and Angenent L. T. (2016). Conversion of L-lactate into *n*-caproate by a continuously fed reactor microbiome. *Water Research*, Vol. 93, pp. 163-171.
33. Angenent L. T., Richter H., Buckel W., Spirito C. M., Steinbusch K. J. J., Plugge C. M., Strik D. P. B. T. B., Grootsholten T. I. M., Buisman C. J. N. and Hamelers H. V. M. (2016). Chain elongation with reactor microbiomes: open-culture biotechnology to produce biochemicals. *Environmental Science & Technology*, Vol. 50, No. 6, pp. 2796-2810.
34. Friedman E. S., McPhillips L. E., Werner J. J., Poole A. C., Ley R. E., Walter M. T. and Angenent L. T. (2015). Methane emission in a specific riparian-zone sediment decreased with bioelectrochemical manipulation and corresponded to the microbial community dynamics. *Frontiers in Microbiology*, Vol. 6, No. 1523, DOI: 10.3389/fmicb.2015.01523.
35. Jin Z., Di Rienzi S. C., Janzon A., Werner J. J., Angenent L. T., Fowler D. M., Dangl J. L. and Ley R. E. (2016). Novel rhizosphere soil alleles for the enzyme ACC deaminase queried for function with an *in-vivo* competition assay. *Applied and Environmental Microbiology*, Vol. 82, No. 4, pp. 1050-1059.
36. Martin M. E.\*, Richter H.\*, Saha S. and Angenent L. T. (2015). Traits of selected *Clostridium* strains for syngas fermentation to ethanol. *Biotechnology and Bioengineering*, Vol. 113, No. 3, pp. 531-539.
37. Perano K. M., Usack J. G., Angenent L. T. and Gebremedhin K. G. (2015). Production and physiological responses of heat-stressed lactating dairy cattle to conductive cooling. *Journal of Dairy Science*, Vol. 98, No. 8, pp. 5252-5261.
38. Saad Ahsan S., Gummus A., Jain A., Angenent L. T. and Erickson D. (2015). Integrated hollow fiber membranes for gas delivery into optical waveguide based photobioreactors. *Bioresource Technology*, Vol. 192, No. 1, pp. 845-849.
39. Usack J. G. and Angenent L. T. Comparing the inhibitory thresholds of dairy manure co-digesters after prolonged acclimation periods: Part 1 - performance and operating limits. *Water Research*, Vol. 87, pp. 446-457.
40. Regueiro L.\*, Spirito C. M.\*, Usack J. G., Hospodsky D., Werner J. J. and Angenent L. T. (2015). Comparing the inhibitory thresholds of dairy manure co-digesters after prolonged acclimation periods: Part 2 - correlations between microbiomes and environment. *Water Research*, Vol. 87, pp. 458-466.

41. Ge S., Usack J. G., Spirito C. M. and Angenent L. T. (2015). Long-term *n*-caproic acid production from yeast-fermentation beer in an anaerobic bioreactor with continuous product extraction. *Environmental Science and Technology*, Vol. 49, No. 13, pp. 8012-8021.
42. Jain A.\*, Voulis N.\*, Jung E. E., Doud D. F. R., Miller W., Angenent L. T. and Erickson D. (2015). Optimal intensity and biomass density for biofuel production in a thin light-path photobioreactor. *Environmental Science & Technology*. Vol. 49, No. 10, pp. 6327-6334.
43. Xu J., Guzman J. J. L., Andersen S. J., Rabaey K. and Angenent L. T. (2015). In-line and selective phase separation of medium-chain carboxylic acids using membrane electrolysis. *Chemical Communications*. Vol. 51, No. 31, pp. 6847-6850.
44. Gavazza S., Guzman J. J. L. and Angenent L. T. (2015). Electrolysis within anaerobic bioreactors stimulates breakdown of toxic products from azo dye treatment. *Biodegradation*. Vol. 26, No. 2, pp. 151-160.
45. del Agua I., Usack J. G. and Angenent L. T. (2015). Comparison of semi-batch vs. continuously fed anaerobic bioreactors for the treatment of a high-strength, solids-rich pumpkin processing wastewater. *Environmental Technology*. Vol. 36, No. 15, pp. 1974-1983.
46. Miller K. E., Lai C.-T., Friedman E. S., Angenent L. T. and Lipson D. A. (2015). Methane suppression by iron and humic acids in soils of the Arctic Coastal Plain. *Soil Biology & Biochemistry*, Vol. 83, pp. 176-183.
47. De Vrieze J., Raport L., Willems B., Verbrugge S., Volecke E., Meers E., Angenent L.T. and Boon N. (2015). Inoculum selection influences the biochemical methane potential of agro-industrial substrates. *Microbial Biotechnology*, Vol. 8, No. 5, pp. 776-786.
48. Schröder U., Harnisch F. and Angenent L. T. (2015). Microbial electrochemistry and technology: terminology and classification. *Energy and Environmental Science*, Vol. 8, No. 2, 513-519.
49. Shrestha P. M., Malvankar N. S., Werner J. J., Elena-Rotaru A., Franks A. E., Shrestha M., Liu F., Angenent L. T. and Lovley D. R. (2014). Correlation between microbial community and granule conductivity in anaerobic bioreactors for brewery wastewater treatment. *Bioresour. Technol.* Vol. 174, No. 1, pp. 306-310.
50. Doud D. F. R., Jain A., Ahsan S. S., Erickson D. and Angenent L. T. (2014). In-situ UV disinfection of a waveguide-based photobioreactor. *Environmental Science & Technology*, Vol. 48, No. 19, pp. 11521-11526.
51. Jung E. E.\*, Jain A.\*, Voulis N., Doud D. F. R., Largus T. Angenent L. T. and Erickson D. (2014). Stacked optical waveguide photobioreactor for high density algal cultures. *Bioresour. Technol.* Vol. 171, No. 1, pp. 495-499.
52. Doud D. F. R. and Angenent L. T. (2014). Towards electrosynthesis with uncoupled extracellular electron uptake and metabolic growth: enhancing current uptake with *Rhodospseudomonas palustris*. *Environmental Science & Technology Letters*, Vol. 1, No. 9, pp. 351-355.
53. Webster D. P., TerAvest M. A., Doud D. F. R., Chakravorty A., Holmes E. C., Radens C. M., Sureka S., Gralnick J. A. and Angenent L. T. (2014). An arsenic-specific biosensor with genetically engineered *Shewanella oneidensis* in a bioelectrochemical system. *Biosensors and Bioelectronics*, Vol. 62, pp. 320-324.

54. TerAvest M. A. and Angenent L. T. (2014). Oxidizing electrode potentials decrease current production and coulombic efficiency through cytochrome *c* inactivation in *Shewanella oneidensis* MR-1. *ChemElectroChem*, Vol. 1, No. 11, pp. 2000-2006.
55. Woolf D., Lehmann J., Fisher E. M. and Angenent L. T. (2014). Biofuels from pyrolysis in perspective: trade-offs between energy yields and soil-carbon additions. *Environmental Science and Technology*, Vol. 48, No. 11, pp. 6492-6499.
56. Werner J. J., Garcia M. L., Perkins S. D., Yarasheski K. E., Smith S. R., Muegge B. D., Stadermann F. J., DeRito C. M., Floss C., Madsen E. L., Gordon J. I. and Angenent L. T. (2014). Microbial community dynamics and stability during an ammonia-induced shift to syntrophic acetate oxidation. *Applied and Environmental Microbiology*, Vol. 80, No. 11, pp. 3375-3383.
57. Labatut R. A., Angenent L. T. and Scott N. R. (2014). Conventional mesophilic vs. thermophilic anaerobic digestion: a trade-off between performance and stability? *Water Research*, Vol. 53, pp. 249-258.
58. Spirito C. M., Richter H., Rabaey K., Stams A. J. M. and Angenent L. T. (2014). Chain elongation in anaerobic reactor microbiomes to recover resources from waste. *Current Opinion in Biotechnology*, Vol. 27, pp. 115-122.
59. Kalontarov M., Doud D. F. R., Jung E. E., Angenent L. T. and Erickson D. (2014). Hollow fibre membrane arrays for CO<sub>2</sub> delivery in microalgae photobioreactors. *RSC Advances*, Vol. 4, No. 3, pp. 1460-1468.
60. Usack J. G., Wiratni W. and Angenent L. T. (2014). Improved design of anaerobic digesters for household biogas production in Indonesia: one cow, one digester, and one hour of cooking per day. *The Scientific World Journal*, Vol. 2014, Article ID 318054, 8 pages, Doi: 10.1155/2014/318054.
61. Venkataraman A., Rosenbaum M. A., Werner J. J., Winans S. C., Angenent L. T. (2014). Metabolite transfer with the fermentation product 2,3-butanediol enhances virulence by *Pseudomonas aeruginosa*. *The ISME Journal*, Vol. 8, No. 6, pp. 1210-1220.
62. Cullender T. C., Chassaing B., Janson A., Kumar K., Muller C., Werner J. J., Angenent L. T., Bell M. E., Hay A. G., Peterson D. A., Walter J., Vijay-Kumar M., Gewirtz A. T. and Ley R. E. (2013). Innate and adaptive immunity interact to quench microbiome flagellar motility in the gut. *Cell Host & Microbe*, Vol. 14, No. 5, pp. 571-581.
63. TerAvest M. A., Rosenbaum M. A., Kotloski N. J., Gralnick J. A. and Angenent L. T. (2013). Oxygen allows *Shewanella oneidensis* MR-1 to overcome mediator washout in a continuously-fed bioelectrochemical system. *Biotechnology and Bioengineering*. Vol. 111, No. 4, pp. 692-699.
64. Zhang W., Werner J. J., Agler M. T. and Angenent L. T. (2014). Substrate type drives variation in reactor microbiomes of anaerobic digesters. *Bioresource Technology*, Vol. 151, No. 1, pp. 397-401.
65. Vasudevan D., Richter H. and Angenent L. T. (2014). Upgrading dilute ethanol from syngas fermentation to *n*-caproate with reactor microbiomes. *Bioresource Technology*, Vol. 151, No. 1, pp. 378-382.
66. Friedman E. S., Miller K. E., Lipson D. A. and Angenent L. T. (2013). Potentiostatically poised electrodes mimic iron oxide and interact with soil microbial communities to alter the biogeochemistry of Arctic peat soils. *Minerals*, Vol. 3, No. 3, pp. 318-336.
67. Agler M. T., Spirito C. M., Usack J. G., Werner J. J. and Angenent L. T. (2014). Development of a highly specific and productive process for *n*-caproic acid production: applying lessons from methanogenic microbiomes. *Water Science and Technology*, Vol. 69, No. 1, pp. 62-68.
68. Martin M. R.\*, Fornero J. J.\*, Stark R., Mets L. and Angenent L. T. (2013). A single-culture bioprocess of *Methanothermobacter thermautotrophicus* to upgrade digester biogas by CO<sub>2</sub>-



- to-CH<sub>4</sub> conversion with H<sub>2</sub>. *Archaea*, Vol. 2013, Article ID 157529, 11 pages, Doi:10.1155/2013/157529.
69. Shabangu S., Woolf D., Fisher E., Angenent L. T. and Lehmann J. (2014). Techno-economic assessment of biomass slow pyrolysis into different biochar and methanol concepts. *Fuel*, Vol. 117, Part A, pp. 742-748.
  70. Richter H., Martin M. E. and Angenent L. T. (2013). A two-stage continuous fermentation system for conversion of syngas into ethanol. *Energies*, Vol. 6, No. 8, pp. 3987-4000.
  71. TerAvest M. A.\*, He Z.\*, Rosenbaum M. A., Martens E. C., Cotta M. A., Gordon J. I. and Angenent L. T. (2014). Regulated expression of polysaccharide utilization and capsular biosynthesis loci in biofilm and planktonic *Bacteroides thetaiotaomicron* during growth in chemostats. *Biotechnology and Bioengineering*, Vol. 111, No. 1, pp. 165-173.
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\*Contributed equally

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### **Educational Books**

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### **Other Peer-Reviewed Publications**

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### **Non-Peer-Reviewed Publications**

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### **Seminars and Lectures**

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1. Carbon recovery from industrial waste gas and Greek-yogurt wastewater. Special symposium for the defense of Dr. Dandan Liu at the sub-department of Environmental Technology at Wageningen University, The Netherlands, April 13, 2018.

2. Carbon recovery in a society that is powered by renewable electricity. Lecture for the graduating class in the Chemistry department at the Technical University of Braunschweig, Germany, January 26, 2018.
3. From C1 to C8 with syngas fermentation and microbial chain elongation. Biological colloquium at Karlsruhe Institute of Technology, Germany, November 27, 2017.
4. Carbon recovery in a society that is powered by renewable electricity. Humboldt Lecture Series at the University of Tübingen, November 15, 2017.
5. Chain Elongation with reactor microbiomes: open-culture biotechnology for biomass to biochemical production. Advance Course Environmental Biotechnology, Delft, the Netherlands, June 23, 2017.
6. From C1 to C8 with syngas fermentation and microbial chain elongation. Seminar at the Institute of Molecular Biosciences at the University of Frankfurt, Germany, May 9, 2017.
7. From C1 to C8 with syngas fermentation and microbial chain elongation. Seminar at the Helmholtz-UFZ Leipzig, Germany, May 3, 2017.
8. From bioaerosols to the lung microbiome – a research summary. Seminar at the DTU-Biosustain, Denmark Technical University, Denmark, February 17, 2017.
9. Seminar at the Microbiological Colloquium of the SFB 766, University of Tübingen and UTK, February 2, 2017.
10. Pathogens in hospital and lung microbiomes. Symposium – Molecular Microbial Community Interaction at the University of Tübingen, January 20-21, 2017, Tübingen, Germany.
11. Pushing electrons into anaerobic microbial environments - science and applications. The Natural and Medical Sciences Institute (NMI) at the University of Tübingen, November 28, 2016.
12. Pushing electrons into anaerobic microbial environments - science and applications – Inaugural lecture in Geosciences. University of Tübingen, Germany, November 4, 2016.
13. Chain elongation to caprylate: microbiology and extraction. University of Ghent, Belgium, October 3, 2016.
14. Using reactor microbiomes to produce chemicals from biomass: medium-chain carboxylic acid oil. University of Edinburgh, Schotland, July 22, 2015.
15. Using reactor microbiomes to produce chemicals from biomass: medium-chain carboxylic acid oil. EAWAG, Dübendorf, Switzerland, May 22, 2015.
16. Resource recovery from organic waste streams by reactor microbiomes. Department of Biotechnology, Delft University, Delft, Netherlands, May 7, 2015.
17. The interplay between bioprocessing and molecular microbiology: carboxylate platform, syngas fermentation, and photo-bioreactors. DSM, Delft, The Netherlands, May 6, 2015.
18. Using reactor microbiomes to produce chemicals from biomass: medium-chain carboxylic acid oil. Jiangnan University, School of Environment and Civil Engineering, Wuxi, China, March 25, 2015.
19. Using reactor microbiomes to recover resources. Bioengineering, VIB, Leuven, Belgium, March 20, 2015.
20. Using reactor microbiomes to recover resources from wastes. LabMet Seminar at Ghent University, Belgium, November 6, 2014.
21. Reactor microbiomes to recover resources from wastes. Diko Seminar at the Max Planck Institute in Tübingen, Germany, September 16, 2014.
22. In-line extraction to steer chain elongation with reactor microbiomes. Mini-symposium on Chain Elongation that accompanied the thesis defense of Tim Grootscholten in the Sub-Department of Environmental Technology at Wageningen University, December 6, 2013.
23. Bioelectrochemical systems for microbial electrocatalysis, environmental sensing, and biocomputing. Department of Mechanical Engineering, Iowa State University, April 3, 2013.
24. Reactor microbiomes for bioenergy generation. iAMB, RTWH Aachen, Germany, September 25, 2012.



