Laura R. Jarboe

Professional preparation

University of Kentucky	Chemical Engineering	B.S. 2000
University of California, Los Angeles	Chemical and Biomolecular Engineering	Ph.D. 2006
University of Florida	Microbiology and Cell Science	2006-2008

Appointments

2016 – present, Chair, Interdepartmental Microbiology Program, Iowa State University
2014 – 2016, Associate Chair, Interdepartmental Microbiology Program, Iowa State University
2014 – present, Associate Professor, Chemical and Biological Engineering, ISU
2013 – present, Karen and Denny Vaughn Faculty Fellow, ISU
2012 – present, member of Toxicology Interdepartmental Program, ISU
2010 – present, member of Bioinformatics & Computational Biology Program, ISU
2008 – present, member of Interdepartmental Microbiology Program, ISU
2008 – 2014, Assistant Professor, Chemical and Biological Engineering, Iowa State University

Honors and Awards

- DOE Early Career Development Travel Award, 2016
- Iowa NSF EPSCoR Leadership in Outreach & Mentoring Award, 2015
- Iowa Energy Center Impact Award, 2015
- ISU CBE student AIChE chapter "You Make This Class Bearable" award, 2012, 2013
- Nominated as Outstanding Faculty by ISU Greek Community, Spring 2009
- University of California, Los Angeles Dissertation Year Fellowship, 2005
- University of Kentucky Commonwealth Scholarship, 1995 - 2000

Journal Publications **indicates corresponding author*

Citation statistics acquired from Google Scholar 2/13/16
h-index: 17

42. M.R. Zwonitzer*, M.L. Soupir, **L.R. Jarboe**, D.R. Smith, "Quantifying Attachment and Antibiotic Resistance of *Escherichia coli* from Conventional and Organic Swine Manure", Journal of Environmental Quality 45(2):609-617 (**2016**) **IF 2.65**
41. Z. Tan, J.M. Yoon, D.R. Nielsen, J.V. Shanks, **L.R. Jarboe***, "Membrane Engineering via Trans Unsaturated Fatty Acids Production Improves *Escherichia coli* Robustness and Production of Bioreneawbles", Metabolic Engineering 35:105-113 (**2016**) **IF 5.51**
40. J. Lian, J. Choi, Y.S. Tan, A. Howe, Z. Wen, **L.R. Jarboe***, "Identification of Soil Microbes Capable of Utilizing Cellobiosan", PLOS ONE 11(2):e0149336 (**2016**) *in press* **IF 3.23**
39. J. Lian, R. McKenna, M.R. Rover, D.R. Nielsen, Z. Wen, **L.R. Jarboe*** "Production of Biorenewable Styrene: Utilization of Biomass-Derived Sugars and Insights into Toxicity", Journal of Industrial Microbiology and Biotechnology 43(5):595-604 (**2016**) **IF 2.44**
38. Y. Shen, **L. Jarboe**, R.C. Brown, Z. Wen* "A thermochemical-biological hybrid processing of lignocellulosic biomass for producing fuels and chemicals" Biotechnology Advances 33(8):1799-813 (**2015) IF 9.0**
37. J.P. Bacik*, J.R. Klesmith, T.A. Whitehead, **L.R. Jarboe**, C.J. Unkefer, B.L. Mark, R. Michalczyk "Producing glucose-6-phosphate from cellulosic biomass: structural insights into levoglucosan bioconversion" Journal of Biological Chemistry 290:26638-26648 **(2015) IF 4.57**, 2 citations
36. X. Zhao, K. Davis, R. Brown, **L. Jarboe**, Z. Wen*, "Alkaline treatment for detoxification of acetic acid-rich pyrolytic bio-oil for microalgae fermentation: effects of alkaline species and the detoxification mechanisms" Biomass and Bioenergy 80:203-212 **(2015)**, **IF 3.39**, 1 citation

