

Curriculum Vitae

Kristala L. J. Prather

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Education

- Ph.D. Chemical Engineering, University of California, Berkeley, Dec 1999
Dissertation: "Development of Low-Copy Expression Vectors Derived from the F Plasmid of *Escherichia coli*"
Research Advisor: Jay D. Keasling
- S.B. Chemical Engineering, Massachusetts Institute of Technology, May 1994

Experience

- 9/2004 – present: **Massachusetts Institute of Technology, Cambridge, MA**
Dept of Chemical Engineering,
Executive Officer (2/2020 – present)
Arthur D. Little Professor (7/2017 – present)
Associate Professor with Tenure (7/2013 – 6/2017)
Associate Professor without Tenure (7/2011 – 6/2013)
Assistant Professor (9/2004 – 6/2011)
Courses taught: Introduction to Chemical Engineering; Integrated Chemical Engineering/Introduction to Biocatalysis; Biochemical Engineering, Chemical-Biological Engineering Laboratory.
- 4/2000 – 7/2004: **Merck Research Labs, Merck & Co., Inc. Rahway, NJ**
Bioprocess Research & Development,
Research Fellow (12/2003 – 7/2004)
Senior Research Biochemical Engineer (4/2000-11/2003)
Characterization of seed selection for recombinant process; development and characterization of stably transfected cell cultures; development of recombinant biocatalysis libraries. Supervised two full-time associate staff, one contingency employee, and three interns (over four summers). Delivered guest lectures in Biochemical Engineering course at Columbia University.
- 8/1994 – 12/1999: **University of California. Berkeley, CA**
Graduate Student/Research Assistant, Dept of Chemical Engineering
Studied physiology of recombinant *E. coli* expression systems, with emphasis on plasmid-based expression for metabolic engineering applications.
- 1/1999 – 5/1999: **University of California. Berkeley, CA**
Graduate Student Instructor, Dept of Chemical Engineering
Biochemical Engineering Laboratory (ChE 170L). Taught all laboratory sections, graded laboratory reports, redesigned major portions of course curriculum.

- 6/1998 – 9/1998: **E.I. duPont de Nemours and Co. Wilmington, DE**
Graduate Intern, DuPont Life Sciences, Biochemical Science and Engineering/Bioprocess Development Center
Constructed and investigated recombinant *E. coli* strain for improved co-factor recycling, thereby enhancing productivity of reduced product.
- 8/1996 – 12/1996: **University of California. Berkeley, CA**
Graduate Student Instructor, Dept of Chemical Engineering
Biochemical Engineering (ChE 170). Taught two discussion sections, prepared and graded exam problems, lectured for one-week during instructor's absence.
- 1/1996 – 5/1996: **University of California. Berkeley, CA**
Graduate Student Instructor, Dept of Chemical Engineering
Chemical Process Design (ChE 160). Held regular meetings with project groups, evaluated evolving process designs.
- 6/1994 – 8/1994: **Exxon Production Research Company. Houston, TX**
Summer Intern.
- 9/1993 – 5/1994: **MIT, Undergraduate Research Opportunities Program. Cambridge, MA**
Mathematical modeling and data analysis of substrate pulse addition in fermentation. Model tested for non-growth associated experiments.
- 2/1992 – 5/1994: **MIT, Graduate School Office. Cambridge, MA**
Student office assistant.
- 6/1993 – 8/1993: **Rohm & Haas Texas, Inc. Deer Park, TX**
Summer Engineer.
- 6/1992 – 8/1992: **Merck Manufacturing Division, Merck & Co., Inc. West Point, PA**
Summer Intern, Biological Process Engineering.
- 10/1990 – 5/1992: **MIT, Office of Minority Education. Cambridge, MA**
Student coordinator of Secrets and Strategies for Academic Success (SSAS) seminar series.
- 6/1991 – 8/1991: **Texas Eastman Company. Longview, TX**
Engineer's Assistant.