25. Shaping reactor microbiomes for bioenergy and biochemical production: the carboxylate platform. MBL microbial diversity summer course, Woods Hole, MA, July 16, 2012.
26. Reactor microbiomes for bioenergy generation: the carboxylate platform. The Environmental Engineering Program and IGERT in the Department of Civil and Environmental Engineering at the University of Minnesota, Minneapolis, MN, April 19, 2012.
27. Biomass to Fuel: with the carboxylate platform. Winter-enhancement program (WEP), KAUST, Saudi Arabia, January 20-22, 2012.
28. Undefined mixed cultures to convert wastes into energy with engineered systems. MBL microbial diversity summer course, Woods Hole, MA, July 6, 2010.
29. Bioelectrochemical systems: from wastewater to energy production. Chats in the Stacks Book Talk, Albert R. Mann Library, Cornell University, Ithaca, NY, February 25, 2010.
30. Undefined mixed cultures to convert organic waste into energy. The Environmental Engineering Program in the Department of Chemical Engineering at Yale University, New Haven, CT, April 14, 2009.
31. Nondefined mixed culture bioprocessing to convert organic waste into bioenergy. The Department of Chemistry and Biomolecular Science, Clarkson University, Potsdam, NY, December 15, 2008.
32. Nondefined mixed culture bioprocessing to convert organic waste into bioenergy. The department of Microbiology at Cornell University, December 4, 2008.
33. Nondefined mixed culture bioprocessing to convert organic waste into bioenergy. The department of Civil and Environmental Engineering at Cornell University, Ithaca, NY, September 25, 2008.
34. Electric power generation from municipal, food, and animal wastewaters using microbial fuel cells. Laboratory of Microbiology, Wageningen University, The Netherlands, May 14, 2008.
35. Electric power generation from municipal, food, and animal wastewaters using microbial fuel cells. The 2008 St. Louis Award Symposium, St. Louis section of the American Chemical Society, Department of Chemistry, St. Louis University, April 25, 2008.
36. Gene surveys to identify airborne bacteria. The Department of Molecular Microbiology at Washington University Medical School, St. Louis, MO, March 18, 2008.
37. Mixed cultures to generate bioenergy from waste. The department of Civil and Geological Sciences at Notre Dame University, South Bend, IN, November 29, 2007.
38. Mixed cultures to generate bioenergy from waste. The department of Biological and Environmental Engineering at Cornell University, Ithaca, NY, November 5, 2007.
39. Mixed cultures to generate bioenergy from waste. The department of Chemical and Biochemical Engineering at The University of Iowa, Iowa City, IA, October 11 2007.
40. Mixed cultures to generate bioenergy from waste. The Department of Civil and Environmental Engineering at Duke University, Durham, NC, May 24, 2007.
41. Mixed cultures to generate bioenergy from waste. The Department of Civil and Environmental Engineering at Northwestern University, Evanston, IL, April 27, 2007.
42. Mixed culture processing to convert wastewater into bioenergy. The Analytical Environmental Microbiology Applications Seminar, MIL, Inc., November 30, 2007.
43. Mixed culture processing to convert wastewater into bioenergy. The Missouri Water Environment Association (MWEA) Young Professional Lunch and Learn, St. Louis, MO, September 18, 2007.
44. Generating bioenergy from organic wastes: anaerobic digestion, microbial fuel cells, and biobutanol fermentation. Presented at the "Sustainable Energy" seminar: Faculté de l'Environnement Naturel, Architectural et Construit DECANAT (ENAC) at École Polytechnique Fédérale De Lausanne (EPFL), Switzerland, September 3, 2007.
45. Mixed culture bioprocessing of industrial and agricultural waste to generate energy. The Metropolitan Saint Louis Grants Conference. Research Day 2, Southern Illinois University Edwardsville, January 10, 2007.

46. From the gutter to the light switch: creating electricity with wastewater. Science Frontiers. Academy of Sciences – St. Louis and Skandalaris Center for Entrepreneurial Studies, Washington University in Saint Louis, November 29, 2006.
47. Making microbial fuel cells work: from reactor configurations to genes. The Biodesign Institute at Arizona State University, October 19, 2006, Tempe, AZ.
48. The upflow microbial fuel cell: simultaneous electricity generation and wastewater treatment. St. Louis AIChE chapter, March 15, 2006, St. Louis, MO.
49. The UMFC with an interior cathode. Sub-department of Environmental Technology, Wageningen University and Research Center, March 3, 2006.
50. Improving stability in anaerobic digestion for animal waste treatment by understanding microbial ecology. Genes to products: agricultural plant, microbe, and biobased product research. USDA, Cooperative State Research, Education, and Extension Service, February 27-28, 2006, Warrington, Virginia.
51. The upflow microbial fuel cell: simultaneous electricity generation and wastewater treatment. Environmental Engineering Program seminar series, Department of Civil and Environmental Engineering, University of Wisconsin – Madison, February 7, 2006.
52. Bacteriophages as surrogates for human viruses and biocontrol in environmental engineering studies. San Diego Microbiology Group, San Diego State University/University of California San Diego/The Scribbs Research Institute, La Jolla, CA, October 19, 2005.
53. From anaerobic digestion to microbial fuel cell research: the upflow microbial fuel cell. The Laboratory of Microbial Ecology and Technology, Ghent University, Belgium, August 4, 2005.
54. Microbial fuel cells (MFCs) – simultaneous wastewater treatment and energy production. Department of Chemical Engineering seminar series, University of Missouri at Rolla, Rolla, MO., December 3, 2004.
55. Electrotechnologies for reducing bioaerosol exposure in the indoor environment: HEPA-UV and corona soft-X-ray air purifiers. Air Quality, Health, and Risk, Electric Power Research Institute (EPRI), Palo Alto, CA, June 20, 2003.
56. Anaerobic digestion of swine waste and issues related to further disposal of the produced biosolids and effluent from the digester. National Risk Management Research Laboratory, US EPA, Cincinnati, OH, June 2, 2003.
57. Abundant mycobacteria in pool water and air of an indoor therapy pool. 1. Diagnostic Micro Journal Club, Washington University Medical School, St. Louis, MO., March 9, 2007.
58. Abundant mycobacteria in pool water and air of an indoor therapy pool. Department of Biology, Washington University in St. Louis, MO., January 13, 2003.
59. Abundant mycobacteria in pool water and air of an indoor therapy pool. Hospital Epidemiology Seminar Series, Infectious Diseases, Washington University Medical School, St. Louis, MO., October 29, 2002.
60. Abundant mycobacteria in pool water and air of an indoor therapy pool. Department of Biomedical Engineering, Washington University in St. Louis, MO., September, 13, 2002.
61. Anaerobic digestion and nutrient recovery as an on-farm, integral swine waste treatment system. Department of Civil Engineering seminar series, University of Missouri at Rolla, Rolla, MO., February 7, 2002.
62. From anaerobic waste treatment to bioaerosol testing: interfacing molecular tools with environmental engineering. Department of Civil and Environmental Engineering, University of Wisconsin-Madison, Madison, WI, July 25, 2001.
63. From anaerobic waste treatment to bioaerosol testing: interfacing molecular tools with environmental engineering. Environmental Engineering Science Program, Washington University in St. Louis, St. Louis, MO, July 19, 2001.
64. From anaerobic waste treatment to bioaerosol testing: interfacing molecular tools with environmental engineering. Department of Civil and Environmental Engineering and Center

for Environmental Biotechnology, University of Tennessee at Knoxville, Knoxville, TN, July 9, 2001.

### **Invited Conference Presentations (Attended)**

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1. Scientific perspectives for the further development of the biogas system – novelty lays in attachments (keynote presentation), IBK - Progress in Biogas IV, March 8-9, 2017, University of Hohenheim, Stuttgart, Germany.
2. The soil biosnorkel: microbial extracellular electron transfer mechanisms of biochar, Mikrobielle Bioelektrotechnologie: eine Plattforminitiative für Deutschland, November 22-23, 2016, Technische Universität Braunschweig, Germany.
3. Microbiome shaping of anaerobic fermentation and chain elongation to increase product specificity, ARPA-E symposium, October 27-28, 2016, Washington DC, USA.
4. The soil biosnorkel: microbial extracellular electron transfer mechanisms of biochar, 3rd European Meeting of the International Society for Microbial Electrochemistry and Technology (EU-ISMET 2016), September 26-28, 2016, Rome, Italy.
5. Resource recovery from food waste: from storage to biorefineries, Food Waste-to-Low Carbon Energy Conference, April 27-28<sup>th</sup>, 2016, New Brunswick, NJ, United States.
6. Production of medium-chain carboxylic acid (MCCA) oil by reactor microbiomes, Nova Nordisk Foundation, Cell Factories & Biosustainability - Technologies for Cell Factory Construction Conference, May 17-21, 2015, Copenhagen, Denmark.
7. Using reactor microbiomes to produce chemicals from biomass: medium-chain carboxylic acid oil (keynote presentation), Environmental Technology for Impact 2015 (ETEI2015) conference, April 29-30, 2015, Wageningen, The Netherlands.
8. The effects of residential weather proofing on environmental factors and aerobiological responses, Microbiology of the built environment conference, June 4-6, 2014, Boulder, Colorado.
9. Chain elongation with reactor microbiomes, 114th General Meeting, May 17-20, 2014, Boston, Massachusetts.
10. *Enterobacter aerogenes* and *Pseudomonas aeruginosa* at anodes: who's in charge? NA-ISMET meeting, May 13-15, 2014, State College, PA.
11. *Shewanella* as a model microbe at the anode, MFC4, September 1-4, 2013, Cairns, Australia.
12. The carboxylate platform to convert organic materials from wastewater into valuable biochemicals, IWA Leading-Edge Conference on Water and Wastewater Treatment Technologies (LET), June 2-6, 2013, Bordeaux, France.
13. Mediator-based *versus* direct contact-based exocellular electron transfer within synergistic bacterial communities in bioelectrochemical systems (keynote presentation), EU-ISMET meeting, September 26-28, 2012, Ghent, Belgium.
14. Reactor microbiomes for bioenergy generation, 1<sup>st</sup> Waterloo International Conference on sustainable technologies to treat organic wastes and wastewaters: the recovery of value-added products, August 8-9, 2012, Waterloo, Canada.
15. Bacterial community structure predicts function in full-scale bioenergy systems, First international symposium on Microbial Resource Management in Biotechnology: Concepts & Applications – scientific honorary farewell to Prof. Willy Verstraete, June 30-July 1, 2011, Ghent, Belgium.
16. Quorum sensing regulates electric current generation of *Pseudomonas aeruginosa* PA14 in bioelectrochemical systems, North American BioElectric Systems Meeting (NABESM), October 11-13, 2010, Amherst, MA.
17. Undefined mixed cultures to convert wastes into energy with engineered systems, 2<sup>nd</sup> International Conference on Ambient Sanitation Engineering, July 18-21 2010, Fortaleza, Brazil.

18. Quorum sensing regulates electric current generation of *Pseudomonas aeruginosa* PA14 in bioelectrochemical systems, 2010 ACS Northeast Regional Meeting, June 3-5 2010, Potsdam, NY.
19. Quorum sensing regulates electric current generation of *Pseudomonas aeruginosa* PA14 in bioelectrochemical systems – 239<sup>th</sup> ACS national meeting, March 21-25, 2010, San Francisco, CA.
20. Integrating BES in wastewater and sludge treatment flows – Second International Microbial Fuel Cell Conference on Waste to Energy, June 10-12, 2009, Gwangju Institute of Science and Technology (GIST), Gwangju City, The Republic of Korea.
21. Recovery of water in the corn-to-ethanol industry by integrating anaerobic digestion – Sixth International Starch Technology Conference, May 31-June 3, 2009, University of Illinois at Urbana-Champaign, Urbana, IL.
22. Conversion of organic waste to bioenergy. Alexander von Humboldt Foundation and U.S. National Academy of Sciences: 14<sup>th</sup> German-American Frontiers of Science Symposium, June 11-14, 2008, Potsdam, Germany.
23. Electric power generation from municipal, food, and animal wastewaters using microbial fuel cells. Microbial Fuel Cells - First International Symposium, Penn State University, May 27-29, 2008.
24. The Upflow Microbial Fuel Cell for wastewater treatment and electricity generation. The Knowledge Foundation's 8<sup>th</sup> Annual International Symposium on Small Fuel Cells, April 2 - 4, 2006, Washington DC, USA
25. Improving the power output of a continuously-fed microbial fuel cell. 2006 Pacific Rim Summit on Industrial Biotechnology and Bioenergy, January 11-13, 2006, Honolulu, HI.
26. Microbial fuel cells to simultaneously treat wastewater and produce electricity. 2005 Joint Meeting of the Missouri Branch of the American Society for Microbiology (ASM) and the Midwest Microbiology Educators, April 8, 2005, St. Louis MO.
27. Anaerobic migrating blanket reactor system. At: 35<sup>th</sup> annual ASCE environmental and water resources design conference, April 2-3, 1997, Iowa City, Iowa, USA.
28. Anaerobic migrating blanket reactor. At: 41<sup>st</sup> Great plains waste management conference, March 27, 1997, Omaha, Nebraska, USA.
29. Principles of the anaerobic migrating blanket reactor. At: 10<sup>th</sup> forum for applied biotechnology, 26-27 September, 1996, Gent University, Brugge, Belgium.

### **Papers in Conference Proceedings**

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1. Uman A. E.\*, Usack J. G., Lozano J. L. and Angenent L. T. (2017). Large variability of thickened sludge quality at a municipal plant makes  $n=1$  experiment with digestion invalid:  $n=2$  with pilot-reactor experiment shows excellent reproducibility. 15<sup>th</sup> World Congress on Anaerobic Digestion, October 17-20, 2017, Beijing, China.
2. Usack J. G.\*, Gerber Van Doren L. N., Posmanik R., Labatut R. A., Tester J. W. and Angenent L. T. (2017). An evaluation of anaerobic co-digestion implementation on New York State dairy farms using an environmental and economic life-cycle framework. 15<sup>th</sup> World Congress on Anaerobic Digestion, October 17-20, 2017, Beijing, China.
3. Spirito C. M.\*, Daley S. E., Werner J. J. and Angenent L.T. (2015). Time course analysis of the effects of antibiotic disturbances on anaerobic reactor microbiomes. 14<sup>th</sup> World Congress on Anaerobic Digestion, November 15-18, 2015, Viña del Mar, Chile.
4. Labatut R.\*, Angenent L. T. and Scott N. (2015). Characterizing polymer conversion of manure-based co-digestion streams: hydrolysis rate and extent. 14<sup>th</sup> World Congress on Anaerobic Digestion, November 15-18, 2015, Viña del Mar, Chile.
5. Xu J.\*, Guzman J. J., Spirito C. M., Andersen S., Rabaey K. and Angenent L. T. (2015). Oil production from complex substrates with microbiomes at ambient temperatures and

- pressures: electrochemically induced phase separation in the carboxylate platform. 14th World Congress on Anaerobic Digestion, November 15-18, 2015, Viña del Mar, Chile.
6. Gavazza S., Guzman J. J. L. and Angenent L.T. (2015). Application of an electric potential in anaerobic bioreactors to stimulate the azo dye treatment. 14<sup>th</sup> World Congress on Anaerobic Digestion, November 15-18, 2015, Viña del Mar, Chile.
  7. Dams R. I., Freitas I. B. F., Santaella S. T., Kucek L. A., Angenent L. T. and Leitão R. C. (2015). Caproic acid production by chain elongation using different fermentation conditions. 14<sup>th</sup> World Congress on Anaerobic Digestion, November 15-18, 2015, Viña del Mar, Chile.
  8. Perano K. M.\*, Gebremedhin K. G., Usack J. G., Shelford T. A., Gooch C. A. and Angenent L. T. (2014). Mitigating heat stress in dairy cattle via conductive cooling. In: *Proc. of the ASABE International Meeting*, Montreal, Canada, July 13-16, 2014.
  9. Agler M. T.\*, Spirito C. M., Usack J. G., Werner J. J. and Angenent L. T. (2013). Development of a highly specific and productive process for *n*-caproic acid production: applying lessons from methanogenic microbiomes. In: *Proc. of the 13th World Congress on Anaerobic Digestion*, June 26-28, 2013, Santiago de Compostela, Spain.
  10. Spirito C. M.\* and Angenent L. T. (2013). Effect of an antimicrobial growth promoter on the stability of manure-based anaerobic digesters. In: *Proc. of the 13th World Congress on Anaerobic Digestion*, June 26-28, 2013, Santiago de Compostela, Spain.
  11. Usack J. G.\* and Angenent L. T. (2013). Long-term assessment of multiple substrates for anaerobic co-digestion on dairy farms. In: *Proc. of the 13th World Congress on Anaerobic Digestion*, June 26-28, 2013, Santiago de Compostela, Spain.
  12. Wiratni, Usack J. G. and Angenent L. T. One cow, one digester, and one hour of cooking fuel daily. In: *Proc. of the 13th World Congress on Anaerobic Digestion*, June 26-28, 2013, Santiago de Compostela, Spain.
  13. Richter H.\*, Martin M. E. and Angenent L. T. (2012). A two-stage continuous fermentation system for conversion of syngas into ethanol. In: *Proc. of the 2012 SunGrant National Conference "Science for Biomass Feedstock Production and Utilization"*, October 2-5, New Orleans, LA.
  14. Kim K-Y\*, Angenent L. T. and Kim I. S. (2012). Biofuel production through Kolbe Electrolysis with mixtures of *n*-butyric acid and *n*-caproic acid. In: *Proc. of the 2012 Korean Society of Environmental Engineers Conference*, August 22-24, Changwon, South Korea.
  15. Werner J. J., Knights D. B., Garcia M. L., Scalfone N., Cummings T. A., Beers A. R., Knight R. and Angenent L. T.\* (2010). Phylogenetic dynamics of bacterial communities in a time series of nine full-scale granular upflow digesters treating brewery wastewater. In: *Proc. of the 12<sup>th</sup> World Conference on Anaerobic Digestion*, October 31-November 4, 2010, Guadalajara, Mexico.
  16. Perkins S. D., Scalfone N. B. and L. T. Angenent L. T.\* (2010). Comparative 16S rRNA gene surveys of granular sludge from three upflow anaerobic bioreactors treating purified terephthalic acid (PTA) wastewater. In: *Proc. of the 12<sup>th</sup> World Conference on Anaerobic Digestion*, October 31-November 4, 2010, Guadalajara, Mexico.
  17. Wiratni\* and Angenent L. T. (2010). Improved design of low-cost anaerobic digesters for household biogas production in Indonesian rural areas. In: *Proc. of the Chemeca 2010 annual conference*, September 26–29, 2010, Adelaide, Australia.
  18. Rosenbaum M. and Angenent L. T.\* (2009). A microbial fuel cell laboratory for freshmen undergraduate students. In: *Proc. of the 8<sup>th</sup> World Conference on Chemical Engineering*, August 23-27, 2009, Montréal, Quebec, Canada.
  19. Rosenbaum M., Agler M. T., Fornero J. J., Venkataraman A. and Angenent L. T.\* (2009). Integrating BES in wastewater and sludge treatment flows. In: *Proc. of the 2<sup>nd</sup> International Microbial Fuel Cell Conference on Waste to Energy*, June 10-12, 2009, Gwangju Institute of Science and Technology (GIST), Gwangju City, The Republic of Korea.