35. C. Liao, X. Liang, M. Soupir*, **L. Jarboe** "Cellular, particle and environmental parameters influencing attachment in surface waters: a review" Journal of Applied Microbiology 119(2):315-330 **(2015) IF 2.48**
34. J. Trcek*, N.P. Mira, **L. Jarboe*** "Adaptation and tolerance of Bacteria against Acetic Acid" Applied Microbiology and Biotechnology 99(15):6215-29 **(2015) IF 3.34**
33. L.A. Royce, J.M. Yoon, Y. Chen, E. Rickenbach, J.V. Shanks, **L. Jarboe***, "Evolution for exogenous octanoic acid tolerance improves carboxylic acid production and membrane integrity" Metabolic Engineering 29:180-188 **(2015) IF 6.77**, 5 citations
32. Y. Fu, J.M. Yoon, **L. Jarboe**, J. Shanks*, "Metabolic Flux Analysis of *Escherichia coli* MG1655 under Octanoic Acid (C8) Stress" Applied Microbiology and Biotechnology 99:4397-408 **(2015) IF 3.34**, 2 citations
31. X. Liang, M. Soupir*, S. Rigby, **L. Jarboe**, W. Zhang. "Flow cytometry is a promising and rapid method for differentiating between freely suspended *E. coli* and *E. coli* attached to clay particles" Journal of Applied Microbiology, 117:1730-1739 **(2014) IF 2.48**, 1 citation
30. T.J. Claypool, D.R. Raman*, L.R. Jarboe, D.R Nielsen. "Technoeconomic evaluation of Bio-Based Styrene production by Engineered *Escherichia coli*" Journal of Industrial Microbiology and Biotechnology, 41(8):1211-6 **(2014) IF 2.44**, 3 citations
29. L.A. Royce, E. Boggess, Y. Fu, P. Liu, J.V. Shanks, J. Dickerson, **L. Jarboe*** "Transcriptomic analysis of carboxylic acid challenge in *Escherichia coli*: beyond membrane damage" PLOS ONE 9(2):e89580 (**2014) IF 3.23**, 5 citations
28. M. Rover*, P. Johnston, T. Jin, R. Smith, R. Brown, **L. Jarboe**, "Production of clean pyrolytic sugars for fermentation" ChemSusChem 7:1662-1668 **(2014) IF 7.66**, 18 citations
27. X. Zhao, Z. Chi, M. Rover, R. Brown, **L. Jarboe**, Z. Wen* "Microalgae Fermentation of Acetic Acid-Rich Pyrolytic Bio-oil: Reducing Bio-Oil Toxicity by Alkali Treatment" Environmental Progress & Sustainable Energy 32:955 DOI 10.1002/ep.11813 (**2013**) **IF 1.27**, 5 citations
26. Z. Chi, M. Rover, E. Jun, M. Deaton, P. Johnston, R.C. Brown, Z. Wen, **L. Jarboe***, "Overliming detoxification of pyrolytic sugar syrup for direct fermentation of levoglucosan to ethanol" Bioresource Technology 150:220-227 (**2013**) **IF 4.98**, 11 citations
25. L.A. Royce, P. Liu, M.J. Stebbins, B.C. Hanson, **L. Jarboe***, "The damaging effects of short-chain fatty acids on *Escherichia coli* membranes" Applied Microbiology and Biotechnology 97:8317 (**2013**) **IF 3.43**, 24 citations
24. **L. R. Jarboe***, L.A. Royce, P. Liu "Understanding biocatalyst inhibition by carboxylic acids" Frontiers in Microbiology 4:272 (**2013**) **IF 3.90**, 16 citations
23. Y. Liang, X. Zhao, Z. Chi, M. Rover, P. Johnston, R. Brown, **L. Jarboe**, Z. Wen*, "Utilization of acetic acid-rich pyrolytic bio-oil by microalga *Chlamydomonas reinhardtii*: Reducing bio-oil toxicity and enhancing algal toxicity tolerance" Bioresource Technology, 133:500 – 506 (**2013**) **IF 4.98**, 10 citations
22. P. Liu, A. Chernyshov, T. Najdi, Y. Fu, J. Dickerson, S. Sandmeyer, **L. Jarboe***, "Membrane stress caused by octanoic acid in *Saccharomyces cerevisiae*" Applied Microbiology and Biotechnology, 97(7):3239-3251 (**2013**) **IF 3.43**, 13 citations
21. K. B. Kautharapu, J. Rathmacher, **L. Jarboe***, "Growth condition optimization for docosahexaenoic acid (DHA) production by *Moritella marina* MP-1" Applied Microbiology and Biotechnology, 97(7):2859-2866 (**2013**) **IF 3.43**, 5 citations
20. P. Liu, L. Jarboe* "Metabolic Engineering of biocatalysts for carboxylic acids production" Computational and Structural Biology. 3(4) e201210011, (**2012**), 10 citations
19. **L. Jarboe***, P. Liu, K. Kautharapu, L.O. Ingram "Optimization of enzyme parameters for fermentative production of biorenewable fuels and chemicals" Computational and Structural Biotechnology Journal. 3(4) e201210005, (**2012**), 6 citations
18. K.B. Kautharapu, **L. Jarboe***, "Genome sequence of psychrophilic deep sea bacterium *Moritella marina* MP-1", Journal of Bacteriology, 194:6296-6297 (**2012**) **IF 3.83**, 5 citations