Honors and Awards

Fellow, American Institute for Medical and Biological Engineering (AIMBE) (2020)
Fellow, American Institute of Chemical Engineers (AIChE) (2020)
Fellow, American Association for the Advancement of Science (AAAS) (2018)
Charles Thom Award of the Society for Industrial Microbiology and Biotechnology (2017)
C. Michael Mohr Outstanding Faculty Award for Undergraduate Teaching, Dept. of Chemical Engineering, MIT (2016)
Martin H. Freeman Lecture (inaugural lecture), Middlebury College, Middlebury, VT (2016)
Lloyd N. Ferguson Lecture, California State University Los Angeles (2015)

Merck Lectureship in Chemical Engineering, University of Virginia (2014)
Dr. Bruce J. Nelson '74 Distinguished Speaker Series, Harvey Mudd College (2014)
Fellow, Radcliffe Institute for Advanced Study (2014-2015)
MIT MacVicar Faculty Fellow (2014)
Third Indonesian-American Kavli Frontiers of Science Symposium speaker/Kavli Fellow (2013)
Van Ness Lectureship, Rensselaer Polytechnic Institute (2012)
Young Scientist, World Economic Forum Annual Meeting of the New Champions (2012)
Biochemical Engineering Journal Young Investigator Award (2011)
MIT School of Engineering Junior Bose Award for Excellence in Teaching (2010)
National Academy of Sciences Kavli Frontiers of Science Symposium speaker/Kavli Fellow (2010)
National Science Foundation CAREER Award (2010)
Technology Review "TR35" Young Innovator (2007)
C. Michael Mohr Outstanding Faculty Award for Undergraduate Teaching, Dept. of Chemical Engineering, MIT (2006)
Office of Naval Research Young Investigator Award (2005-2008)
Camille and Henry Dreyfus Foundation New Faculty Award (2004)
Ford Foundation Dissertation Fellowship (1998)
UNCF-Merck Science Initiative Graduate Fellowship (1996-1998)
NOBCCHE/DuPont Graduate Fellowship Award (1996-1997)
National Defense Science and Engineering Graduate (NDSEG) Fellowship (1994-1997)
Robert T. Haslam Cup for professional promise in chemical engineering (MIT 1994)
Karl Taylor Compton Prize (MIT 1994)
National Society of Black Engineers (NSBE) Distinguished Fellow (1994)
Ronald E. McNair/Black Alumni at MIT Scholarship Award (1993)
National Science Foundation Scholarship (1993)
Tau Beta Pi National Honor Society

Publications

1. Jones, K.L. and J. D. Keasling. 1998. "Construction and characterization of F plasmid-based expression vectors." *Biotechnol. Bioeng.* **59**:659-665. PMID:10099385.
2. Carrier, T.A., K.L. Jones, and J. D. Keasling. 1998. "mRNA stability and plasmid copy number effects on gene expression from an inducible promoter system." *Biotechnol. Bioeng.* **59**:666-672. PMID:11948448.
3. Jones, K.L., S.-W. Kim, and J.D. Keasling. 2000. "Low-copy plasmids can perform as well as or better than high-copy plasmids for metabolic engineering of bacteria." *Metabolic Engineering.* **2**:328-338. PMID:11120644.
4. Aldor, I.S., S.-W. Kim, K.L.J. Prather, and J.D. Keasling. 2002. "Metabolic engineering of a novel propionate-independent pathway for the production of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) in recombinant *Salmonella enterica* serovar Typhimurium." *Appl. Envir. Microbiol.* **68**:3848-3854.
5. Prather, K. J., S. Sagar, J. Murphy, and M. Chartrain. 2003. "Industrial scale production of plasmid DNA for vaccine and gene therapy: plasmid design, production, and purification." *Enzyme Microb. Technol.* **33**:865-883.
6. Montgomery, D. L., and K.J. Prather. 2006. "Design of plasmid DNA constructs for vaccines." in DNA Vaccines, 2nd ed. Humana Press.