20. Rosenbaum M. \*, Cotta M. A. and Angenent L. T. (2009). Efficiencies of bio-electrocatalytic production of hydrogen from lactate using *Shewanella oneidensis* MR-1. In: *Proc. of the 2<sup>nd</sup> International Microbial Fuel Cell Conference on Waste to Energy*, June 10-12, 2009, Gwangju Institute of Science and Technology (GIST), Gwangju City, The Republic of Korea.
21. Agler M. T., Wrenn B. A. and Angenent L. T. \* (2009). Recovery of water in the corn-to-ethanol industry by integrating anaerobic digestion. In: *Proc. of the 6th International Starch Technology Conference*, May 31-June 3, 2009, University of Illinois at Urbana-Champaign, Urbana, IL.
22. Garcia M. L., Dryden S. K. and Angenent L. T.\* (2007). Swine waste treatment with anaerobic sequencing batch reactors: performance and microbial community. In: *Proc. of the 2007 IWA, anaerobic digestion in mountain area and isolated rural zones workshop*, June 5-7, 2007, Chambéry, France.
23. He Z.\* and Angenent L.T. (2006). Upflow microbial fuel cell operation without a proton exchange membrane. In: *Proc. of the International Water Association World Water Congress and Exhibition*, September 10-14, 2006, Beijing, China.
24. Hoffmann R. \*, Garcia M. L., Veskiivar M., Varma R., Karim K., Al-Dahhan M. H. and Angenent L. T. (2005). Effect of shear on performance and microbial ecology of completely-stirred anaerobic digesters treating animal manure. In: *Proc. of the Animal Agriculture and Processing: Managing Environmental Impacts Conference*, Aug. 31 – Sept. 2, 2005, St. Louis, MO, Air and Waste Management Association and Water Environment Federation.
25. Angenent L. T. \*, Sung S. and Raskin L. (2002). Methane yield and methanogen levels of ASBR systems treating swine waste: effect of different inocula. In: *Proc. of the VII Latin American Workshop and Symposium on Anaerobic Digestion (LAAD2002)*, October 22-25, Mérida, Yucatán, Mexico, pp. 253-260, International Water Association, London, UK.
26. Daugherty B. J. \*, Angenent L. T., Champion J., Agbisit R., Rausch K., Tumbleson M. and Raskin L. (2002). Using biological processes to recover sulfur from corn processing industry waste streams. In: *CD-rom of the WEFTEC'02*, September 30 - October 3, 2002, Chicago, Illinois USA, Water Environment Federation, Alexandria, Virginia, USA.
27. Angenent L. T. \*, Mau M., Jindal A., George U., Zahn J. A. and Raskin L. (2001). Monitoring antibiotic resistance in biological waste treatment systems. In: *CD-rom of the WEFTEC'01*, Molecular Techniques Session, October 13-17, 2001, Atlanta, Georgia, USA, Water Environment Federation, Alexandria, Virginia, USA.
28. Angenent L. T. \*, Sung S. and Raskin, L. (2001). Mixing intensity in anaerobic sequencing batch reactor affects reactor performance and microbial community structure. In: *Proc. of the Anaerobic Digestion 9<sup>th</sup> World Congress*, Part 1, pp. 267-274, September 2-6, 2001, Antwerp, Belgium. International Water Association, London, UK.
29. Angenent L. T., Sung S. and Raskin, L. (2001). Methanogenic population dynamics during startup of a full-scale anaerobic sequencing batch reactor treating swine waste. In: *Proc. of the Anaerobic Digestion 9<sup>th</sup> World Congress*, Part 2, pp. 365-368, September 2-6, 2001, Antwerp, Belgium. International Water Association, London, UK.
30. Angenent L. T. \*, Banik G. C. and Sung S. (2000). Psychrophilic anaerobic pretreatment of low-strength wastewater using the anaerobic migrating blanket reactor. In: *CD-rom of the WEFTEC'00*, October 14-18, 2000, Anaheim, California, USA, Water Environment Federation, Alexandria, Virginia, USA.
31. Angenent L. T. \*, Sung S. and Raskin L. (1999). Phosphorus removal and recovery from swine waste: Results of pretreatment with ASBRs. In: *CD-rom of the WEF Animal Residuals Management Conference*, November 14-16, 1999, Crystal City, Virginia, USA, Water Environment Federation, Alexandria, Virginia, USA.
32. Angenent L. T. \*, Mau M., Zheng D., Sung S. and Raskin L. (1999). Microbial structure of granules and *Methanosaeta* fibers in anaerobic migrating blanket reactors. In: *Proc. of the IAWQ/IWA Conference on Biofilm Systems*, pp. 88-91, October 17-20, 1999, New York, New York, USA.

- York, USA, International Association on Water Quality/International Water Association, London, UK.
33. Angenent L. T.\*, Sung S. and Raskin L. (1999). Phosphorus removal and recovery from the effluent of an anaerobic sequencing batch reactor treating swine waste. In: *CD-rom of the WEF/Purdue Industrial Waste Technical Conference, June 27-30, 1999, Indianapolis, Indiana, USA, Water Environment Federation, Alexandria, Virginia, USA.*
  34. Angenent L. T.\*, Sung S. and Dague R. R. (1997). Start-up and granulation of the anaerobic migrating blanket reactor (AMBR). In: *Proc. of the WEFTEC'97, No. 1, pp. 113-124, October 18-22, 1997, Chicago, Illinois, USA, Water Environment Federation, Alexandria, Virginia, USA.*
  35. Angenent L. T.\*, Sung S. and Dague R. R. (1997). Start-up of the anaerobic migrating blanket reactor (AMBR) seeded with primary digester sludge. In: *Proc. of the AFS97; Advances in Filtration and Separation Technology, (Edited by Bauman E. R. and Weisert L.), Vol. 11, pp. 602-607, April 29-May 2, 1997, Minneapolis, Minnesota, USA, The American Filtration and Separations Society, Northport, Alabama, USA.*
  36. Angenent L. T., Sung S. and Dague R. R. (1997). Granulation and start-up of the anaerobic migrating blanket reactor process. In: *Proc. 8th International Conference on Anaerobic Digestion, Sendai, Japan, May 1997, No. 3, pp. 182-185.*
  37. Flamming J. J.\*, Angenent L. T., Sung S. and Dague R. R. (1997). Treatability studies of a combined industrial wastewater stream using the anaerobic migrating blanket reactor. In: *Proc. of 52nd Purdue Industrial Waste Conference (Edited by Alleman J. E. and Butz R.), pp. 289-303, May 5-7, 1997, Ann Arbor Press, Chelsea, Michigan, USA.*
  38. Angenent L. T.\* and Dague R. R. (1996). Initial studies on the anaerobic migrating blanket reactor. In: *Proc. of 51st Purdue Industrial Waste Conference (Edited by Dalton C. S. and Wukasz R. F.), pp. 271-288, May 6-8, 1996, Purdue University, West Lafayette, Indiana, USA, Ann Arbor Press, Chelsea, Michigan, USA.*
  39. Angenent L. T.\* and Dague R. R. (1995). A laboratory-scale comparison of the UASB and ASBR processes. In: *Proc. of 50th Purdue Industrial Waste Conference (Edited by Dalton C. S. and Wukasz R. F.), pp. 365-377, May 8-10, 1995, Purdue University, West Lafayette, Indiana, USA, Ann Arbor Press, Chelsea, Michigan, USA.*
  40. Angenent L. T.\* and Dague R. R. (1996). Principles of the anaerobic migrating blanket reactor. In: *Med. Fac. Landbouww. Univ. Gent, Vol. 61, No. 4b, pp. 2077-2084.*

\* Presenter for podium presentation

### **Abstracts and Posters at Conferences**

1. Harroff L.A., Liotta J.L., Wangolo E.E., Egan T., Bowman D.D., Angenent L.T. (2018). Pathogen inactivation in fecal sludge through *in-situ* accumulation of carboxylic acids: development from lab scale to field trials. Water and Health Conference: Where Science Meets Policy, October 29- November 2, 2018, University of North Carolina, Chapel Hill, NC.
2. Usack J.G., Hafenbradl D., Posmanik R., Tester J. W., and Angenent L. T. (2018). Integrating electrochemical, biological, physical, and thermochemical process units to expand the applicability of anaerobic digestion. 5th International Conference on Renewable Energy Gas Technology, REGATEC 2018. Toulouse, France, May 3rd-4th, 2018.
3. Harroff L. A., Liotta J. T., Bowman D. D. and Angenent L. T. (2017). Inactivation of *Ascaris* eggs through *in-situ* production of carboxylic acids. Water and Health Conference: Where Science Meets Policy, October 16-20, 2017, Chapel Hill, NC, USA.
4. Stang C.\*, Xu J., Sträuber H., dos Santos T. R., Mühlenberg J., Härtig C., Angenent L. T., Harnisch F. (2016). Microbiomes and electroorganic syntheses: a fruitful liason for the

- production of renewable chemicals. ProcessNet-Jahrestagung und 32. DECHEMA-Jahrestagung der Biotechnologen, September 12-15, 2016, Aachen, Germany.
5. Posmanik R., Labatut R. A. \*, Kim A. H., Usack J. G., Tester J. W. and Angenent L. T. (2016) Coupling hydrothermal liquefaction and anaerobic digestion for energy valorization from food waste. Bioresource Technology 1st International Conference for Bioenergy, Bioproducts & Environmental Sustainability. October 23-16, 2016, Sitges, Spain.
  6. Daly S.E. \*, Usack J. G. and Angenent L. T. (2016). Acidification of food waste during storage after grinding with InSinkerator® technology. Food Waste-to-Low Carbon Energy Conference, April 27-28, 2016, New Brunswick, NJ.
  7. Posmanik R., Labatut R. A., Kim A. H., Usack J. G., Tester J. W. and Angenent L. T. (2016) Integrating hydrothermal liquefaction and anaerobic digestion for sustainable energy generation from food waste. Food Waste-to-Low Carbon Energy Conference, April 27-28, 2016, New Brunswick, NJ.
  8. Usack J. G., Gerber Van Doren L., Posmanik R., Tester J. W. and Angenent L. T. (2016). A life-cycle evaluation of food waste anaerobic co-digestion implementation on dairy farms. Food Waste-to-Low Carbon Energy Conference, April 27-28, 2016, New Brunswick, NJ.
  9. Stang C., Xu J., Sträuber H., dos Santos Dantas T. R., Mühlenberg J., Härtig C., Angenent L. T., Harnisch F. (2016). Renewable chemicals and fuels: Interfacing microbial waste degradation with classical electroorganic synthesis. New Frontiers for Biotech-Processes (Dechema Himmelfahrtstagung 2016), 2nd-4th May 2016, Koblenz, Germany.
  10. Stang C., Xu J., Sträuber H., dos Santos Dantas T. R., Mühlenberg J., Härtig C., Angenent L. T., Harnisch F. (2016). The liaison between microbiomes and electroorganic syntheses: Upgrading microbial intermediates to alkanes and esters. Annual Conference 2016 of the Association for General and Applied Microbiology, 13th-16th of March 2016, Jena, Germany.
  11. Dams R. I. \*, Freitas I. B. F., Santaella S. T., Kucek L. A., Angenent L. T. and Leitão R. C. (2015). Caproic acid production by chain elongation using different fermentation conditions. 4<sup>th</sup> Latin American Congress from the Sociedad Latino Americana de Biotecnologia Ambiental y Algal (IV SOLABIAA), November 8-13, 2015, Florianópolis, Brazil.
  12. Xu J., Guzman J. J. L., Spirito C. M., Andersen S., Rabaey K. and Angenent L. T. \* (2015). Oil production from complex substrates with microbiomes at ambient temperatures and pressures: electrochemically induced phase separation in the carboxylate platform. The 5th ISMET meeting, October 1-4, 2015, Arizona State University, Tempe, AZ.
  13. Guzman J. J. L. \*, Pehlivaner-Kara M., Frey M. M. and Angenent L. T. (2015). Performance of polyacrylonitrile (PAN)-based electrospun materials coated in PEDOT conductive polymer as electrodes for bioelectrochemical systems. The 5th ISMET meeting, October 1-4, 2015, Arizona State University, Tempe, AZ.
  14. Kucek L. A. \* and Angenent L. T. (2015). The carboxylate platform: conversion of carbon-rich wastes into liquid fuels and chemicals. The Water Environment Federation Technical Exhibition and Conference (WEFTEC), September 26-30, 2015, Chicago, Illinois, USA.
  15. Nguyen M. \*, Hospodsky D., Spirito C. M. and Angenent L. T. (2015). Energy conservation effects on the indoor environment. The 4th Annual Conference on the Microbiome of the Built Environment, July 15-18, 2015, Boulder, Colorado, USA.
  16. Nguyen M. \*, Hospodsky D., Spirito C. M. and Angenent L. T. (2015). Temporal air Exchange rates and relative humidity may affect airborne microbiomes more than weatherization efforts. Healthy Buildings 2015 America conference, July 19-22, 2015, Boulder, Colorado, USA.
  17. Usack J. G. \* and Angenent L. T. (2015). Life cycle and economic assessment of NYS dairy co-digestion. Dairy Environmental Systems and Adaptation Conference, Cornell University, Ithaca, NY, USA, July 29-31, 2015.