17. P.C. Turner, L.P. Yomano, **L.R. Jarboe**, S.W. York, C.L. Baggett, B.E. Moritz, E.B. Zentz, K.T. Shanmugam, L.O. Ingram*. "Optimal mapping and sequencing of the *Escherichia coli* KO11 genome reveal extensive chromosomal rearrangements and multiple tandem copies of the *Zymomonas mobilis pdc* and *adhB* genes" Journal of Industrial Microbiology and Biotechnology. 39(4):629-639. (**2011**), 24 citations
16. **L. R. Jarboe***, P. Liu, L.A. Royce, "Engineering inhibitor tolerance for the production of biorenewable fuels and chemicals", Current Opinion in Chemical Engineering, 1:38-42 (**2011**), 23 citations
15. P. Liu, M.L. Soupir, M. Zwonitzer, B. Huss, **L. Jarboe***, "Association of Antibiotic Resistance in Agricultural *E. coli* Isolates with Attachment to Quartz", Applied and Environmental Microbiology, 77(19):6945-6953 (**2011) IF 3.83**, 9 citations
14. **L.R. Jarboe***, Z. Wen, D.W. Choi, R.C. Brown, "Hybrid thermochemical processing: fermentation of pyrolysis-derived bio-oil", Applied Microbiology and Biotechnology, 91(6):1519-1523 (**2011**) **IF 3.43**, 33 citations
13. D. Layton, A. Ajjarapu, D.W. Choi, **L. Jarboe***, "Engineering ethanologenic *Escherichia coli* for levoglucosan utilization", Bioresource Technology, 102:8318-8322 (**2011**), 29 citations
12. Y. Fu, **L.R. Jarboe**, J. Dickerson*. "Reconstructing genome-wide regulatory network of *E. coli* using transcriptome data and predicted transcription factor activities". BMC Bioinformatics. **12**:233 (**2011**) **IF 2.75**, 21 citations
11. **L.R. Jarboe***, "YqhD: A broad-substrate range aldehyde reductase with various applications in production of biorenewable fuels and chemicals", Applied Microbiology and Biotechnology, 89(2):249-257 (**2010**) **IF 3.28**, 57 citations
10. P.C. Turner, E.N. Miller, **L. Jarboe**, C.L. Baggett, K.T. Shanmugam, L.O. Ingram*. YqhC regulates transcription of the adjacent *Escherichia coli* genes *yqhD* and *dkgA* that are involved in furfural tolerance. Journal of Industrial Microbiology and Biotechnology **38**:431. (**2011**), 34 citations
9. E.N. Miller, P.C. Turner, **L.R. Jarboe**, L.O. Ingram.* Genetic changes that increase 5-hydroxymethyl furfural resistance in ethanol-producing *Escherichia coli* LY180. Biotechnology Letters. 32(5):661-667 (**2010**) **IF 1.77**, 40 citations
8. **L. R. Jarboe**, X. Zhang, X. Wang, J.C. Moore, K.T. Shanmugam, L.O. Ingram*, Metabolic engineering for production of biorenewable fuels and chemicals: contributions of synthetic biology *(invited)* Journal of Biomedicine and Biotechnology. Article ID 761042 (**2010**) **IF 1.22**, 110 citations
7. X. Zhang, K. Jantama, J.C. Moore, **L. Jarboe**, K.T. Shanmugam, L.O. Ingram*, "Metabolic Evolution of energy-conserving pathways for succinate production in *Escherichia coli*", Proceedings of the National Academy of Sciences, USA, 106(48):20180-20185 (**2009**) **IF 9.43**, 121 citations
6. E.N. Miller, **L.R. Jarboe**, P.C. Turner, P. Pharkya, L.P. Yomano, S.W. York, K.T. Shanmugam, L.O. Ingram*, "Furfural Inhibits Growth by Limiting Sulfur Assimilation in Ethanologenic *Escherichia coli* strain LY180", Applied and Environmental Microbiology, 75(19):6132-6141 (**2009**) **IF 3.69,** 89 citations
5. E.N. Miller, **L.R. Jarboe**, L.P. Yomano, S.W. York, K.T. Shanmugam, L.O. Ingram*, "Silencing of NADPH-dependent Oxidoreductases (*yqhD* and *dkgA*) in Furfural-Resistant Ethanologenic *Escherichia coli*", Applied and Environmental Microbiology, 75(13):4315-4323 (**2009**) **IF 3.69**, 101 citations
4. **L.R. Jarboe,** D.R. Hyduke, L.M. Tran, K.J.Y Chou and J.C. Liao*, "Determination of the *Escherichia coli* S-nitrosoglutathione response network using integrated biochemical and systems analysis", Journal of Biological Chemistry, 283(8):5148-5157 (**2008**) **IF 5.52**, 33 citations
3. D.R. Hyduke, **L.R. Jarboe**, L.M. Tran, K.C. Chou and J.C. Liao*, "Integrated network analysis identifies nitric oxide response networks and dihydroxyacid dehydratase as a crucial target in *Escherichia coli*", Proceedings of the National Academy of Sciences, USA, 104(20):8484-8489 (**2007**) **IF 10.23**, 95 citations