7. Prather, K.L.J., M.C. Edmonds, and J.W. Herod. 2006. "Identification and characterization of IS1 transposition in plasmid amplification mutants of *E. coli* clones producing DNA vaccines." *Appl. Microbiol. Biotechnol.* **73**:815-826. PMID:19205691.
8. Prather, K.L.J. and C.H. Martin. 2008. "De novo biosynthetic pathways: rational design of microbial chemical factories." *Curr. Opin. Biotechnol.* **19(5)**:468-474.
9. Leonard, E., D.R. Nielsen, K.V. Solomon, and K.L.J. Prather. 2008. "Engineering microbes with synthetic biology frameworks." *Trends Biotechnol.* **26(12)**:674-681.
10. Rodrigo, G., J. Carrera, K.L.J. Prather, and A. Jaramillo. 2008. "DESHARKY: Automated design of metabolic pathways for optimal cell growth." *Bioinformatics.* **24(21)**:2554-2556.
11. Nielsen, D.R., and K.L.J. Prather. 2009. "In situ product recovery of n-butanol using polymeric resins." *Biotechnol. Bioeng.* **102(3)**:811-821.
12. Martin, C.H and K.L.J. Prather. 2009. "High-titer production of monomeric hydroxyvalerates from levulinic acid in *Pseudomonas putida*." *J. Biotechnol.* **139(1)**:61-67.
13. Moon, T.S., S.-H. Yoon, A.M. Lanza, J.D. Roy-Mayhew, and K.L.J. Prather. 2009. "Production of glucaric acid from a synthetic pathway in recombinant *Escherichia coli*." *Appl. Environ. Microbiol.* **75(3)**:589-595. DOI: 10.1128/AEM.00973-08. PMID:19060162.
14. Yoon, S.-H., T.S. Moon, P. Iranpour, A.M. Lanza, and K.J. Prather 2009. "Cloning and characterization of uronate dehydrogenases from two *Pseudomonads* and *Agrobacterium tumefaciens* str. C58." *J. Bacteriol.* **191(5)**:1565-1573. PMID:3949717.
15. Bower, D.M, and K.L.J. Prather. 2009. "Engineering of bacterial strains and vectors for the production of plasmid DNA." *Appl. Microbiol. Biotechnol.* **82(5)**:805-813.
16. Martin, C.H., D. R. Nielsen, K.V. Solomon, and K.L.J. Prather. 2009. "Synthetic metabolism: engineering biology at the protein and pathway scales." *Chem. Biol.* **16(3)**:277-286.
17. Leonard, E., W. Runguphan, S. O'Connor, and K.J. Prather. 2009. "Opportunities in metabolic engineering to enable scalable alkaloid production." *Nature Chem. Biol.* **5(5)**:292-300.
18. Tseng, H.-C., C. Martin, D.R. Nielsen, and K.L.J. Prather. 2009. "Metabolic engineering of *Escherichia coli* for the enhanced production of (R)- and (S)-3-hydroxybutyrate." *Appl. Environ. Microbiol.* **75(10)**:3137-3145. DOI: 10.1128/AEM.02667-08. PMID:19304817.
19. Nielsen, D.R., E. Leonard, S.-H. Yoon, H.-C. Tseng, C. Yuan, and K.J. Prather. 2009. "Engineering alternative butanol production platforms in heterologous bacteria." *Metab. Eng.* **11**:262-273. DOI: 10.1016/j.ymben.2009.05.003. PMID:19464384.
20. Moon, T.S., S.-H. Yoon, M.-J. Tsang Mui Ching, A.M. Lanza, and K.L.J. Prather. 2009. "Enzymatic assay of D-glucuronic acid using uronate dehydrogenase." *Analytical Biochemistry.* **392(2)**:183-185.
21. Oliveira, P.H., K. J. Prather, D. M. Prazeres, and G. Monteiro. 2009. "Structural instability of plasmid biopharmaceuticals: challenges and implications." *Trends Biotechnol.* **27(9)**:503-511.