18. Guzman J. J. L., Pehlivaner-Kara M., Frey M. M. and Angenent L. T. (2015). Analysis of novel polyacrylonitrile-based electrospun materials as electrodes for bioelectrochemical systems. Environmental Technology for Impact Conference 2015, April 29-30, 2015, Wageningen University and Research Centre, Wageningen, Netherlands.
19. Guzman J. J. L., Pehlivaner-Kara M., Frey M. M. and Angenent L. T. (2015). Analysis of novel polyacrylonitrile-based electrospun materials as electrodes for bioelectrochemical systems. The 12th Annual Yale Bouchet Conference on Diversity and Graduate Education, April 10-11, 2015, Yale University, New Haven, CT.
20. Schröder U.\*, Harnisch F. and Angenent L. T. (2014). The development of microbial electrochemical technologies and the need for terminology and classification. European Union regional meeting of the International Society for Microbial Electrochemistry and Technology (EU-ISMET meeting), September 3-5, 2014, Alcalá University, Alcalá de Henares, Madrid.
21. Kucek L. A.\* and Angenent L. T. (2014). The carboxylate platform: conversion of carbon-rich wastes into liquid fuels and chemicals. National Advanced Biofuels Conference & Expo, October 13, 2014, Minneapolis, MN.
22. Martin M. E.\*, Richter H. and Angenent L.T. (2014). A comparison of the performance of carboxydrotrophic *Clostridium* strains for use in syngas to ethanol fermentation. SIMB annual Meeting, Session 16, S84. August 11-15, 2014, San Diego, CA.
23. Regueiro L.\*, Usack J. G., Spirito C. M., Hospodsky D., Werner J. J. and Angenent L. T. (2014). Statistical correlations between environmental data and high-throughput sequencing data explains reactor microbiome changes during co-digestion. 2<sup>nd</sup> International Conference in Biogas Microbiology (ICBM2). June 10-12, 2014, Uppsala, Sweden.
24. Kahlstorf D., Woodward K., Kraus J., Agler M., Angenent L. and Werner J. J.\* (2014). Reverse beta oxidation functional diversity in a hexanoic acid producing bioreactor. Northeast Microbiologists: Physiology, Ecology and Taxonomy (NEMPET 2014) Conference, June 27-29, 2014, Blue Mountain Lake, NY.
25. Xu J.\*, Guzman J. J., Andersen S., Rabaey K. and Angenent L. T. (2014). Continuous production of an oily stream of medium-chain carboxylic acids with a microbial electrochemical technology. North American regional meeting of the International Society for Microbial Electrochemistry and Technology (NA-ISMET meeting), May 13-15, 2014, Penn State University, University Park, PA.
26. Hospodsky D. and Angenent L. T. (2013). Introduction of the Upstate NY weatherization project. AAAR 2013 - Annual Conference of the American Aerosol Association, September 30 - October 4, 2013, Portland, OR, USA.
27. Werner J. J.\*, Kraus J. W. and Angenent L. T. (2013). De-novo assembly of a shotgun metagenomics time series reveals dynamics of genomes in a bioreactor producing hexanoic acid from biomass. North Eastern Microbiologists: Physiology, Ecology and Taxonomy (NEMPET) 2013 Annual Meeting, June 21-23 2013, Blue Mountain Lake, NY.
28. Friedman E. S.\*, McPhillips L. E., Miller K., Lipson D. A., Walter M. T. and Angenent L. T. (2013). Use of microbial electrochemical systems to study microbial community dynamics in environmental ecosystems. Association of Environmental Engineering & Science Professors 50th Anniversary Conference, July 14-16, Golden, CO.
29. Jung E. E., Michael K., Doud D. F. R., Angenent L. T. and Erickson D.\* (2013). High density photobiorefineries with optimized light delivery; 2<sup>nd</sup> European Optical Society Conference on Optofluidics (EOSOF), May 13-15, Munich, Germany.
30. Webster D. P.\*, TerAvest M. A. and Angenent L. T. (2013). Synthetic biology and water quality: The *Shewanella* assay for extended biomonitoring of environmental toxins. NYWEA 85th Annual Meeting & Exhibition, February 4-6, 2013, New York City, NY.
31. Friedman E.S., Miller K., Lipson D. A. and Angenent L. T. (2012). Utilization of subsurface microbial electrochemical systems to elucidate the mechanisms of competition between

- methanogenesis and microbial iron(III)/humic acid reduction in Arctic peat soils. American Geophysical Union Fall Meeting, December 3-7, 2012, San Francisco, CA.
32. Richter H.\* and Angenent L.T. (2012). Biocatalytic conversion of short chain fatty acids to alcohols via syngas fermentation, SunGrant, National Conference “Science for Biomass Feedstock Production and Utilization”. October 03, 2012 New Orleans, LA.
  33. Hennebel T.\*, Voulis N., Andersen S., Desloover J., Angenent L. and Rabaey K. (2012). Bioelectrochemically steered fermentations to butyrate production, EU-ISMET meeting, September 26-28, 2012, Ghent, Belgium.
  34. Richter H. and Angenent L. T. (2012). Syngas fermentation for liquid biofuels. SIMB 34<sup>th</sup> Symposium on Biotechnology for Fuels and Chemicals, April 30 - May 3, New Orleans, LA.
  35. Usack J. G., Gooch C. A. and Angenent L. T. (2012). Anaerobic co-digestion of dairy waste with three organic co-substrate types. Got Manure? Enhancing Environmental and Economic Sustainability AgSTAR Conference, March 27-29, 2012, Syracuse, NY.
  36. Spirito C. M., Wittman J. K. and Angenent L. T. (2012). Effect of the antibiotic monensin on the stability of manure-based anaerobic digesters. Got Manure? Enhancing Environmental and Economic Sustainability AgSTAR Conference, March 27-29, 2012, Syracuse, NY.
  37. Angenent L. T.\*, Agler M. T., Werner J. J., Heger S., Hollert H., Dien B. S., Iten L. B. and Cotta M. A. (2011). The effect of different lignocellulosic pretreatment methods on diverse microbial consortiums in a bioprocess step to generate fuel precursors. SETAC North America 32nd Annual Meeting, November 13-17, Boston, MA.
  38. Heger S.\*, Bluhm K., Brinkmann M., Winkens K., Schneider A., Wollenweber M., Maletz S., Wölz J., Agler M. T., Angenent L. T., Seiler T. B. and Hollert H. (2011). What's up inside the reactor - Biotests for risk assessment of biofuel fermentation. SETAC North America 32nd Annual Meeting, November 13-17, Boston, MA.
  39. Richter H., Qureshi N., Dien B., Cotta M.A. and Angenent L.T. (2011). Long-term conversion of n-butyrate to n-butanol with *Clostridium saccharoperbutylacetonicum* using a two-stage continuous culture and *in-situ* product removal. SIM annual meeting and exhibition, July 24-28, 2011, New Orleans, USA.
  40. Venkataraman A., Li Z., Rosenbaum M. A. and Angenent L. T.\* (2011). *Pseudomonas aeruginosa* – A model organism for understanding ecological networks in bioelectrochemical systems. 3<sup>rd</sup> International Microbial Fuel Cell Conference, June 6-8, Leeuwarden, The Netherlands.
  41. Rosenbaum M. A., Bar H. Y., Beg Q. K., Segrè D., Booth J., Cotta M. A. and Angenent L. T. (2011). Transcriptional profiling of *Shewanella oneidensis* with an electrode, iron(III)-citrate, or oxygen as the electron acceptor. 3<sup>rd</sup> International Microbial Fuel Cell Conference, June 6-8, Leeuwarden, The Netherlands.
  42. Heger S., Winkens K., Schneider A., Wollenweber M., Brinkmann M., Maletz S., Wölz J., Bluhm K., Agler M. T., Seiler T. B., Angenent L. T. and Hollert H. (2011). What's up inside the reactor - biotests for risk assessment of biofuel fermentation. 21th Annual Meeting SETAC Europe, May 14-19, 2011, Milan, Italy.
  43. Friedman E. S.\*, Lee A., Rosenbaum M. A. and Angenent L.T. (2010). Remote *in-situ* chronoamperometric monitoring of bacterial respiration in arctic peat soils. North American BioElectric Systems Meeting (NABESM), October 11-13, 2010, Amherst, MA.
  44. TerAvest M. A.\*, Rosenbaum M. A. and Angenent L. T. (2010). Characterizing the effect of microaerobic conditions on *Shewanella oneidensis* in bioelectrochemical systems. North American BioElectric Systems Meeting (NABESM), October 11-13, 2010, Amherst, MA.
  45. Rosenbaum M. A.\*, Bar H. Y., Beg Q., Booth J., Segrè D., Cotta M. A. and Angenent L. T. (2010). Transcriptional profiling of *Shewanella oneidensis* with an electrode, iron(III)-citrate, and oxygen as the electron acceptor. North American BioElectric Systems Meeting (NABESM), October 11-13, 2010, Amherst, MA.

46. Villano M., Rosenbaum M., Aulenta F., Majone M., Angenent L. T. (2010). Production of gaseous or liquid value-added products in bioelectrochemical systems. 14th International Biotechnology Symposium and Exhibition, September 14-18, 2010, Rimini, Italy.
47. Rosenbaum M.\*, Bar H. Y., Beg Q., Booth J., Segrè D., Cotta M. A. and Angenent L. T. (2010). Transcriptional profiling of *Shewanella oneidensis* with an electrode, iron(III)-citrate, and oxygen as the electron acceptor. 2010 ACS Northeast Regional Meeting, June 3-5 2010, Potsdam, NY.
48. Richter H., Qureshi N., Cotta M. A. and Angenent L. T. (2010). Producing butanol from syngas with hollow fiber bioreactors. Northeast Sun Grant 2010 Regional Conference. May 24-26 2010, Syracuse, NY.
49. Agler M. T.\*, Iten L. B., Cotta M. A., Dien B. S. and Angenent L. T. (2010). Toward narrowing fermentation endproduct distribution in mixed culture anaerobic conversion of lignocellulosic corn fiber to n-butyrate. 2010 Cornell Engineering Research Conference, March 17 2010, Ithaca, NY.
50. Werner J. J.\*, Garcia M. L., Perkins S. D., Smith S. R., Muegge M. D., Gordon J. I. and Angenent L. T. (2010). Stability of microbial communities in mesophilic anaerobic digesters. Institute for Biological Engineering 2010 Annual Conference. March 4-6, 2010, Boston, MA.
51. Agler M. T.\*, Iten L. B., Qureshi N., Cotta M. A., Dien B. and Angenent L. T. (2010). Toward narrowing endproduct distribution in nondefined mixed culture anaerobic conversion of lignocellulosic corn Fiber to n-butyrate. Institute for Biological Engineering 2010 Annual Conference. March 4-6, 2010, Boston, MA.
52. Venkataraman A.\*, Rosenbaum M., Arends J. B. A. and Angenent, L. T. (2010). Quorum sensing regulates electric current generation of *Pseudomonas aeruginosa* PA14 in bioelectrochemical systems. Institute for Biological Engineering 2010 Annual Conference. March 4-6, 2010, Boston, MA.
53. Rosenbaum M.\*, Venkataraman A., Li R. L., Cotta M. A. and Angenent L.T. (2010). Oxygen – Enemy or Friend for Microbial Fuel Cell Anode Performance? Institute for Biological Engineering 2010 Annual Conference. March 4-6, 2010, Boston, MA.
54. Richter H.\*, Qureshi N., Cotta M. A. and Angenent L. T. (2010). Conversion of n-butyrate to n-butanol with continuous fermentation. Institute for Biological Engineering 2010 Annual Conference. March 4-6, 2010, Boston, MA.
55. Li R. L., Rosenbaum M. and Angenent L. T. (2010). Performance of *Shewanella oneidensis* in a microbial fuel cell as a function of the dissolved oxygen concentration. Institute for Biological Engineering 2010 Annual Conference. March 4-6, 2010, Boston, MA.
56. Heger S., Bluhm K., Brinkmann M., Winkens K., Schneider A., Wollenweber M., Maletz S., Wölz J., Agler M. T., Seiler T. B., Angenent L. T. and Hollert H. (2010). What's up inside the reactor – Biotests for risk assessment of biofuel fermentation. 20th Annual Meeting SETAC Europe, May 23-27, 2010, Seville, Spain.
57. Lipson D., Mauritz M., Bozzolo F., Raab T. K., Santos M. J., Friedman E. S., Rosenbaum M., Angenent L. T. (2009). Seasonal and spatial variation in soil chemistry and anaerobic processes in an Arctic ecosystem. American Geophysical Union Fall Meeting, December 14-18, 2009, San Francisco, CA.
58. Heger S., Winkens K., Schneider A., Wollenweber M., Brinkmann M., Maletz S., Wölz J., Bluhm K., Agler M. T., Seiler T. B., Angenent L. T. and Hollert H. (2009). Assessing the ecotoxicological effects of bioenergy extraction processes. 30<sup>th</sup> Annual Meeting SETAC North America, November 19-23, 2009, New Orleans, Louisiana, USA.
59. Raab T. K., Lipson D. A., Friedman E. S., Rosenbaum M. and Angenent L. T. Iron-cold iron-is master of them all: consequences of microbial iron-reduction for soil organic matter in coastal arctic tundra. 17<sup>th</sup> Arctic Conference, University of Colorado at Boulder, November 13-14, 2009.

60. Fornero J. J., Rosenbaum M., Cotta M. A. and Angenent L. T. (2009). Ion exchange membrane influence on ohmic resistance. 2<sup>nd</sup> International Microbial Fuel Cell Conference on Waste to Energy, June 10-12, 2009, Gwangju Institute of Science and Technology (GIST), Gwangju City, The Republic of Korea.
61. Heger S., Winkens K., Schneider A., Brinkmann M., Maletz S., Wölz J., Agler M. T., Angenent L. T., Seiler T. B. and Hollert H. (2009). Assessing the ecotoxicological effects of bioenergy extraction processes. 2009 Europe Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC), 31 May - 4 June, 2009, Gothenburg, Sweden.
62. Venkataraman A., Arends J. B. A., Rosenbaum M. and Angenent L. T. (2009). *Pseudomonas aeruginosa* in bioelectrochemical systems (BESs) - a characterization of mutants. 109<sup>th</sup> General Meeting of the American Society of Microbiology, May 17-21, 2009, Philadelphia, PA.
63. Rosenbaum M.\*, Barron B., Balcerzak P. and Angenent L.T. (2009). Microbial fuel cells as versatile science teaching tools. 2009 Institute of Biological Engineering IBE Annual Conference, March 19-21 2009, Santa Clara, CA.
64. Agler M. T.\*, Iten L. B., Qureshi N., Cotta M. A., Dien B. and Angenent L. T. (2009). Use of nondefined mixed cultures for anaerobic conversion of lignocellulosic corn fiber to n-butyrate. 2009 Institute of Biological Engineering IBE Annual Conference, March 19-21 2009, Santa Clara, CA.
65. Agler M. T., Iten L. B., Qureshi N., Cotta M. A., Dien B. and Angenent L. T. (2008). Mixed-community bioreactors to convert (ligno)cellulosic feedstocks into liquid biofuels. 2008 Northeast Renewable Energy Conference. August 26-28, 2008, State College, PA.
66. Fornero J. J., Rosenbaum M., Cotta M. A. and Angenent L. T. (2008). Microbial fuel cell performance with a pressurized cathode. Microbial Fuel Cells-First International Symposium. May 26-29, 2008, Pennsylvania State University, State College, PA.
67. Rosenbaum M., Cotta M. A. and Angenent L. T. (2008). Synergetic effects of microbial binary cultures on microbial fuel cell performance. Microbial Fuel Cells-First International Symposium, May 26-29 2008, Pennsylvania State University, State College, PA.
68. Rosenbaum M., Frawley E. R., Lee R. E., Angenent L. T. and Kranz R. G. (2008). Recombinant engineering of *Shewanella oneidensis* MR-1 c-type cytochromes in *Escherichia coli*. 108<sup>th</sup> General Meeting of the American Society for Microbiology, June 1-5 2008, Boston, MA.
69. Perkins S. D., Mayfield J., Fraser V. and Angenent L. T. (2008). Effectiveness of membrane-integrated filters to decrease microbial counts in shower-generated aerosols on a blood and marrow transplant unit. 2008 Annual Scientific Meeting of the Society for Healthcare Epidemiology of America. April 5-8, 2008, Orlando, FL.
70. Garcia M. L.\*, Dryden S. K. and Angenent L. T. (2008). Treating swine waste with anaerobic sequencing batch reactors: performance and microbial community. 2008 Institute of Biological Engineering Annual Meeting, March 6-9, 2008, Chapel Hill, NC.
71. Agler M. T.\*, Garcia M. L. and Angenent L. T. (2008). Conversion of thin stillage from corn-to-ethanol dry mills into biogas to offset natural gas consumption. 2008 Institute of Biological Engineering Annual Meeting, March 6-9, 2008, Chapel Hill, NC.
72. Rosenbaum M., Cotta M. A. and Angenent L. T. (2008). Teamwork in microbial fuel cells: symbiotic conversion of sugars into electricity. Gordon Research Conference on Electrochemistry, January 14-19, 2008, Ventura, CA.
73. He Z., Martens E.C., Gordon J. I. and Angenent L. T. (2007). Functional genomic studies of electricity generation by *Bacteriodes thetaiotaomicron*. 2007 Institute of Biological Engineering Annual Meeting, March 30-April 1, 2007, St. Louis, MO.