2. Zhou, B., D. Beckwith, **L.R. Jarboe** and J.C. Liao*. Markov Chain Modeling of Pyelonephritis-Associated Pili Expression in Uropathogenic *Escherichia coli*. Biophysical Journal 88(4):2541-2553 (**2005**) **IF 4.51**, 11 citations
1. **L.R. Jarboe,** D. Beckwith and J.C. Liao*, "Stochastic Modeling of the Phase-Variable *pap* Operon Regulation in Uropathogenic *Escherichia coli*", Biotechnology and Bioengineering, 88(2):189-203 (**2004**) **IF 2.22**, 14 citations

Book Chapters

7. L.A. Royce, **L. Jarboe**, "Metabolic Engineering for Biocatalyst Robustness to Organic Inhibitors", in Novel Bioprocessing Technology for Production of Biopharmaceuticals and Bioproducts. Weichang Zhou, Claire Komives, co-editors, (*in press*)
6. T. Jin, J. Lian, **L. Jarboe**, "Ethanol: A Model Biorenewable Fuel (*in press*), Wiley Biotechnology Book Series
5. T. Jin, Y. Chen, **L. Jarboe**, "Evolutionary Methods for Improving Production of Biorenewable Fuels and Chemicals in "Biotechnologies for Biofuel Production and Optimization" , C. Trinh and C. Eckert, eds. (*in press*)
4. **L. Jarboe***, Z. Chi "Inhibition of microbial biocatalysts by biomass-derived aldehydes and methods for engineering tolerance" pp 101-120 New Developments in Aldehydes Research 2013. ISBN #978-1-62417-090-4.
3. L.A. Royce, E. Boggess, T. Jin, J. Dickerson, **L. Jarboe**. "Identification of Mutations in Evolved Bacterial Genomes" *Methods in Molecular Biology* (vol 985): *Systems Metabolic Engineering: Methods and Protocols*, Hal Alper (ed). (**2013**)
2. **L.R. Jarboe**, D.R. Hyduke, J.C. Liao, "Systems Approaches to Unraveling Nitric Oxide Response Networks in Prokaryotes", Nitric Oxide (2nd Ed) Ed. L. Ignarro, Elsevier (**2009**)
1. **L.R. Jarboe,** T.B. Grabar, L.P. Yomano, K.T. Shanmugam L.O. Ingram, "Development of Ethanologenic Bacteria", Advances in Biochemical Engineering: Biofuels, Ed. L. Olsson, Springer (**2007**), 144 citations