22. Dueber, J.E., G.C. Wu, G. R. Malmirchegini, T.S. Moon, C.J. Petzold, A.V. Ullal, K.L.J. Prather, J.D. Keasling. 2009. "Synthetic protein scaffolds provide modular control over metabolic flux." *Nature Biotechnol.* **27(8)**:753-759.
23. K.L.J Prather. 2010. "Low copy number plasmids as artificial chromosomes," in The Metabolic Pathway Engineering Handbook: Tools and Applications, CRC Press.
24. Jeng, E.S., J. D. Nelson, K. L. J. Prather, and M. S. Strano. 2010. "Detection of a single nucleotide polymorphism using single-walled carbon-nanotube near-infrared fluorescence." *Small.* **6(1)**:40-43.
25. Martin, C.H., D. Wu, and K.L.J. Prather. 2010. "Integrated bioprocessing for the pH-dependent production of 4-valerolactone from levulinate in *Pseudomonas putida* KT2440." *Appl. Environ. Microbiol.* **76(2)**:417-424.
26. Nielsen, D.R., G.S. Amarasiwardena, and K.L.J. Prather. 2010. "Predicting the adsorption of second generation biofuels by polymeric resins with applications for *in situ* product recovery (ISPR)." *Bioresource Technol.* **101**:2762-2769.
27. Nielsen, D.R., S.-H. Yoon, C. J. Yuan, and K.L.J. Prather. 2010. "Metabolic engineering of acetoin and meso-2, 3-butanediol biosynthesis in *E. coli*." *Biotechnol. J.* **5**:274-284.
28. Moon, T.S., J. E. Dueber, E. Shiue and K. L. J. Prather. 2010. "Use of modular, synthetic scaffolds for improved production of glucaric acid in engineered *E. coli*." *Metab. Eng.* **12**:298-305. PMID:20117231.
29. Oliveira, P.H., K. J. Prather, D. M. F. Prazeres, and G. A. Monteiro. 2010. "Analysis of DNA repeats in bacterial plasmids reveals the potential for recurrent instability events." *Appl. Microbiol. Biotechnol.* **87**:2157-2167.
30. Fischer, C.R., H.-C. Tseng, M. Tai, K.L.J. Prather, G. Stephanopoulos. 2010. "Assessment of heterologous butyrate and butanol pathway activity by measurement of intracellular pathway intermediates in recombinant *Escherichia coli*." *Appl. Microbiol. Biotechnol.* **88(1)**:265-275.
31. Leonard, E., P. Ajikumar, K. Thayer, W.-H. Xia, J.D. Mo, B. Tidor, G. Stephanopoulos, K.L.J. Prather. 2010. "Combining metabolic and protein engineering of a terpenoid biosynthetic pathway for overproduction and selectivity control." *Proc. Nat. Acad. Sci. USA.* **107(31)**:13654-13659.
32. Prather, K.J., McLamore, E.S., Porterfield, D.M. 2010. "Synthetic biology and the rational design of microbial chemical factories." *Gravit. and Space Biol. Bull.* **23**:49-54.
33. Tseng, H.-C., C. L. Harwell, C. H. Martin, K. L. J. Prather. 2010. "Biosynthesis of chiral 3-hydroxyvalerate from single propionate-unrelated carbon sources in metabolically engineered *E. coli*." *Microb. Cell Fact.* **9**:96. PMID:21110891.
34. Lippow, S.M.*, T. S. Moon*, S. Basu, S.-H. Yoon, X. Li, B.A. Chapman, K. Robison, D. Lipovšek, K.L.J. Prather. 2010. "Engineering enzyme specificity using computational design of a defined-sequence library." *Chem. Biol.* **17**:1306-1315. (*equal contribution)
35. Oliveira, P.H., K. L. J. Prather, D. M. F. Prazeres and G. A. Monteiro. 2011. "Mutation detection in plasmid biopharmaceuticals." *Biotechnol. J.* **6(4)**:378-391.