74. Dryden S. K.\*, Ramaswami B., Yuan Z., Giammar D. E. and Angenent, L. T. (2007). Coliphages to Trace Fecal Pollution in the Table Rock Watershed. 2007 MWEA-AWWA Joint Annual Meeting, March 25-28, 2007, Osage Beach, MO.
75. He Z. and Angenent L. T. (2006). Selecting a microbiota with a high electron transfer rate in the Upflow Microbial Fuel Cell (UMFC). 106<sup>th</sup> General Meeting of the American Society for Microbiology, Orlando, FL, May 21-25, 2006.
76. Steinhaus B., Garcia M. L., Shen A. Q. and Angenent L. T. (2006). Using microfluidics to study the optimal growth conditions of pure cultures of *Methanosaeta concilii*. 106<sup>th</sup> General Meeting of the American Society for Microbiology, Orlando, FL, May 21-25, 2006.
77. He Z. and Angenent L. T.\* (2006). The Upflow Microbial Fuel Cell: simultaneous electricity generation and wastewater treatment. ICE, International Conference on Bioenergy: From Concept to Commercial Processes, Tomar, Portugal March 5-10, 2006.
78. Steinhaus B.\*, Shen A. and Angenent L. (2005). Growth and analysis of anaerobic wastewater methanogens using microfluidics. 58<sup>th</sup> Meeting of the Division of Fluid Dynamics, November 20-22, Chicago, IL, American Physical Society, College Park, MD.
79. Kettleson E. M.\*, Ramaswami B., Hogan Jr. C. J., Lee M., Biswas P., and Angenent L. T. (2005). Inactivation of virus aerosol particles in an electrostatic precipitator. 24<sup>th</sup> Annual Conference, pp.108, October 17-21, 2005, Austin, TX, American Association for Aerosol Research (AAAR), Mt. Laurel, NJ.
80. Giammar D.\*, Yuan Z., Ramaswami B., Falke S., Angenent L., and Casaletto D. (2005). Evaluation of chemical and biological indicators for centralized and decentralized wastewater treatment source inputs at Table Rock Lake. 2005 Missouri Water Environment Association Annual Meeting, March 19-22, 2005, Osage Beach, MO.
81. Hoffmann R., Veskivar M., Varma R., Karim K., Angenent L. T., and Al-Dahhan M. H.\* (2005). Effect of shear on performance and microbial community in anaerobic digesters treating cow manure. Fifth International Chemical Engineering Conference, Sept. 12-15, 2005, Amman, Jordan.
82. Angenent, L. T.\*, Kettleson E. M., Hogan Jr. C. J., Lee M., Biswas P. (2005). Viral capture and inactivation with a soft X-ray enhanced corona system. Regional Centers for Biodefense and Emerging Infectious Diseases Research, second annual meeting, March 13-15, 2005, Western RCE, Galveston, TX.
83. Rauer D., Turner J. R. and Angenent L. T. (2004). Ambient biological particulate matter characterization at the St. Louis Midwest Supersite. 23<sup>rd</sup> Annual Conference, Atlanta, Georgia, October 4-8, 2004, American Association for Aerosol Research (AAAR), Mt. Laurel, NJ.
84. Kettleson E. M., Hogan Jr. C. J., Ramaswami B., Lee M., Biswas P., and Angenent L. T. (2004). Capture and inactivation of viral bioaerosols using an X-ray enhanced electrostatic precipitator. 23<sup>rd</sup> Annual Conference, Atlanta, Georgia, October 4-8, 2004, American Association for Aerosol Research (AAAR), Mt. Laurel, NJ.
85. Briones A\*, Daugherty B. J., Angenent L. T., Rausch K., Tumbleson M. and Raskin, L. (2004) Microbial community diversity, dynamics, and interactions in anaerobic bioreactors treating sulfate-rich waste streams. 10<sup>th</sup> International Symposium on Microbial Ecology (ISME), Cancun, Mexico, August 22-27, 2004, International Society for Microbial Ecology, Geneva, Switzerland.
86. Ley R. E. and Angenent L. T. (2004). Enrichment of hydrogen-utilizing microorganisms from hypersaline microbial mats with a hollow-fiber bioreactor. 104<sup>nd</sup> General Meeting, New Orleans, LA, May 23-27, 2004, American Society for Microbiology, Washington, DC, USA.
87. Angenent L. T., Clarke L., Robinson A. and Hernandez M.\* (2003). Occurrence of primary biological materials in the atmosphere: protein, carbohydrate and endotoxin associations with particulate matter in temperate region urban aerosols. 22<sup>th</sup> Annual AAAR Conference,

- October 20-24, 2003, Anaheim, California, USA, American Association for Aerosol Research, Cincinnati, Ohio, USA.
88. Angenent L. T., Kujundzic E., Zander D. A., Henderson D. E., Miller S. L. and Hernandez, M. T.\* (2002). Bioaerosol and airborne particulate matter mitigation using hybrid HEPA-UV filter units in a high-exposure environment. 21<sup>th</sup> Annual AAAR Conference, October 7-11, 2002, Charlotte, North Carolina, USA, American Association for Aerosol Research, Cincinnati, Ohio, USA.
  89. Angenent L. T. (2002). A senior, group-based design project of an expanding wastewater treatment plant. Proceedings of the ASEE Summer School Poster Session, Effective Teaching Strategies. July 27-August 1, 2002, Boulder, Colorado, American Society for Engineering Education, Washington, DC, USA.
  90. Raskin L.\*, Rausch K. D., Tumbleson M. E., Daugherty B. J., Angenent L. T., Agbisit R. M. and Belyea R. L., Nutrient Recovery from Food Processing Industry Waste Streams. 2002 Corn Utilization and Technology Conference, June 3-5, 2002, Kansas City, MO, Corn Refiners Association and National Corn Growers Association, St. Louis, Missouri, USA.
  91. Agbisit R. M., Daugherty B. J., Angenent L. T., Belyea R. L., Clevenger T. E., Raskin L., Rausch K. D. and Tumbleson M. E. (2002). Recovery of nutrients in the corn wet milling process. 2002 Corn Utilization and Technology Conference, June 3-5, 2002, Kansas City, MO, Corn Refiners Association and National Corn Growers Association, St. Louis, Missouri, USA.
  92. Jindal A., Robert M., Zahn J., Angenent L., Aminov R., Funk T., Mackie R. and Raskin L. (2002). Antimicrobials and antimicrobial resistance in swine waste treatment processes. 102nd General Meeting, Salt Lake City, Utah, May 19 - 23, 2002, American Society for Microbiology, Washington, DC, USA.
  93. Angenent L. T., Kelley S. T., Pace N. R. and Hernandez, M. T.\* (2001). Characterization of bioaerosols in a high exposure environment using direct microscopy, genetic amplification (PCR), and molecular cloning. 20<sup>th</sup> Annual Conference, October 15-19, 2001, Portland, Oregon, USA, American Association for Aerosol Research, Cincinnati, Ohio, USA.
  94. Agbisit R. M., Daugherty B., Belyea R. L., Angenent L., Raskin L. M., Rausch K. D. and Tumbleson M. E. (2001). Recovery of nutrients in the corn wet milling process. 2001 AACC annual meeting, October 14-17, 2001, Charlotte, North Carolina, USA. American Association of Cereal Chemists, St. Paul, Minnesota, USA.
  95. Rausch K. D., Thompson C. I., Belyea R. L., Plata H., Angenent L. T. and Raskin L. (2000). Variation in composition of coproducts and wastewater from a commercial wet milling facility. 2000 Corn Utilization and Technology Conference, June 5-7, 2000, St. Paul, Minnesota, USA, Corn Refiners Association and National Corn Growers Association, St. Louis, Missouri, USA.
  96. Frigon D., Angenent L. T., Zheng D. and Raskin L. (2000). Filamentous bacteria grow in upflow anaerobic sludge blanket reactors at high loading. 100th General Meeting, May 21-25, Los Angeles, California, USA, American Society for Microbiology, Washington, DC, USA.
  97. Oerther D.B.\*, Angenent L. T. and Raskin L. (2000). Biological treatment of food processing waste streams. Environmental Horizons 2000, March 27-28, 2000, The Environmental Council, Urbana, IL, USA.
  98. Mau M.\*, Angenent L. T., George U. and Raskin L. (2000). Monitoring antibiotic resistance during swine waste treatment using oligonucleotide probes targeting the MLS<sub>B</sub> resistance determinant in the 23S rRNA. Microbiology\_2000, March 12-16, München, Germany, VAAM, DGHM, ÖGHMP.
  99. Angenent L. T., Mau M., George U. and Raskin L. (1999). Culture-independent monitoring of changes in translation-antibiotic resistance during swine waste treatment using

- oligonucleotide probes targeting the functional region of 23S rRNA. *MMME99*, August 1-3, Urbana, Illinois, USA, Midwest Molecular Microbial Ecology Meeting.
100. Mau M., Angenent L. T., George U. and Raskin L. (1999). Culture-independent monitoring of changes in translation-antibiotic resistance during swine waste treatment using oligonucleotide probes targeting the functional region of 23S rRNA. 99th General Meeting, May 30-June 3, Chicago, Illinois, USA, American Society for Microbiology, Washington, DC, USA.
101. Zheng D.\*, Angenent L. T., Sung S, and Raskin L. (1998). Microbial community structure in an anaerobic migrating blanket reactor. Eight International Symposium on Microbial Ecology, August 9-14, 1998, Halifax, Nova Scotia, Canada.
102. Zheng D., Angenent L. T., Sung S, and Raskin L.\* (1998). Microbial population dynamics in wastewater treatment systems. *Environmental Horizons 1998*, April 21, 1998, The Environmental Council, Urbana, IL, USA.

\* Presenter for podium presentation

### **Invited Webinar Presentation**

Microbial Fuel Cells, Interactive Web Conference, 3pm-4:30pm, July 29<sup>th</sup>, 2010.

### **Course Taught at University of Tübingen**

| <i>Number</i> | <i>Name</i>                                     | <i>Co-Taught With</i>                     | <i>Semester</i> |
|---------------|---|---|-----------------|
| NA            | Sustainable Environmental Biotechnology Systems | Dr. Claudia Tominski and Dr. Joseph Usack | W/S 2017-2018   |

### **Course Taught at Ghent University**

| <i>Number</i> | <i>Name</i>                 | <i>Co-Taught With</i> | <i>Semester</i> |
|---------------|-----------------------------|-----------------------|-----------------|
| I001873       | Microbial Re-use Technology | 3 others              | Fall 2014       |

### **Courses Taught at Cornell University**

| <i>Number</i> | <i>Name</i>   | <i>Co-Taught With</i> | <i>Semester</i>   |
|---------------|---|-----------------------|---|
| BEE6580       | Biofuels Topics   |                       | Spring 2013   |
| BEE6570       | Mixed Culture Engineered Systems: Bioenergy and Microbial Ecology |                       | Spring 2010<br>Spring 2012  |
| BEE4870       | Sustainable Bioenergy Systems                                     |                       | Fall 2009<br>Fall 2010<br>Fall 2011<br>Fall 2012<br>Fall 2013<br>Spring 2014<br>Fall 2015 |

### **Courses Taught at Washington University**

| <i>Number</i> | <i>Name</i> | <i>Co-Taught With</i> | <i>Semester</i> |
|---------------|-------------|-----------------------|-----------------|
|---------------|-------------|-----------------------|-----------------|

|                         |  |   |  |
|-------------------------|--|---|--|
| ChE 351                 | Engineering Analysis of Chemical Systems     |   | Fall 2005<br>Fall 2006<br>Fall 2007                      |
| ChE 146A                | Modern Technological Challenges              | 4 others<br>3 others<br>3 others          | Fall 2004<br>Fall 2005<br>Fall 2006                      |
|                         | Introduction to EECE                         | Jay Turner                                | Fall 2007  |
| ChE/ENVE/CE<br>408/508  | Environmental Engineering Laboratory         | Brian Wrenn<br>Brian Wrenn<br>Brian Wrenn | Spring 2004<br>Spring 2005<br>Spring 2006<br>Spring 2008 |
| ChE/ENVE<br>450-A/550-A | Engineering and Molecular Biology Techniques |   | Fall 2003<br>Fall 2004                                   |
| ChE/ENVE 523            | Biological Treatment Processes               |   | Spring 2003<br>Spring 2005                               |

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### **Awards with Undergraduate Students**

- Chase Brett, Recipient of the Engineering Learning Initiatives (Engineering, Cornell University) summer 2015 scholarship.
- Julia Casagrande, Annie Ding, Alex HERNSDORF, and Erik Rasmussen: 2<sup>nd</sup> place, 2014 NABEC-ASABE Student Design Competition.
- Kenneth Byers, Sarah Daly, Cari Gandy, Anna Schatz: 2<sup>nd</sup> Place Graduate Category, New York State Pollution Prevention Institute, 2013-2014 “Greenovate NYS” NYSP2I R&D Student Competition, Rochester Institute of Technology, April 22, 2014.
- Brandon Bass, Ravi Garcia, and Zachary Stevens: 2<sup>nd</sup> place, 2013 NABEC-ASABE Student Design Competition.
- Sarah Loftus, Recipient of the 2013 National Science Foundation Graduate Research Fellowship Award.
- Sarah Loftus: Honors research thesis, and two Engineering Learning Initiatives (Engineering, Cornell University) semester-long scholarships. One was for the summer of 2012.
- Jiaqing (Jack) Yi: Honors research thesis, Rawlings Cornell Presidential Research Scholar, two Engineering Learning Initiatives (Engineering, Cornell University) semester-long scholarships, and Proctor and Gamble Technical Award Finalist.
- Robert D’Ambra, Jeremiah Joseph and Anthony Terrizzi: 1<sup>st</sup> place 2011 NABEC-ASABE Student Design Competition.
- James Chiang, Mariel Eisenberg, Ivana Nitzova and Jessica Schmidt: 2<sup>nd</sup> place, 2011 NABEC-ASABE Student Design Competition.
- Shane Rothermel and Scott Tucker: 2<sup>nd</sup> place, 2010 NABEC-ASABE Student Design Competition.

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### **Short Courses and Other Teaching Activities**

- Participated/lectured in workshops at the annual conference of the Water Environment Federation WEFTEC’03, WEFTEC’04, and WEFTEC’05: “FISHing in activated sludge”, Los Angeles, CA, October 12, 2003, New Orleans, LO, October 3, 2004, and Washington, DC, October Oct 29- Nov. 2, 2005.



- Spring 1999: Instructor for graduate course: CE 442 - Processes for Water Quality Control, II (Dept. of Civil and Environmental Engineering at the University of Illinois at Urbana-Champaign).

### **Teaching and Leadership Improvement Activities**

|                       |  |
|-----------------------|--|
| Summer 2011           | Participated in the Center for Sustainable Engineering (CSE) an NSF-sponsored workshop. This was organized by the Syracuse Center of Excellence in Environmental and Energy Systems (SyracuseCoE) and Syracuse University (SU), Syracuse, NY, May 26-27, 2011.     |
| Summer 2010           | Participated in the CALS Faculty Leadership Program. This was organized by the College of Agricultural Life Sciences, Trumansburg, NY, June 21-25, 2010.   |
| Summer 2002           | Participated in the 2002 Summer School for Chemical Engineering Faculty, Boulder CO, July 27-August 1, 2002. This was organized by the American Society for Engineering Education (ASEE), Chemical Engineering Division. Attended workshops on effective teaching. |
| Fall 1998-Spring 1999 | Participated in a faculty development program at the University of Illinois at Urbana-Champaign: The Teaching College, organized by The Academy for Excellence in Engineering Education (AE <sup>3</sup> ). Attended year-long workshops on effective teaching.    |

### **Ph.D. Students Graduated (12)**

| <i>Name</i>          | <i>Work Period</i> | <i>Thesis Title</i>  | <i>Placement</i>   |
|----------------------|--------------------|--|--|
| Juan Guzman          | Aug. 12-Dec. 17    | Towards developing a novel community-selection tool to unravel the interaction of hydrogen-producing syntrophs                               | Capro-X, Inc. a start-up company in Upstate New York, Ithaca.                                |
| Catherine Spirito    | Jan. 11-Aug. 17    | Using high-throughput gene surveys to investigate the stability of anaerobic digestion and fermentation processes                            | Post-doc and lecturer, University of Maryland  |
| Joseph Usack         | June 10-Aug. 16    | An evaluation of the barriers to anaerobic digestion technology implementation for energy production and waste stabilization on dairy farms  | Post-doc, University of Tübingen, Germany  |
| Devin Doud           | Aug. 10-Aug. 14    | Engineering applications using the innate redox environment of <i>Rhodospseudomonas palustris</i>  | Post-doc, JGI, Walnut Creek, CA  |
| Michaela TerAvest    | Aug. 09-Aug. 13    | Biological limitations of <i>Shewanella oneidensis</i> MR-1 in bioelectrochemical systems  | Assistant Professor, Michigan State University, East Lansing, MI                             |
| Elliot Friedman      | Jun. 09-Aug. 13    | Microbial electrochemical systems as tools to study subsurface biogeochemical processes  | Post-doc, University of Pennsylvania, Philadelphia, PA                                       |
| Arvind Venkataraman  | May 08-Nov. 11     | The role of intraspecies and interspecies communication of <i>Pseudomonas aeruginosa</i> PA14 towards phenazine and production and virulence | Post-doc, University of Michigan in Ann Arbor, MI  |
| Matt Agler           | Jun. 06-Aug. 11    | Improving performance and product specificity of the carboxylate platform for production of biochemicals                                     | Assistant Professor, University of Jena, Germany   |
| Jeff Fornero         | Aug. 06-Aug. 09    | Improving the cathode conditions by pressurizing and carbon dioxide addition to enhance the practicality of MFC treatment of wastewater      | Chief Engineering of Electrochaea, LLC a start-up company in Missouri, now of GlucanBio, LLC |
| Sarah Dryden Perkins | Aug. 04-Jan. 09    | 16S rRNA gene surveys to quantify pathogens in environmental bioaerosols   | Post-Doc, Battelle, Indianapolis, IN   |
| Marcelo Garcia       | Jan. 04-Dec. 08    | Improving the stability of anaerobic digesters for animal waste treatment  | Assistant Professor, State University of Sao Paulo, Rio Claro, Brazil                        |
| Zhen (Jason) He      | Aug. 03-Jun. 07    | Microbial fuel cells: their application and microbiology   | Professor at Virginia Tech.  |