Funded Grants and Contracts

Ongoing Research Grants

- **L. Jarboe**, Z. Shao "Enabling Two- and Three- Component Bacterial Consortia" NSF BBE **2015** –**2018**. $300,000. Role: PI
- **L. Jarboe**, more than 20 others. "IOWA NSF EPSCOR" **2012** – **2017**. $20,000,000.
- Brent Shanks, Director. Basil Nikolau, Deputy Director. T. Bobik, J. Noel, E. Pichersky, D. Oliver, P. Reilly, K.Y. San, N. DaSilva, J. Dickerson, R. Gonzalez, J. Shanks, E. Wurtele, **L. Jarboe**, A. Datye, J. Dumesic, K. Woo, M. Neurock, G. Kraus, R. Davis, R. Larock. "Engineering Research Center for Biorenewable Chemicals (CBiRC)". NSF. **2008-2016**. Total amount $30,000,000; subaward ~$150,000/yr. Role: project leader, co-leader of Metabolic Engineering Thrust 2014-present

Completed Research Grants

- M. Soupir, **L. Jarboe**, M. Thompson. "Genetic and environmental factors driving *E. coli* attachment to particles in streams". NSF Environmental Engineering. **2012** –**2015**. $304,553. Role: Co-PI.
- N. Mira (Tecnico Lisboa), **L. Jarboe**, FLAD/NSF, **2014-2015** 15,000 euros. Role: Co-PI
- **L. Jarboe**, Z. Wen, R. Brown "Biological Utilization of Thermolytic Substrates by Bacteria and Microalgae: Addressing Toxicity of Substrate Contaminants" NSF Energy for Sustainability. **2012** – **2015**. $300,000+ $10,000 RET supplement for **2012**. Role: PI.
- L. Dong, Z. Wen, **L. Jarboe** "An Automated Lab-Chip Instrumentation for Rapid Metabolic Evolution and Selection of Microorganisms" ISU IPRT **2013** –**2014**. $20,000. Role: Co-PI.
- R. Brown, R. Smith, Z. Wen, **L. Jarboe**. "Leading the Bioeconomy", ISU Presidential Initiative. **2013** – **2015**. $200,000. Role: co-PI.