36. Dhamankar, H and K. L. J. Prather. 2011. "Microbial chemical factories: recent advances in pathway engineering for synthesis of value added chemicals." *Curr. Opin. Struct. Biol.* **21(4)**:488-494.
37. Solomon, K.V. and K. L. J. Prather. 2011. "The zero-sum game of pathway optimization: emerging paradigms for tuning gene expression." *Biotechnol. J.* **6(9)**:1064-1070.
38. Gonçalves, G.L., D.M. Bower, D.M. F. Prazeres, G.A. Monteiro, K.L.J. Prather. 2012. "Rational engineering of *E. coli* strains for plasmid biopharmaceutical manufacturing." *Biotechnol. J.* **7**:251-261.
39. Moon, T.S., D.R. Nielsen, K.L.J. Prather. 2012. "Sensitivity analysis of a proposed model mechanism for newly created glucose-6-oxidases." *AIChE J.* **58(8)**:2303-2308.
40. Bower, D.M., K.S. Lee, R.J. Ram, and K.L.J. Prather. 2012. "Fed-batch microbioreactor platform for scale down and analysis of a plasmid DNA production process." *Biotechnol. Bioeng.* **109(8)**:1976-1986.
41. Shiue, E. and K.L.J. Prather. 2012. "Synthetic biology devices as tools for metabolic engineering." *Biochem. Eng. J.* **65**:82-89.
42. Fernandes, F., J. Vidigal, M. Dias, K.L.J. Prather, M.J.T. Carrondo, A.S. Coroadinha, A.P. Teixeira, P.M. Alves. 2012. "Flipase-mediated cassette exchange in Sf9 insect cells for stable gene expression." *Biotechnol. Bioeng.* **109(11)**:2836-2844.
43. Gonçalves, G.A.L., D.M.F. Prazeres, G.A. Monteiro, K.L.J. Prather. 2013. "De novo creation of MG1655-derived *E. coli* strains specifically designed for plasmid DNA production." *Appl. Microbiol. Biotechnol.* **97**:611-620.
44. Solomon, K.V., T.S. Moon, B. Ma, T.M. Sanders, and K.L.J. Prather. 2013. "Tuning primary metabolism for heterologous productivity." *ACS Synth. Biol.* **2**:126-135. PMID:23656436.
45. Bower, D.M. and K.L.J. Prather. 2012. "Development of new plasmid DNA vaccine vectors with R1-based replicons." *Microb. Cell Fact.* **11**:107.
46. Solomon, K.V., T.M. Sanders, and K.L.J. Prather. 2012. "A dynamic metabolite valve for the control of central carbon metabolism." *Metab. Eng.* **14**:661-671. DOI: 10.1016/j.ymben.2012.08.006. PMID:23026120.
47. Tseng, H.-C. and K.L.J. Prather. 2012. "Controlled biosynthesis of odd-chain fuels and chemicals via engineered modular metabolic pathways." *Proc. Nat. Acad. Sci. USA* **109(44)**: 17925–17930. DOI: 10.1073/pnas.1209002109. PMID:23071297.
48. Martin, C.H., H. Dhamankar, H.-C. Tseng, M.J. Sheppard, and K.L.J. Prather. 2013. "A platform pathway for production of 3-hydroxyacids as value-added biochemicals - a biosynthetic route to 3-hydroxy- γ -butyrolactone." *Nat. Commun.* **4**:1414. DOI: 10.1038/ncomms2418. PMID:23361005.
49. Pirie, C., M. De Mey, K.L.J. Prather and P.K. Ajikumar. 2013. "Integrating the protein and metabolic engineering toolkits for next-generation chemical biosynthesis." *ACS Chem. Biol.* **8**:662-672.
50. Prather, K.L.J. 2013. "The 'new' biotech industry" *Current Opinion in Biotechnology.* **24(6)**: 963-964 (Editorial).