### **Ph.D. Students at Present (7)**

| <i>Name</i> | <i>Work Period</i> | <i>Research Topic</i> |
|-------------|--------------------|-----------------------|
|-------------|--------------------|-----------------------|

|   |   |  |
|---|---|--|
| Han (Angelia) Wang<br>Patrick Schweizer<br>Isabella Casini (co-<br>advised with Bastian<br>Molitor) | Oct. 18-Aug. 2022<br>May 18-<br>Sept. 17- | Chain elongation with open cultures: competition for substrate<br>Chemical production with microbiomes<br>Modeling of the physiology of <i>Methanothermobacter thermoautotrophicus</i> |
| Christian Fink (co-<br>advised with Bastian<br>Molitor)   | July 17-                                  | Genetic modifications of <i>Methanothermobacter thermoautotrophicus</i>  |
| Christian-Marco<br>Klask (co-advised<br>with Bastian Molitor)                                       | June 17-                                  | Genetic modifications of <i>Clostridium ljungdahlii</i>  |
| Akanksha Sharma<br>Lauren Harroff   | March 17-<br>Aug. 14-Dec. 18              | Operating optimizations for syngas fermentation<br>Sustainable sanitation for the developing world   |

### M.S. Students Graduated With Thesis (9)

| <i>Name</i>   | <i>Work Period</i> | <i>Thesis Title</i>   | <i>Placement</i>                                      |
|---|--------------------|---|---|
| Mytien Nguyen   | Aug. 14-Aug. 16    | Beyond energy saving: the effect of weatherization on the microbiology of the residential built environment in Upstate New York             | MD/PhD program, Yale University                       |
| Sarah Daly  | Aug. 14-Aug. 16    | Acidification of food waste during storage after grinding with InSinkErator® technology   | PhD student, Purdue University                        |
| Leo Kucek   | Aug. 13-Sept. 15   | Extending chain elongation with reactor microbiomes   | Applied Technologies (ATI), Wisconsin, USA            |
| Ahmet Erkan Uman                                      | Aug. 12-March 15   | A Fenton reaction in the recirculated biosolids line of an anaerobic digestion system   | PhD student, University of Southern Florida           |
| Michael Martin  | Aug. 12-July 14    | Comparing ethanol production of carboxydrotrophic <i>Clostridium</i> strains during syngas fermentation with a two-stage continuous culture | Scientist, LanzaTech, Chicago, IL                     |
| José Miguel Perez                                     | Aug. 09-June 12    | Reduction of carboxylic acids to alcohols using syngas and <i>Clostridium ljungdahlii</i> as biocatalysts                                   | PhD student at University of Madison-Wisconsin, WI    |
| Eric Kettleson  | Aug. 03-Aug. 05    | Capture and inactivation of virus aerosol using electrostatic precipitation   | PhD candidate, Washington University in St. Louis, MO |
| Rebecca Hoffmann (co-advised with Muthanna Al-Dahhan) | May 03-May 05      | The effect of shear on the performance and microbial ecology of anaerobic digesters treating cow manure from dairy farms                    | Horner & Shifrin, Inc. Engineers, St. Louis, MO       |
| Dan Rauer (co-advised with Jay Turner)                | Jan. 03-Febr. 05   | Characterization and monitoring of ambient biological PM <sub>2.5</sub> at the St. Louis-Midwest Supersite                                  | Lab Technician, Bayer Corporation USA, Berkeley, CA   |

### M.S. Students at Present With Thesis (4)

| <i>Name</i>                                       | <i>Work Period</i> | <i>Research Project</i>   |
|---|--------------------|---|
| Stefan Petschak (co-advised with Bastian Molitor) | June 18-           | AOR biochemistry  |
| Daria Evseeva (co-advised with Daniel Huson)      | June 18-           | PacBio sequencing of <i>Methanothermobacter thermoautotrophicus</i> |
| Qu Sun  | Jan. 18-           | Chain elongation  |
| Sarah Schulz (co-advised with Bastian Molitor)    | Nov. 17-           | Genetic modification of <i>Clostridium ljungdahlii</i>              |

### Additional M.S. Students Graduated (Project Report)

| <i>Name</i>                  | <i>Work Period</i> | <i>Report Title</i>   | <i>Placement</i>                                   |
|------------------------------|--------------------|---|--|
| Erik Rasmussen (MEng)        | Sept. 14-May 15    | Bioprocessing with <i>Clostridium ljungdahlii</i>                     | Cornerstone Research, New York, NY                 |
| Siddarth Govindarajan (MEng) | Sept. 13-May 14    | Weatherization bioaerosol study                                       | Advanced Equipment Engineer, GlobalFoundries Fab 8 |
| Divya Vasudevan (MEng)       | Aug. 12-May 13     | Chain elongation in upflow filters with undiluted acetate and ethanol | Engineer I, Genentech Inc.                         |
| Matthew Williams (MEng)      | Aug. 12-May 13     | Modeling ethanol extraction from syngas fermentation vessels          | Consulting analyst, Accenture                      |
| Dylan Webster                | Jan. 13-May 2013   | Modifying <i>Shewanella oneidensis</i> as a bioensing                 | Scientist, E. & J. Gallo                           |

|                             |                 |   |  |
|-----------------------------|-----------------|---|--|
| (MEng)<br>Christian Pichard | Aug. 11-Aug. 12 | microbe with electric output<br>Economic analysis and life-cycle assessment of the carboxylate platform | Winery, CA<br>Consultant, TetraTech,<br>Santiago, Chili              |
| (MEng)<br>Sarah Clement     | Aug. 11-Jul. 12 | Investigating neutral theory in a bacterial community   | Consultant, Accenture  |
| (MEng)<br>Bob Frost (MEng)  | Aug. 10-May 11  | House-hold digester for kitchen waste   | Consultant, Hazen and Sawyer, New York City, NY                      |
| Adam Garnica (MPS)          | Aug. 09-May 10  | Toxicity of line lubricants in UASB bioreactor treatment of brewery waste                               | Law School, Cornell University                                       |
| Ben Bocher (MS)             | May 05-Dec. 06  | Shear-enhanced anaerobic digestion of secondary biosolids from upflow anaerobic bioreactors             | Assistant Professor, University of Wisconsin, Platteville, now at BP |

### Post-Doctoral Researchers/(Senior) Research Associates Supervised

| <i>Name</i>             | <i>Work Period</i> | <i>Project Title</i>  | <i>Placement</i>   |
|-------------------------|--------------------|---|--|
| Roy Posmanik            | Aug. 14-July 2017  | Coupling hydrothermal systems to digestion with Prof. Jeff Tester   | Tenure-track scientist at the Agricultural Research Organization at The Volcani Center, Israel |
| Jiajie (JJ) Xu          | Sept. 14-June 17   | Extracting <i>n</i> -caproic acid from fermentation broth   | Post-doc, KAUST, Saudi Arabia  |
| Bastian Molitor         | Jun. 15-May 17     | Genetic modification of carboxydrotrophic bacteria  | Junior Professor, Environmental Biotechnology Group, University of Tübingen, Germany           |
| Hanno Richter           | Nov. 08-June 16    | Conversions with <i>Clostridium</i> spp.  | Intrexon, California   |
| Rodrigo Labatut         | Oct. 14-Oct. 15    | Biological methane potential test   | Assistant Professor, Pontifical Catholic University of Chile, Santiago, Chile                  |
| Denina Hospodsky        | Jan. 13-May 14     | A pilot study of the changes in airborne microbiota after weatherization of older two-story homes in the U.S. Northeast | Scientist, Adaptive Biotechnologies Corp., Seattle, WA   |
| Erik Bland              | Febr. 13-April 14  | Photobioreactors with monochromatic light   | Industry   |
| Jeffrey Werner          | June 09-Aug. 2011  | Stability in upflow anaerobic bioreactors   | Assistant Professor, SUNY Cortland   |
| Miriam Rosenbaum        | March 07-May 11    | Bioelectrochemical systems  | Assistant Professor, RWTH-Aachen University, Germany   |
| Sarah Dryden Perkins    | Feb. 09-May 09     | Syntrophic acetate oxidation in anaerobic digesters   | Post-Doc, Battelle, Indianapolis, IN   |
| Balathiagarán Ramaswami | April 04-May 05    | Bacteriophages as indicators for human fecal contamination in Table Rock Lake, MO                                       | Post-doc, University of Pittsburgh, PA   |

### Post-Doctoral Researchers at Present

| <i>Name</i>        | <i>Work Period</i> | <i>Research Project</i>   |
|--------------------|--------------------|---|
| Pengfei Xia        | Nov. 18-Oct. 20    | Genetic modifications of <i>Clostridium ljundahlii</i>              |
| Byoung Seung Jeon  | Sept. 18-present   | The biochemistry of chain elongation                                |
| Jean Nepo Nühuga   | Dec. 17-present    | Scale up for syngas fermentation with <i>Clostridium ljundahlii</i> |
| Claudia Tominski   | Jan. 17-present    | Anaerobic microbiology  |
| Joseph Usack       | Aug. 16-present    | Chain elongation  |
| Tianran (Tian) Sun | Oct. 14-present    | Microbial electrochemistry and biochar/minerals in soil             |

### Post-Doctoral Researchers Co-advised at Present

| <i>Name</i>             | <i>Work Period</i> | <i>Co-advisor</i> | <i>Research Project</i> |
|-------------------------|--------------------|-------------------|-------------------------|
| Sofia Esquivel Elizondo | Apr. 18-present    | Dr. Ruth Ley      | Syntrophy               |

### Assistant Professors in Group (Nachwuchsgruppenleiter)

| <i>Name</i>     | <i>Work Period</i> | <i>Research Project</i>   |
|-----------------|--------------------|---|
| Bastian Molitor | July 17-present    | Synthetic biology and genetic modification of anaerobic platform microbes |

### Technicians

| <i>Name</i> | <i>Work Period</i> | <i>Research Project</i> |
|-------------|--------------------|-------------------------|
|-------------|--------------------|-------------------------|

|                 |                  |   |
|-----------------|------------------|---|
| Sarah Daly      | June 14-Aug. 14  | Food waste hydrolysis and storage                   |
| Mytien Nguyen   | June 14-Aug. 14  | Weatherization study                                |
| Lauren Harroff  | Sept. 13-Aug. 14 | Toilet system to kill pathogens                     |
| Divya Vasudevan | June 13-Feb. 14  | Chain elongation                                    |
| Nina Voulis     | Feb. 13-Feb. 14  | Photobioreactors                                    |
| Michael Martin  | Dec. 11-Aug. 12  | Syngas Fermentation                                 |
| Wendy Hoose     | June 10-April 11 | Genetically-modifying photosynthetic microorganisms |
| Alex Lee        | Jan. 10-June 10  | Building cheap potentiostats                        |
| Joe Usack       | Dec. 09-May 10   | Co-digestion of cow manure with lipid-rich wastes   |
| Nick Scalfone   | Nov. 08-Jun. 09  | 16S rRNA gene surveys and FISH                      |

## Visiting Scholars and Professors

| <i>Name</i>                          | <i>Work Period</i> | <i>Research Project</i>  | <i>Placement/Current Position</i>   |
|--------------------------------------|--------------------|--|---|
| Ramiro Blasco Gómez                  | Sept. 18-          | Biocathodes  | PhD student, University of Girona   |
| Byung-Chul Kim                       | Mar. 18-Sept. 18   | Producing caproate from real organic waste   | PhD student, Seoul National University  |
| Jiuxiao Hao                          | Oct. 15-Sept. 16   | Producing <i>n</i> -caproic acid from organic wastes   | PhD student, Tsinghua University, Beijing, China  |
| Ramiro Blasco Gómez                  | Sept. 18-Febr. 19  | Electrosynthesis   | PhD student, University of Girona   |
| Byung-Chul Kim                       | Mar. 18-Aug. 18    | VFA production with microbiomes  | PhD student, Seoul National University  |
| Sylvia Gildemyn                      | Oct. 15-Feb. 16    | Producing <i>n</i> -caproic acid from syngas fermentation effluent                             | PhD student, Ghent University, Belgium  |
| Jiajie (JJ) Xu                       | Sept. 12-Aug. 14   | Extracting and separation of <i>n</i> -caproic acid from fermentation broth                    | PhD student, China Agricultural University, Beijing, China  |
| Yaping Zhang                         | Sept. 12-Mar. 14   | <i>Enterobacter aerogenes</i> and <i>Pseudomonas aeruginosa</i> and bioelectrochemical systems | PhD student, South China University of Technology, China  |
| Leticia Regueiro Albelleira          | July 13-Jan 14     | Reactor microbiome characterization for a co-digestion study                                   | PhD student from the University of Santiago de Compostela, Spain  |
| Sávia Gavazza                        | Sept. 12-Sept. 13  | Azo-dye removal in reduced environments  | Professor, Federal University of Pernambuco, Brazil   |
| Po-Heng (Henry) Lee                  | June 13-Aug 13     | Syngas fermentation  | Assistant Professor, The Hong Kong Polytechnic University, Hong Kong  |
| Victor Robertsson                    | May 13-Aug 13      | Syngas fermentation  | MS student from KTH Royal Institute of Technology, Stockholm, Sweden  |
| Maria Jesus Sanchez-Corral           | Febr. 13-Aug. 13   | Syngas fermentation and proteomics   | IMETE MS student, Ghent University, Belgium   |
| Isabel del Agua Lopez                | Febr. 13-Aug. 13   | Anaerobic digestion of pumpkin waste   | IMETE MS student, Ghent University, Belgium   |
| Kaiyan Qiu                           | Apr. 13-May 13     | Microbial electrolysis cells   | Post-doc  |
| Shijian Ge                           | Sept. 11-March 13  | Medium-chain carboxylate production and extraction   | PhD student, Beijing University of Technology, China, now Assistant Professor at Nanjing University of Science and Technology, China. |
| Christine Solis                      | Summer 12          | Microcosm studies in Barrow, Alaska (through PolarTrec Program)                                | High-school teacher in Los Angeles, CA  |
| Viktor Hällman (visiting MS student) | June 12-Aug. 12    | Scaling up syngas fermentation   | MS student from KTH Royal Institute of Technology, Stockholm, Sweden  |
| Adrianus van Haandel                 | May 12-June 12     | <i>n</i> -Caproate production in Brazil  | Professor at the Federal University of Campina Grande, Brazil   |
| Kyoung-Yeol Kim                      | Dec. 11-Jun. 12    | Microfluidic bioelectrochemical sensor   | PhD student, Gwangju Institute of Science and Technology (GIST), Republic of Korea  |
| Wei Zhang                            | Nov. 10-Nov. 11    | Undefined mixed cultures in bioreactors and soil   | Assistant Prof., North China Electric Power University  |
| Zhongjian Li                         | Sept. 09-Sept. 11  | Mechanisms of electron transfer in biofilms  | PhD student, Zhejiang   |

|   |                    |   |   |
|---|--------------------|---|---|
| James Miller                              | Summer 11          | Cyclic voltammetry at Barrow, Alaska (through PolarTrec Program)                                    | University, China, now Associate Professor of Zhejiang University.        |
| Nebiyu Merdekios (visiting MS student)    | May 10-Aug. 10     | Selective removal of caproate with pertraction  | High-school teacher, Cleveland, Ohio                                      |
| Sebastian Heger                           | June 10-Aug. 10    | EcoTox studies for biofuels production  | MS student, Wageningen University, The Netherlands                        |
| Marianna Villano                          | Jan. 10-June 10    | Making chemical products on the cathode   | MS student, Technical University Aachen, Germany                          |
| Wiratni                                   | Jul. 09-Apr. 10    | Low-tech anaerobic digester for farmers in Indonesia  | PhD student, Sapienza University of Rome, Italy                           |
| Renato Carrhá Leitão                      | Sept. 09-Nov. 09   | Solids digestion  | Associate Professor, Gadjah Mada University, Indonesia                    |
| Arjan Dekker (visiting MS student)        | Jul. 09-Nov. 09    | Selective removal of n-butyrate with pertraction and the effect on butyrate fermentation            | Researcher, Brazilian Agricultural Research Corporation (Embrapa)         |
| Nathan Ball                               | Jun. 09-Aug. 09    | Pure-culture studies in bioelectrochemical systems  | MS student, Wageningen University, The Netherlands                        |
| Brett Barron                              | Summer 07, 08, 09  | MFC labs and kits for high-school students  | MS student, KAUST, Saudi-Arabia   |
| Amanda Scampini                           | April 09-May 09    | Upflow anaerobic sludge blanket treatment of acidified brewery wastewater                           | Chemistry high-school teacher, Hazelwood Central High School District, MO |
| Khalidah Jafaar (Cornell Humphrey Fellow) | Sept. 08-April 09  | Anaerobic digestion of date-palm waste  | MS student, MIT, MA   |
| Zeynep Aydinkaya (visiting MS student)    | Jan. 08-Jan. 09    | Anaerobic digestion of domestic wastewater in UASB and AMBR systems                                 | M.Eng. student, Cornell   |
| Jan Arends (visiting MS student)          | Oct. 07-April 2008 | Mechanisms of exocellular electron transfer with knock-out strains of <i>Pseudomonas aeruginosa</i> | MS student, Bogaziçi University, Turkey                                   |
| Erin Roades                               | Summer 07          | Research Experience for Teachers project  | PhD student, Verstraete Lab, Gent University, Belgium                     |
| Young Whan Kim                            | Sept. 02-Sept. 04  | Effect of sonification on sludge characteristics and methanogenic activity                          | Chemistry high-school teacher, Hazelwood Central High School District, MO |
|   |                    |   | Governmental Position, Busan, South-Korea                                 |

### Rotation PhD Student Research Instruction

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Supervised graduate students who rotated in my lab for a semester: Vienvilay Phandanouvong Lozano (Fall 2012-Spring 2013, Microbiology); Alex Esche (Fall 2010, BEE); Devin Doud (Spring 2010, Microbiology); Armanda Roco (Spring 2010, Microbiology); Hnin Aung (Fall 2008, BEE); Larry Page (Spring 2008, DBBS); Joost Groot (Fall 2007, EECE); Abhas Singh (Spring 2006, EECE).