- A. Liu, T. Jin, K. Weis, J.P. Tessonnier, **L. Jarboe**. "Rapid, High Throughput Identification and Quantification of Carbohydrates and Their Derivatives using UPLC-PDA-ELDS" CBiRC Student-Led Research Grant. **2013** –**2013**. $6,000. Role: Co-PI.
- J. Rathmacher (MTI, Inc), **L. Jarboe**. "SBIR Phase I: Metabolic Engineering of *Moritella marina* MP-1 for DHA production" NSF. **2013** –**2013**. $150,000. Role: Co-PI.
- **L. Jarboe**, Z. Wen, R. Brown, O. Zabotina, M. Spalding. "Hybrid Processing for Sustainable Production of Biorenewable Fuels and Chemicals from Biomass" ISU Plant Sciences Institute Team Enabling. **2012** –**2013**. $50,000. Role: PI.
- Z. Wen, **L. Jarboe**, R. Brown. "Fermentability of different plant species in a hybrid processing platform". ISU Plant Sciences Institute Innovative Research. **2012** –**2013**. $59,999. Role: Co-PI, director of *E. coli* component, contribution to data interpretation, supervision of postdoctoral researcher.
- R. Brown, D. Laird, B. del Campo, **L. Jarboe**. "Production of Activated Carbon from Fast Pyrolysis Char" Iowa Energy Center. **2012** –**2014**. $201,552. Role: Co-PI.
- **L. Jarboe**, M. Soupir, C. Logue, L. Nolan "Sequence analysis of transferable genes encoding bacterial attachment and multi-drug resistance" Center for Health Effects of Environmental Contamination (CHEEC). **2012** –**2013**. $30,000. Role: PI.
- **L. Jarboe**, Z. Wen, R. Brown. "Hybrid Processing for Robust Production of Biorenewable Fuels and Chemicals". Iowa Energy Center. **2012** –**2015**. $315,020. Role: PI.
- M. Soupir, M. Helmers, M. Thompson, **L. Jarboe**, A. Mallarino, R. Kanwar. "Investigation of bacteria transport and resistance mechanisms and implications for water quality from confinement swine and beef grazing production systems in Iowa" Leopold Center Cross-Cutting Initiatives. **2012** –**2015**. $162,100. Role: Participant.
- Z. Wen, **L. Jarboe**. "Building a research program for converting lignocellulosic biomass into bioenergy through a hybrid process" ISU Bioeconomy Institute Signature Programs. **2011** –**2013**. $20,000. Role: Co-PI.
- Z. Wen, **L. Jarboe**, R. Brown. "Developing a hybrid conversion process for producing bioenergy from lignocellulosic biomass" ISU Bailey Research Career Development Award. **2011 –2014**. $150,000. Role: Participant.
- **L. Jarboe**. "Metabolic Engineering of *Moritella marina* to produce DHA: Transcriptome Sequencing: Jan 2011 amendment". Metabolic Technologies/IPRT. **2011**. $24,040. Role: PI.
- **L. Jarboe**. "Metabolic Engineering of *Moritella marinus* to produce DHA: Transcriptome Sequencing" Metabolic Technologies, Inc /IPRT. **2009** –**2010**. $19,848. Role: PI.

Travel/Symposium/Diversity Grants

- N.P. Mira, S. Vinga, M. Sauer, P. Punt, **L. Jarboe**, Z. Shao, J.V. Shanks "Towards Sustainable Microbial Production of Levulinic and Itaconic Acids" European Research Area Network in Synthetic Biology, National Science Foundation. 4,500euro+$5,000. Role: co-PI.
- **L. Jarboe**, I. Schneider. "Diversity Speakers for Chemical and Biological Engineering Seminar Series" ISU Women's and Diversity Grant Program Application. **2013** –**2014**. $1,500. Role: PI.
- **L. Jarboe**, Z. Wen. "Hybrid Processing for Biorenewable Fuels and Chemicals Production" workshop support **2013**. ISU Office of Biotechnology, $3,000; ISU Plant Sciences Institute, $5,000; Iowa Energy Center, $4,500. Role: PI.
- **L. Jarboe**. Support to attend Metabolic Engineering Conference IX, June **2012**, Biarritz, France. Engineering Conferences International. $1,000; Iowa State University. $1,061.
- **L. Jarboe**, Z. Wen. "Hybrid Processing for Biorenewable Fuels and Chemicals Production" workshop support, **2012**. ISU Office of Biotechnology, $7,800; ISU Plant Sciences Institute, $2,500. Role: PI.
- **L. Jarboe**. Support to attend Metabolic Engineering Conference VIII, June 13-18th **2010**, Jeju, South Korea. Engineering Conferences International/NSF. $800; Iowa State University. $2,158.