51. Abin-Fuentes, A., M. E. Mohamed, D.I.C. Wang and K.L.J. Prather. 2013. "Exploring the mechanism of biocatalyst inhibition in microbial desulfurization." *Appl. Environ. Microbiol.* **79(24)**:7807-7817.
52. Khademhosseini, A. and K.L.J. Prather. 2013. "Editorial: Biomolecular engineering - latest advances and applications" *Biotechnology Journal*, **8(12)**:1366-1367.
53. Abin-Fuentes, A., J. C. Leung, M. E. Mohamed, D.I.C. Wang and K.L.J. Prather. 2014. "Rate-limiting step analysis of the microbial desulfurization of dibenzothiophene in a model oil system." *Biotechnol. Bioeng.* **111(5)**:876-884.
54. McMahon, M.D. and K. L. J. Prather. 2014. "Functional screening and in vitro analysis reveal thioesterases with enhanced substrate specificity profiles that improve short-chain fatty acid production in *Escherichia coli*." *Appl. Environ. Microbiol.* **80(3)**:1042-1050. DOI: 10.1128/AEM.03303-13.
55. Shiue, E. and K.L.J. Prather. 2014. "Improving D-glucaric acid production from myo-inositol in *E. coli* by increasing MIOX stability and myo-inositol transport." *Metab. Eng.* **22**:22-31.
56. Hicks, M.A. and K.L.J. Prather. 2014. "Bioprospecting in the Genomic Age." In Sima Sariaslani, Geoffrey Gadd, editors: *Advances in Applied Microbiology*, Vol 87, AAM, UK: Academic Press, pp. 111-146.
57. Simcikova, M., K.L.J. Prather, D.M.F. Prazeres and G.A. Monteiro. 2014. "On the dual effect of glucose during production of pBAD/AraC-based minicircles." *Vaccine.* **32**:2843-2846.
58. Gonçalves, G.A.L., K.L.J. Prather, G.A. Monteiro, D.M.F. Prazeres. 2014. "Engineering of *Escherichia coli* strains for plasmid biopharmaceutical production: scale-up challenges." *Vaccine.* **32**:2847-2850.
59. Nielsen, J., M. Fussenegger, J. Keasling, S.Y. Lee, J.C. Liao, K. Prather, B. Palsson. 2014. "Engineering synergy in biotechnology." *Nature Chem. Biol.* **10**:319-322.
60. Gonçalves, G.A.L., P. H Oliveira, A.G. Gomes, K.L.J. Prather, L.A. Lewis, D.M.F. Prazeres, and G.A. Monteiro. 2014. "Evidence that the insertion events of IS2 transposition are biased towards abrupt compositional shifts in target DNA and modulated by a diverse set of culture parameters." *Appl. Microbiol. Biotechnol.* **98(15)**: 6609-6619, DOI 10.1007/s 00253-014-5695-6.
61. Lopes, M.B., G.A.L. Gonçalves, D. Felício-Silva, K.L.J. Prather, G.A. Monteiro, D.M.F. Prazeres, C.R.C. Calado. 2015. "In-situ NIR monitoring of plasmid bioproduction processes: effect of the cultivation medium composition, the cultivation strategy and the *Escherichia coli* strain." *J. Chem. Technol. Biotechnol.* **90(2)**:255-261, DOI: 10.1002/jctb.4431.
62. Gonçalves, G.A.L., K.L.J. Prather, G.A. Monteiro, A.E. Carnes, D.M.F. Prazeres. 2014. "Plasmid DNA production with *Escherichia coli* GALG20, a *pgi*-gene knockout strain: fermentation strategies and impact on downstream processing." *J. Biotechnol.* **186**:119-127, DOI: 10.1016/j.jbiotec.2014.06.008.
63. Dhamankar, H., Y. Tarasova, C.H. Martin, and K.L.J. Prather. 2014. "Engineering *E. coli* for the biosynthesis of 3-hydroxy- γ -butyrolactone (3HBL) as a value added chemical from glucose as a sole carbon source." *Metab. Eng.* **25**:72-81, DOI: 10.1016/j.ymben.2014.06.004. PMID:24954784.