### HIWI Students

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Supervised BS and MS students during regular academic semesters: Nicole Smith (May. 2018-present; MS Applied and Environmental Geoscience [AEG]); Panunporn (Elli) Tutiyasarn (Febr. 2018-present; MS AEG); Monika Temouska (Febr. 2018-present; MS AEG); and Elena Schiller (May 2017-present; BS Biochemistry).

### Undergraduate Student Research Instruction

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Supervised undergraduate students during regular academic semesters: Michael Buchner (Fall 2018; GEO); Caroline Schläiß (Summer 2018; GEO); Namita Joshua (Fall 2015-Spring 2016; BEE); Alexander Marzilli (Fall 2015-Spring 2016; CBE); Jaden Williams (Fall 2015-Spring 2016; CBE); Stephen Ritman (Fall 2015-Spring 2016; BEE); Chase Brett (Fall 2014-Fall 2015); Jesse Garcia (Fall 2014-Spring 2014); Andrew Kim (Fall 2014-Spring 2017, EnvE); Arun Chakravorty (Spring 2014-Spring 2016, BEE); Anna Bohnenkamp (Spring 2014, BEE); Mytien Nguyen (Fall 2013-Spring 2014); Ethan Yen (Fall 2013-Spring 2014, BEE); Eric Holmes (Fall 2013-Fall 2015, BEE); David Streitman (Fall 2013-Spring 2014, BEE); Erik Rasmussen (Spring 2013-Spring 2014, BEE); Sara Gushgari (Fall 2012-Spring 2013, CEE); David Salbert (Fall 2012-Spring 2013, BEE); Sarah Daly (Fall 2012-Spring 2014, BEE); Dylan Webster (Spring 2012-Fall 2012, BEE); John (Jay) Schwalbe (Spring 2012, CEE); Walker Grimshaw (Spring 2012 and Spring 2013, CS);

Sarah Loftus (Fall 2011-Spring 2013, BEE); Dennis Zhou (Spring 2011, BEE); Brit Gergen (Spring 2011-May 2013, BEE); Yong Uk Kim (Spring 2011, BEE); Hyung Mo (Peter) Kang (Spring 2011-Fall 2011, BEE); Jiaqing (Jack) Yi (Spring 2009-Spring 2012, BEE); Roxanne Li (Spring 2009-Fall 2010, BEE); Kevin Wu (Spring 2009-Fall 2009, BEE); Vipul Borkar (Fall 2007-Spring 2009, EECE); Adam Webb (Fall 2007, EECE); James Wexler (Fall 2004-Spring 2007, EECE); David Hall (Spring 2005-Spring 2007, EECE); Ryan Mackin (Fall 2004-Spring 2006, EECE); Theresa Cummings (Spring 2006-Fall 2006, EECE); Liz Campbell (Fall 2004-Fall 2005, EECE); Kristian Kaufmann (Fall 2002-Spring 2003, EECE).

Supervised high-school students and undergraduate students during 10-weeks as part of a NSF research experience for undergraduates (REU) program or other summer-intern programs, such as Cornell's ELI: Chase Brett (Summer 2015, BEE), Andrew Kim (Summer 2015, EnvE), Eric Holmes (Summer 2015, BEE), Dylan Kahlstorf (Summer 2015, SUNY Cortland), Eunice Chen (Summer 2015, high-school), Andrew Jin (Summer 2014, high-school), Jenelle Fortunato (Summer 2013, Limestone College); David Streitman (Summer 2013, ChemE); Dylan Webster (Summer 2012, iGEM team leader); Sarah Loftus (Summer 2012, BEE); Jiaqing (Jack) Yi (Summer 2010, BEE); Isaac Markus (Summer 2009, NNIN); Alex Lee (Summer 2009, BEE); Kevin Wu (Summer 2009, BEE); Jiaqing (Jack) Yi (Summer 2009, BEE); Vipul Borkar (Summer 2009, EECE); Adam Webb (Summer 2007, EECE); Robert (Bobby) Levine (Summer 2007, EECE); Teri McClerklin (Summer 2006, EECE); James Wexler (Summer 2006, EECE); Rufe Lu (Summer 2005, EECE); David Hall (Summer 2005, EECE); Seth Forster (Summer 2004, EECE); Gabriel (Gabe) Trejo (Summer 2004, EECE), Richard (Memie) Ezike (Summer 2003, EECE); Scott Crothers (Summer 2003, EECE); Kristian Kaufmann (Summer 2003, EECE).

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### **M.S. Thesis Reader – University of Tübingen**

1. Julia Staiger – Final thesis in 2017, Prüfer

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### **Ph.D. Committee Work – University of Tübingen**

1. Claudia Tominski – Final exam in 2016, Prüfer

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### **Ph.D. Committee Work – Cornell University**

1. Lauren Harroff (BEE) – A exam in 2017, Chair
2. Alexandra Westbrook (CBE) – A exam in 2016, Member
2. Juan Guzman (BEE) – A exam in 2014, Chair
3. Catherine Spirito (BEE) – completed B exam in 2017, Chair
4. Joseph Usack (BEE) – completed B exam in May 2016, Chair
5. Devin Doud (Microbiology) – completed B exam in August 2014, Chair
6. Michaela TerAvest (BEE) – completed B exam in August 2013, Chair
7. Elliot Friedman (BEE) – completed B exam in August 2013, Chair
8. Arvind Venkataraman (BEE) – completed B exam in November 2011, Chair
9. Rodrigo Labatut (BEE) – completed B exam in August 2011, Member
10. Matt Agler (BEE) – completed B exam in August 2011, Chair

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### **Ph.D. Committee Work – Washington University**

1. Jeff Fornero (EECE) – completed in August 2009, Chair
2. Sarah Dryden Perkins (EECE) – completed in January 2009, Chair
3. Marcelo Garcia (EECE) – completed in December 2008, Chair
4. Hui Zheng (EECE) – completed in December 2008, Member
5. Nicole Moore (Kohrt) (BME) – completed April 2008, Member
6. Rajneesh Varma (EECE) – completed in April 2008, Member
7. Shannon K. Alford (BME) – completed in April 2008, Member
8. Stephanie Willert (BME) – completed in March 2008, Member
9. Buck Samual (DBBS) – completed in June 2007, Member
10. Elizabeth Hansen (DBBS) – qualifying exam in June 2007, Member
11. Zhen He (EECE) - completed in June 2007, Chair

12. Bia Henriquez (EECE) – qualifying exam in April 2007, Member
13. Liyun Xie (EECE) – completed in January 2007, Member
14. Karyn Lynne Rogers (Earth and Planetary Sciences) – completed in August 2006, Member
15. Scott Crick (BME) – qualifying exam June 2006, Member
16. Mehul Veskivar (EECE) – completed in May 2006, Member
17. Benjamin Steinhaus (ME) – completed in April 2006, Member
18. Huping Luo (EECE) – completed in April 2005, Member
19. Zhengkai Li (EECE) – completed in April 2005, Member
20. Jin-Ku Kim (BME) – completed in May 2005, Member
21. D’Arcy Renee Meyer-Dombard (Earth and Planetary Sciences) – completed in October 2004, Member

### Ph.D. Committee Work – External

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1. Dietmar Strübing (Technical University München) – 2017, Special Committee Member
2. Robert Hoeszle (University of Queensland) – 2015, Ad-hoc Member
3. Sylvia Gildemyn (Ghent University) – 2016, Ad-hoc Member
4. Christy Grobber (University of Queensland) – 2015, Ad-hoc Member
5. Inka Vanwonterghem (University of Queensland) – 2015, Ad-hoc Member
6. Jelmer Tamis (Delft University) – May 2015, Ad-hoc Member
7. Alexandra Deeke (Wageningen University) – completed in October 2014, Ad-hoc Member
8. Taina Tervahauta (Wageningen University) – completed in October 2014, Ad-hoc Member
9. Jo De Vrieze (Ghent University) – completed in October 2014, Ad-hoc Member
10. Tim Grootsholten (Wageningen University) – completed in December 2013, Ad-hoc Member
11. Kyoung-Yeol Kim (Gwangju Institute of Science and Technology (GIST), South-Korea) – completed in November 2013, Member in Proposal Exam and Ad-hoc Member
12. Ka Yu Cheng (Murdoch University, Australia) – completed in April 2010, Ad-hoc Member
13. Falk Harnisch (University of Greifswald, Germany) – completed in January 2009, Ad-hoc Member
14. Caitlyn Shea (Notre Dame University) – Member in Proposal Exam

### German Habilitation Committee Work

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1. Dr. Uwe Schröder (University of Greifswald, Germany) – completed in July 2007, Ad-hoc Member

### Proposals and Projects Funded in Group

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| <i>PI and co-PIs</i>                           | <i>Title</i>   | <i>Granting Agency</i>            | <i>Start &amp; End Date</i> | <i>Group Funding</i> |
|--|--|-----------------------------------|-----------------------------|----------------------|
| Xia  | Phenotyping and metabolic engineering of <i>Clostridium ljungdahlii</i>  | Humboldt Foundation               | Nov. 18-Oct. 20             | €82,800              |
| Molitor  | Systems biology for <i>Methanothermobacter thermautotrophicus</i>  | University of Tübingen            | Sept. 18-                   | €35,000              |
| Angenent                                       | Alexander von Humboldt Professorship   | Alexander von Humboldt Foundation | Apr 17-March 2022           | €5.000.000           |
| Angenent                                       | W3-Professur für Umweltbiotechnologie  | State of Baden-Württemberg        | NA                          | €1.100.000           |
| Angenent                                       | Converting NYS Greek yogurt waste into a valuable chemical   | Hatch-Cornell                     | Nov 15-Jun. 17              | \$50,000             |
| Moraru, Angenent, Sacks, Padilla-Zakour, Rizvi | A comprehensive strategy for the value added utilization of acid whey streams  | NYSDEC                            | Jan 16-Jun 17               | \$75,000             |
| Worgall, Angenent                              | Gift   | Donor via Weil Cornell, NYC       | Sept 15-Aug 16              | \$54,699             |
| Sharma, Worgall, Angenent                      | Virus-induced changes in airway microbiome in asthma   | NIH-CTSC Pilot Award              | Jun 15-May 16               | \$0                  |
| Angenent                                       | Gift   | Iogen, Inc.                       | Apr 15                      | \$70,000             |
| Tester, Angenent, Moore, Overton               | Integrating anaerobic and hydrothermal treatment of dairy and food biowastes: a sustainable systems approach for biofuel and animal feed | ACSF-Cornell                      | July 14-Jun 16              | \$3,000              |

|   |   |   |                      |                         |
|---|---|---|----------------------|-------------------------|
|   | production and nutrient recovery  |   |                      |                         |
| Angenent                                | Gift  | InSinkErator, Emerson                                   | May 14               | \$115,000               |
| Angenent, Rayano                        | Start-up company formation around caproic acid platform   | NEXUS, NYSERDA  | Jan. 14-July 14      | \$4,000                 |
| Angenent, Werner                        | SUSCHEM: Converting urban wastes into longer-chain chemicals  | NSF   | Sep. 13-Aug. 16      | \$277,105               |
| Angenent, Steenhuis, Makki, Bowman, Lee | Sanitation with biological pathogen control for developing countries  | ACSF-Cornell  | July 13-June 16      | \$44,420                |
| Angenent and Worgall                    | Effect of polymicrobial interactions on the virulence of <i>Pseudomonas aeruginosa</i> in a cystic fibrosis mouse model | Cornell University                                      | May 13-April 14      | \$23,700                |
| Erickson and Angenent                   | High density photobiorefineries with optimized light/CO <sub>2</sub> delivery and product extraction                    | DOE-ARPA-E  | Feb. 13-Jan. 14      | \$382,999               |
| Angenent                                | Testing an acute microbial electrochemical biosensor  | EcoLab  | Aug. 12-Feb. 13      | \$3,080                 |
| Angenent                                | Adapting bioenergy production from dairy waste to compensate for the feed additive monensin                             | Hatch-Cornell   | Nov. 12-Oct. 15      | \$75,000                |
| Angenent                                | Increasing the conversion efficiency of biomass into <i>n</i> -caproate with reactor microbiomes                        | Army Research Office, Department of the Army            | July 12-Sept 16      | \$345,238               |
| Angenent and Logan                      | North American International Society for Microbial Electrochemical Technologies Meeting                                 | Army Research Office, Department of the Army            | Sept. 12-Sept. 15    | \$30,525                |
| Angenent, Gebremedhin, Gooch            | Capturing waste heat from biogas-powered generators for conductive cooling on NYS dairy farms                           | NYSERDA   | Aug. 12-Aug. 15      | \$300,000               |
| Angenent                                | A pilot study of the changes in airborne microbiota after weatherization of older two-story homes in the U.S. Northeast | Sloan Foundation  | Sept. 12-Aug. 14     | \$200,000               |
| Angenent                                | NA-ISMET meeting at Cornell University (Ithaca, NY) October 8-10, 2012  | Office of Naval Research                                | Jan. 12-Dec. 12      | \$9,173.00              |
| Angenent, Gooch                         | The effect of Rumensin (Monensin) on the stability of manure-based anaerobic digestion                                  | Elanco/Eli Lilly  | Dec. 10-Dec 12       | \$115,000               |
| Erickson, Angenent, Sinton              | Thousandfold improvement in solar photobioreactors using advanced photonics   | ACSF-Cornell  | July 10-June 12      | \$50,000 (direct costs) |
| Angenent                                | Producing butanol from syngas with hollow-fiber reactors  | Northeast Sun Grant Initiative (NESGI)-DOT              | July 10-Oct 12       | \$150,000               |
| Lehmann, Angenent, Fisher, Gouldin, Lee | Kenya Pyrolysis Project   | Donor (Yossie Hollander) to Cornell University and ACSF | March 2010-Aug. 2014 | \$648,053               |
| Angenent, Jander                        | Engineering phototrophic bacteria to convert <i>n</i> -butyrate into <i>n</i> -butanol with sunlight                    | ACSF-Cornell  | Feb. 10-Feb. 11      | \$50,000                |
| Gooch, Angenent                         | Anaerobic digestion training  | NYSERDA   | Sept. 09-Aug. 12     | \$78,710 (direct costs) |
| Angenent                                | Codigestion of carbon-rich wastes to boost energy production during anaerobic digestion of dairy waste                  | Hatch-Cornell   | Oct. 09-Sept. 12     | \$90,000 (direct costs) |
| Angenent                                | Laboratory scale anaerobic digestion  | GE Water and Process Technologies                       | March 09-May 10      | \$150,001               |
| Lipson, Raab, Angenent                  | Reduction of iron and humic   | NSF   | Aug. 08-Dec 12       | \$239,139               |



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|--|--|--|------------------|-----------|
| Angenent   | substances as a dominant respiratory process in arctic peat soils<br>Characterization of microbial communities in anaerobic granules                             | BP Amoco Chemical Company  | May 08-Dec. 08   | \$53,566  |
| Pakrasi, Angenent, Aurora, Axelbaum, Beachy, Biswas, Blankenship, Gordon, Ho, Kerley, Minter, Quatrano, Schmidt, Smith, Stacey, Thiel, Wang, Xu, Yu, Zhang | Discovery and utilization of enzymes for renewable biofuels production   | Missouri Life Science Research Board   | Dec. 07-July 08  | \$58,796  |
| Angenent, Onay, Yenigün, Nuengjamnong, Rachdawong  | Anaerobic treatment of domestic wastewater from rural Communities with an anaerobic migrating blanket reactor  | McDonnell Academy Global Energy and Environment Partnership, Washington University   | Nov. 07-Dec. 08  | \$35,500  |
| Angenent, Dien, Cotta, Qureshi   | Mixed community bioreactors to convert (ligno)cellulosic feedstocks into the liquid biofuel butanol  | USDA-CREES-NRI   | Sept. 07-Aug. 12 | \$365,000 |
| Angenent   | CAREER: Microbial fuel cell technology for large-scale wastewater treatment  | NSF  | July 07-June 12  | \$408,250 |
| Angenent   | Overcoming metabolic constraints of biological hydrogen production from biomass sugars by electrochemically-assisted hydrogen production in Microbial Fuel Cells | USDA - Agricultural Research Service – Fermentation Biotechnology Research – National Center for Agricultural Utilization Research | July 06-June 10  | \$173,889 |
| Angenent   | SEAD treatability of secondary biosolids from the upflow anaerobic bioreactors of Anheuser-Busch   | Anheuser-Busch, Inc., St. Louis, MO  | May 06-July 08   | \$75,952  |
| Angenent   | Effect of variable loading rates on the anaerobic treatment of corn milling wastewater   | Illinois Department of Commerce and Economic Opportunity/National Corn-to-Ethanol Research Center                                  | Jan. 06-June 07  | \$58,986  |
| Angenent, Mayfield, Fraser   | Effectiveness of membrane integrated shower outlets for increasing patient safety  | Barnes-Jewish Hospital Foundation, St. Louis, MO   | May 06-Oct. 07   | \$34,889  |
| Angenent   | Development of the multi-phase UMFC: simultaneous bioelectricity generation and wastewater treatment   | Bear Cub - Washington University   | Mar. 05-Febr. 06 | \$40,000  |
| Angenent, Shen, Floss  | Improving stability in anaerobic digestion for animal waste treatment by understanding microbial ecology   | USDA-CSREES-NRI  | Aug. 04-July 08  | \$312,205 |
| Giammar, Angenent  | Evaluation of chemical and biological tracers for phosphorus source apportionment in Table Rock Lake, on the Missouri-Arkansas Border                            | EPA-NDWRCDP  | Nov. 03-June 05  | \$125,000 |
| Biswas, Angenent   | Use of a novel corona-soft X-ray system for inactivation of bioagents  | NIH-MRCE   | Aug. 03-Febr. 05 | \$70,000  |

### **Entrepreneurial activities**

March 2017-present

Chair of the scientific advisory board, Electrochaea GmbH, München, Germany.