Formally Invited Lectures and Presentations

20. "Hybrid Processing for Robust Production of Biorenewable Fuels and Chemicals", Iowa Energy Summit, 10/26/15
19. "Enabling Robust Production of Biorenewable Fuels and Chemicals from Biomass", Renewable Energy Group Life Sciences, South San Francisco, CA 6/3/15
18. "Enabling Robust Production of Biorenewable Fuels and Chemicals from Biomass" at Biotechnology for Sustainable Development, Government College, Lahore, Pakistan, **2014**
17. "Lessons from Engineering Microbial Genetic Networks" National Association of Plant Breeders workshop, Minneapolis, MN, **2014**
16. "Enabling Robust Production of Biorenewable Fuels and Chemicals from Biomass" OPX Bio, Boulder, CO, **2014**
15. "Enabling Robust Production of Biorenewable Fuels and Chemicals from Biomass" Department of Biological Systems Engineering, Virginia Tech, **2014**
14. "Identifying and Addressing Mechanisms of Biocatalyst Inhibition by Short-Chain Carboxylic Acids" Society of Industrial Microbiology and Biotechnology Annual Meeting, San Diego, CA. **2013**
13. "Enabling Robust Production of Biorenewable Fuels and Chemicals" Frontiers in Biorefining, St Simon's Island, GA. **2012**
12. "Overcoming Biocatalyst Inhibition for Robust Production of Biorenewable Fuels and Chemicals" University of Maryland, College Park. **2012**
11. "Engineering Inhibitor-Tolerant Bacterial Biocatalysts" Genomatica, **2012**
10. "Metabolic Engineering for Production of Biorenewable Fuels and Chemicals" Iowa Academy of Science Annual Meeting, **2012**
9. "Engineering Inhibitor-Tolerant Bacterial Biocatalysts" University of Iowa, Department of Chemical and Biochemical Engineering, **2011**
8. "Rational and Reverse Engineering for Biocatalyst Tolerance" Society of Industrial Microbiology Annual Meeting, New Orleans, LA, **2011**
7. "Biocatalyst Engineering for Inhibitor Tolerance" SYMBIOSIS 4.0 Biotechnology Congress, Technologico de Monterrey, Monterrey, Mexico, **2011**
6. "Strategies to Overcome Biocatalyst Inhibition" SIM Annual Meeting, San Francisco, CA, Session 15, **2010**
5. "Strategies to Overcome Biocatalyst Inhibition", Division of Chemical Engineering, Pusan National University, Republic of South Korea, **2010**
4. "Strategies to Overcome Biocatalyst Inhibition" in "Biochemistry for Engineers" course, Department of Chemical and Biological Engineering, Korea University, Republic of South Korea, **2010**
3. "Engineering Bacterial Stress Response Networks" University of Northern Illinois Department of Biological Sciences, **2009**
2. "Engineering Bacterial Stress Response Networks", University of Kentucky Department of Chemical Engineering and Materials Science, **2009**
1. "Chemical Production: Opportunities and Challenges", Iowa State University Biorenewables Intensive Program Lecture, **2009**

Contributed Lectures and Presentations

38. "Discovery of Design Strategies for Enabling Pyrolytic Sugar Tolerance and Utilization by *Escherichia coli*", T. Jin, L. Jarboe. AIChE Annual Meeting, in "Biobased Fuels and Chemicals II: Enzymatic Conversion of Recalcitrant Feedstocks", 11/9/2015, Salt Lake City, UT
37. "Outer Membrane Proteins as Genetic Factors Driving *Escherichia coli* Attachment to Environmental Particles", American Society for Microbiology Annual Meeting, 5/31/15, New Orleans, LA
36. T. Jin, **L. Jarboe**. "Engineering *Escherichia coli* for Ethanol Production from Pyrolytic Sugar". American Institute of Chemical Engineers annual meeting in "Biological Conversions and Processes for Renewable Feedstocks II", Atlanta, GA (**2014**)