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|                     |  |
|---------------------|--|
| March. 2017-present | Founder and Scientific Advisor for Capro-X, Corp. Inc., which is a start-up company. This startup is developing a technology to convert carbon wastes into medium-chain carboxylic acids.  |
| Jan. 2014-May 2014  | Team member to initiate a new start-up company to produce <i>n</i> -caproic acid <i>via</i> NEXUS-NY, which is a NYSERDA-sponsored initiative that aims to accelerate the commercialization of clean energy innovations across New York State.   |
| Aug. 2011-present   | Member of the Board of Directors for Electrochaea, LLC, which is a start-up company in Missouri that develops systems to convert renewable electricity and carbon dioxide into renewable natural gas as an energy storage technology. The activities in Denmark and Germany from this LLC are now continued by Electrochaea, GmbH in München, Germany. |
| Dec. 2010-Dec. 2014 | Nidus Partners, Technical Advisory Board, St. Louis, MO.   |
| July 2010-Aug. 2011 | Co-founder and Scientific Advisor for 6 Convert, LLC, which was a startup company in St. Louis, Missouri that developed a technology around methanogens at the cathode of electrochemical systems. This company merged with Electrochaea, LLC in August 2011.  |

### **Industrial Activities and Consulting**

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|-----------------------|---|
| Oct. 2000-Nov. 2000   | Environmental Consultant, Ecofuels Corp., Eagan, Minnesota, USA. Activities: Designing a high yield anaerobic digester (HYAD™) to convert swine waste into methane. A pre-proposal including the plans for a digester and a nutrient removal system was prepared. In addition, we proposed to convert the produced methane into an ethanol blend (registered as ethanol plus by the EPA) through the use of a molybdenum-sulfide catalyst.  |
| July 1999-August 1999 | Environmental Consultant, Aero-Mod, Inc. (Waterlink Aero-Mod), Manhattan, KS, USA. Activities: design of a full-scale AMBR for the treatment of industrial wastewater.  |
| June 1998-March 2000  | Environmental Consultant, Double L Group, LTD., Deyersville, IA, USA. Activities: development of a "future farm", where nutrients, energy, and water produced from animal waste digestion are utilized in hydroponic greenhouses on the farm, reaping economical benefits.  |
| July 1995-August 1997 | Environmental Consultant, Anaerobic Biosystems Corporation and Iowa State University, Ames, IA, USA. Activities: -- Treatment feasibility studies on slaughterhouse wastewater and a combined wastewater from a paper recycling company and an enzyme-producing biotech company. These studies led to full-scale anaerobic treatment: (1) Excel Corp., Ottumwa, IA, USA. System: ASBR; Design flow: 2.3 mgd; and (2) City of Cedar Rapids, Cedar Rapids, IA, USA. System: UASB reactor; Design: 500,000 PE; -- Designed an effluent-baffle system (EBS) for a full-scale ASBR for the pre-treatment of hog slaughterhouse wastewater (The Excel Corp. plant in Ottumwa, Iowa, USA). |

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## Membership in Professional Organizations

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1. International Water Association
2. International Society for Microbial Electrochemistry and Technology
3. Society for Applied Microbiology
4. American Society for Microbiology

## Professional Service

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1. Scientific committee and round-table discussion member for the 4th European Meeting of the International Society for Microbial Electrochemistry and Technology (EU-ISMET), Newcastle upon Tyne, United Kingdom, September 12-14, 2018.
2. Scientific committee and convener for the ISMET 6: Lisbon, Portugal, October 3-6, 2017.
3. Scientific committee for the 7th International Conference on Biotechniques for Air Pollution Control and Bioenergy (Biotechniques-2017), 19 – 21 July 2017. La Coruña. Spain.
4. Scientific committee and convener for the 2<sup>nd</sup> IWA International Resource Recovery Conference, July 7-9, 2017, NYC, USA.
5. Scientific committee for the 5<sup>th</sup> IWA Benelux Young Water Professionals Regional Conference, July 5-7, 2017, Ghent, Belgium.
6. Scientific committee for the 3<sup>rd</sup> International Conference on Biogas Microbiology (ICBM-3), Wageningen, Netherlands, May 1-3, 2017.
7. Scientific committee for the 15<sup>th</sup> World Conference on Anaerobic Digestion (AD15), 2017, Beijing, China.
8. Scientific committee for the fourth North American International Society for Microbial Electrochemistry and Technology Meeting (NA-ISMET meeting), Stanford University, October 5-7, 2016.
9. Scientific committee and convener for the third European Meeting of the International Society for Microbial Electrochemistry and Technology (EU-ISMET meeting), Rome (Italy), September 26-28, 2016.
10. Scientific committee for RR2015, which is the 1<sup>st</sup> IWA Resource Recovery conference, August 30-September 2, 2015, Ghent University, Ghent, Belgium.
11. Scientific committee for the 14<sup>th</sup> World Conference on Anaerobic Digestion (AD14), 2015, Vina del Mar, Chile.
12. Scientific committee for the Environmental Technology for Impact (ETEI) conference, April 29-30, 2014, Wageningen, The Netherlands.
13. Scientific committee for the 2nd International Conference on Biogas Microbiology (ICBM), Uppsala, Sweden, June 10-12, 2014.
14. Scientific committee for the third North American International Society for Microbial Electrochemistry and Technology Meeting (NA-ISMET meeting), Penn State University, May 13-15, 2014.
15. Co-organizer, summer school and symposium on resource recovery from wastewater, University of Ghent and IWA resource recovery cluster, Sept. 8-12, 2014, Ghent, Belgium.
16. Session Co-organizer, Leading Edge Technologies (LET) conference, International Water Association (IWA), June 2014, Abu Dhabi.
17. International Review Panel and Session Chair, 4<sup>th</sup> International Microbial Fuel Cell Conference (MFC4), September 1-4, 2013, Cairns, Australia.
18. Scientific Committee, 13th World Congress on Anaerobic Digestion: Recovering (bio) Resources for the World, June 25-28, 2013, Santiago de Compostela, Spain.
19. Conference chair and organization leader for the North American International Society for Microbial Electrochemistry and Technology Meeting (NA-ISMET meeting), which attracted 98 attendees, October 8-10, 2012, Cornell University, Ithaca, NY.

20. Member of the Program Committee for the Volatile Fatty Acid Platform”, which is a 5-year, €3M program sponsored by the Dutch funding agency for academic research in the field of applied sciences (STW), the Dutch National Science Foundation (NWO), and Paques B.V..
21. Participated in: Office of Naval Research – Synthetic Biology Planning Workshop, June 12-13, 2012, Boston, MA.
22. Participated in: NSF CBET grantees conference, June 6-8, 2012, Baltimore, MD.
23. Participated in: ARPA-E Novel Bioreactors and Photosynthetic Electrofuels-based Systems Workshop, March 27, 2012, Washington, DC.
24. Founding member, secretary (Sept. 2011-2013), President Elect (Sept. 2013-Sept. 2015), and President (Oct. 2015-Sept. 2017) of the International Society for Microbial Electrochemistry and Technology (ISMET); an international nonprofit organization to link researchers who work with bioelectrochemical systems (BESs) that include microbes. Founded on September 15, 2011 at Penn State University.
25. Participated in: Bioelectrochemical Systems Workshop: Standardized Analyses, Design Benchmarks, and Reporting, September 15, 2011, Penn State University, State College, PA.
26. Scientific committee for the 10<sup>th</sup> Latin American Workshop and Symposium on Anaerobic Digestion, October 23-27, 2011, Ouro Preto, Minas Gerais, Brazil.
27. Scientific committee for the 3rd International Microbial Fuel Cell Conference, June 6-8, 2011, Leeuwarden, The Netherlands.
28. Session chair for the 12<sup>th</sup> World Conference on Anaerobic Digestion, October 31-November 4, 2010, Guadalajara, Mexico.
29. Conference co-chair and session chair for the North American BioElectric Systems Meeting (NABESM), October 12-13, 2010, Amherst, MA.
30. Participated in Microbial Fuel Cell Workshop, June 15, 2010, Medical University of South Carolina, Charleston, SC.
31. Participant in National Synthesis Workshop Pathogens (Bacteria, Viruses, and Protozoa) in Rural and Agricultural Water and Watersheds, May 16-20, 2010, Cornell University, Ithaca, NY.
32. Organizing committee and chair of session for the 2<sup>nd</sup> International Microbial Fuel Cell Conference on Waste to Energy, Gwangju Institute of Science and Technology (GIST), The Republic of Korea, June 10-12, 2009.
33. Organizing committee and chair of final session for the Microbial Fuel Cells First International Symposium, Penn State University, May 27-29, 2008.
34. AFOSR MURI Mid-term Biofuel Cell review board, October 2, 2008.
35. Participated in the environmental career information session for ECO-ACT workshop at the Missouri Botanical Gardens, St. Louis, MO, March 23, 2004.
36. Chaired a session at the annual meeting for the American Institute for Chemical Engineers (AIChE): “Advances in Environmental Biotechnology II: Green Processing”, San Francisco, CA, November 19, 2003.

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### **Editor Activities of Journals and Books**

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- Guest editor for the special issue on Frontiers in Microbial Electrochemical Technologies for the “Fuel Cell Journal”, January 2017.
- Member of the editorial board of “Microbial Biotechnology”, Feb 2011-present.
- Co-editor for the book: *Bioelectrochemical Systems: from extracellular electron transfer to biotechnological application*. Eds.: Rabaey K., Angenent L. T., Schröder U. and Keller J. International Water Association, London, UK, December 2009.
- Special editor for the Energy Biotechnology special issue in “Current Opinion in Biotechnology” (Elsevier London), June 2007.

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**Referee Activities of Journals**

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1. *Angewandte Chemie*
2. *Annals of Microbiology*
3. *Applied and Environmental Microbiology*
4. *Applied Microbiology and Biotechnology*
5. *Atmospheric Environment*
6. *Bioresource Technology*
7. *Biosensors and Bioelectronics*
8. *Biotechnology and Bioengineering*
9. *Chemical Communications*
10. *Chemical Engineering and Processing*
11. *Chemosphere*
12. *Current Opinion in Biotechnology*
13. *Electrochemistry Communications*
14. *Electrochimica Acta*
15. *Energy and Environmental Science*
16. *Environmental Engineering Science*
17. *Environmental Microbiology*
18. *Environmental Science and Technology*
19. *ISME Journal*
20. *FEMS Microbiology Ecology*
21. *FEMS Microbiology Letters*
22. *Journal of Applied Microbiology*
23. *Journal of Environmental Engineering and Science*
24. *Journal of Environmental Engineering*
25. *Journal of Environmental Management*
26. *Journal of Hazardous Materials*
27. *Journal of Industrial Microbiology*
28. *Microbial Biotechnology*
29. *Renewable Agriculture and Food Systems*
30. *Trends in Biotechnology*
31. *Water Environment Research*
32. *Water Research*
33. *Water Science and Technology*
34. *World Journal of Microbiology and Biotechnology*
35. *Reviews in Environmental Science and Bio/technology*
36. *PLoS One*
37. *RSC Advances*
38. *Environmental Science and Technology Letters*
39. *Biotechnology for Biofuels*

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**Referee Activities of Research Proposals**

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ARO; Belgium FWO; Dutch STW; AAAS; Danish Council; European Research Council; NIH-SBIR; NSF-SBIR-BioEnergy; Stanford GCEP; Wellcome Trust; NSF Energy for Sustainability; USDA NRI SBIR; USDA NRI: Biobased Products and Bioenergy Production Research; MURI; DOE; NE SUN Grant; AVAC, Canada; Georgian NSF, Georgia; NSF/USDA Microbial Observatories and Microbial Interactions and Processes program; NSF Energy for Sustainability CAREER; FIRST Israel Science Foundation, Israel; FONDECYT National Research Funding Competition, Chile; Engineering and Physical Sciences Research Council, UK; ACS The Petroleum Research Fund; NSF BES: Environmental Engineering and Technologies.

### **Service to University of Tübingen**

- Co-PI Excellence proposal to DFG.
- Committee member, Sustainability Committee, University of Tübingen.
- Member, Korea World Tour 2017, Rektorat, Sept. 2017, visited KAIST, SNU, and KU.

### **Service to Cornell University**

- Tenure recommendation committee, CALS, February-March, 2014
- Faculty Advisory Board (FAB) of the Atkinson Center for a Sustainable Future (ACSF).
- Member of President's Sustainable Campus Committee (PSCC's) Energy Team – Energy.
- Invited panelist and presenter for Liberty Hyde Bailey Lecture: “Renewable Energy Research and Development at Cornell University” as part of CALS Reunion Weekend, June 11, 2010
- Invited panelist and presenter for “Renewable Energy Research and Development at Cornell” presentation for 59<sup>th</sup> Trustee-Council Annual Meeting, October 23, 2009
- Invited renewable energy panel member for CALS: Making a World of Difference, April 18, 2009
- Invited presentation: “Undefined mixed culture conversion of organic waste into energy”, Cornell Engineering Research Conference (CERC), April 3, 2009
- Member of CURBI advising team

### **Service to Department of Biological and Environmental Engineering**

- Member of mentoring committee for Dr. Ludmilla Aristilde
- Member of the M.Eng. planning committee
- Member of the search committee to replace departmental business manager
- Member of mentoring committee for Dr. Lindsey Anderson
- Member of BEE Department Review: Self-Study Team
- Member of retirement symposium organization for Prof. Norm Scott
- Member of Riley-Robb Hall facilities committee
- Chair of search committee for faculty hire
- Member of graduate coordinate committee
- Director of the Agricultural Waste Management Lab, Game-farm road complex (2008-2014)
- Member of committee to study the Master of Business Administration (MBA) and Master of Engineering (MEng) program on Energy, Sustainability and the Environment (MESE)
- Undergraduate advisor for ~ 15 students continuously

### **Service to Washington University**

- Student advisor for the local chapter of the American Institute of Chemical Engineers (AIChE)
- Member of the Institutional Biological & Chemical Safety Committee (IBC)
- Invited presentation: “Bioaerosols”: Annual MRCE Biosafety Course for Midwest Regional Center of Excellence in Biodefense and Emerging Infectious Diseases Research (MRCE) Program about: “Bioaerosols” for three years

### **Service to Department of Energy, Environmental & Chemical Engineering**

- Prepared a new concentration area (Bioprocessing) for undergraduates in the Department of Chemical Engineering as part of the curriculum changes

- Participated in the Scholarship dinner during the merit fellowship weekend (2004, 2005, and 2006)
- Undergraduate advisor for a total of ~ 30 Chemical Engineering students over four years
- Organized the qualifying exams for PhD students (2003-2008)
- Environmental engineering faculty search (Spring 2006)
- Bioenergy faculty search (Fall 2006 and Spring 2007)
- Moderator for “Water Resources and Sustainable Systems” breakout group at the International Symposium on Energy and the Environment, May 4-7, 2007. St. Louis, MO
- Participant in the core group of I-CARES focusing on bioenergy