35. X. Liang, C. Liao, M. Soupir, **L. Jarboe**, M. Thompson. "Attachment of *E. coli* Strains to Environmental Particles in Streams and Stream Sediments" Soil Science Society of America, Long Beach, CA (**2014**)
34. **L. Jarboe**, Z. Wen, R.C. Brown. "Hybrid Thermochemical/Biological Processing for Robust Production of Biorenewable Fuels and Chemicals". Lignin Utilization workshop, Denver CO (**2014**)
33. **L. Jarboe**, P. Liu, L. Royce. "Understanding and Mitigating Carboxylic Acid Toxicity in *E. coli* and *S. cerevisiae*". American Chemical Society annual meeting, BIOT Division. Dallas, TX (**2014**)
32. Z. Chi, **L. Jarboe**, Z. Wen, R.C. Brown, M. Rover, P. Johnston "Overliming Detoxification of Pyrolytic Sugars for Direct Fermentation of Levoglucosan to Ethanol" SIMB Annual Meeting, San Francisco, CA (**2013**)
31. **L. Jarboe**, Z. Chi, Z. Wen, R.C. Brown "Utilization of acetic acid-rich pyrolytic bio-oil by microalgae *Chlamydomonas reinhardtii*: Reducing bio-oil toxicity and enhancing toxicity tolerance" Bioenergy IV: Innovations in Biomass Conversion for Heat, Powers, Fuels and Chemicals", Otranto, Italy (**2013**)
30. J. Claypool, D.R. Raman, **L. Jarboe**, D. Nielsen, "The Economic Potential of Bio-Based Styrene from *Escherichia coli*" 35th Symposium on Biotechnology for Fuels and Chemicals, Portland, OR, (**2013**)
29. L. Royce, **L. Jarboe**, "The Damaging Effects of Short Chain Fatty Acids on *Escherichia coli* membranes" Omics Group Metabolomics-2013, Chicago, IL, (**2013**)
28. L. Royce, **L. Jarboe**, "Understanding Carboxylic Acid Toxicity through Omics Analysis" Omics Group Metabolomics-2013, Chicago, IL, (**2013**)
27. M. Rover, P. Johnson, **L. Jarboe**, R.C. Brown, "Clean Pyrolytic Sugars Solution" AIChE Annual Meeting, Pittsburgh, PA, (**2012**)
26. T. Jin, Y. Liang, D. Layton, M. Deaton, Z. Chi, R.C. Brown, Z. Wen, **L. Jarboe**, "Hybrid Thermochemical Processing: Fermentation of Pyrolytic Substrates" AIChE Annual Meeting, Pittsburgh, PA, (**2012**)
25. **L. Jarboe** "Engineering inhibitor tolerance for the production of biorenewable fuels and chemicals" Metabolic Engineering IX, Biarritz, France, (**2012**)
24. T. Jin, Y. Liang, Z. Chi, D. Layton, R.C. Brown, Z. Wen, **L. Jarboe** "Enabling pyrolytic substrate utilization for the production of biorenewable fuels and chemicals" Metabolic Engineering IX, Biarritz, France, (**2012**)
23. M. Deaton, **L. Jarboe**, "Directed Evolution of Ethanologenic *Escherichia coli* for Bio-oil Tolerance" AIChE Student Poster Session, Minneapolis, MN, (**2011**)
22. P. Liu, **L.R. Jarboe**, "Antibiotic Resistance in Agricultural E. coli Isolates is Associated with Attachment to Quartz" American Society for Microbiology Regional Meeting, Des Moines, IA, (**2011**)
21. M. Stebbins, **L.R. Jarboe**, L.A. Royce, J. Au, "Analysis of *E. coli* membrane composition during Octanoic Acid Inhibition" AIChE annual meeting, Salt Lake City, UT, (**2010**)
20. L.A. Royce, M. Stebbins, M. Rodriguez-Moya, E. Boggess, J. Dickerson, R. Gonzalez, **L. Jarboe**, "Increasing Product Tolerance through Metabolic Engineering: Short-Chain Fatty Acids" AIChE annual meeting, Salt Lake City, UT, (**2010**)
19. M. Zwonitzer, M.L. Soupir, **L.R. Jarboe**, "Exploring the relationship between attachment and resistance of *Escherichia coli* collected from organic and commercial swine operations." ASA-CSSA-SSSA International Annual Meeting in Long Beach, CA, (**2010**)
18. K.B. Kautharapu, **L.R. Jarboe**, "Metabolic engineering of *Moritella marina* MP-1 for Docosahexanoic acid Production" SIM Annual Meeting, San Francisco, CA, (**2010**)
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6. "Generation of bio-available phenolic substrates from bio-oil" M. Rover*, R.C. Brown, **L. Jarboe**, K. Davis, R.G. Smith, ISURF 04441 (*under review with ISURF*)
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