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65. Rodrigues, J.L., M. Sousa, K.L.J. Prather, L.D. Kluskens, L.R. Rodrigues. 2014. "Selection of *Escherichia coli* heat shock promoters towards their application as stress probes." *J. Biotechnol.*, **188**:61-71. DOI: 10.1016/j.jbiotec.2014.08.005.
66. Sheppard, M.J., A.M. Kunjapur, S.J. Wenck, K.L.J. Prather. 2014. "Retro-biosynthetic screening of a modular pathway design achieves selective route for microbial synthesis of 4-methyl-pentanol." *Nat. Commun.* **5**:5031. DOI: 10.1038/ncomms6031. PMID:25248664.
67. Shiue, E., I.M. Brockman, K.L.J. Prather. 2015. "Improving product yields on D-glucose in *Escherichia coli* via alternative carbon sources." *Biotechnol. Bioeng.* **112**(3):579-587, DOI: 10.1002/bit.25470. PMID:25258165.
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69. Brockman, I.M. and K.L.J. Prather. 2015. "Dynamic knockdown of *E. coli* central metabolism for redirecting fluxes of primary metabolites." *Metab. Eng.* **28**:104-113, DOI: 10.1016/j.ymben.2014.12.005. PMID:25542851.
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71. Kunjapur, A.M. and K.L.J. Prather. 2015. "Microbial engineering for aldehyde synthesis." *Appl. Environ. Microbiol.*, **81**:1892–1901, DOI: 10.1128/AEM.03319-14. PMID:25576610.
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75. Boock, J.T., A. Gupta, K.L.J. Prather. 2015. "Screening and modular design for metabolic pathway optimization." *Curr. Opin. Biotechnol.* **36**:189-198, DOI:10.1016/j.copbio.2015.08.013 (invited review). PMID:26432992.
76. Reizman, I.M.B., A.R. Stenger, C.R. Reisch, A. Gupta, N.C. Connors, K.L.J. Prather. 2015. "Improvement of glucaric acid production in *E. coli* via dynamic control of metabolic fluxes." *Metab. Eng. Comm.* **2**:109-116, DOI: 10.1016/j.meteno.2015.09.002. PMID:26478859.

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78. Pflieger, B.F. and K.L.J. Prather. 2015. "Biological synthesis unbounded?" *Nat. Biotechnol.* **33**(11):1148-1149. PMID:26544145.
79. Sheppard, M.J.*, A.M. Kunjapur*, K.L.J. Prather. 2016. "Modular and selective biosynthesis of gasoline-range alkanes." *Metab. Eng.* **33**:28-40, DOI: 10.1016/j.ymben.2015.10.010. (*equal contribution). PMID:26556131.
80. Tan, S.T., S. Manchester, K.L.J. Prather. 2016. "Controlling central carbon metabolism for improved pathway yields in *Saccharomyces cerevisiae*." *ACS Syn. Biol.* **5**(2):116-124, DOI: 10.1021/acssynbio.5b00164. PMID:26544022.
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104. Dinh, C.V., X. Chen, K.L.J. Prather. 2020. "Development of a quorum-sensing based circuit for control of co-culture population composition in a naringenin production system." *ACS Synth. Biol.* **9**(3):590-597. DOI: 10.1021/acssynbio.9b00451.
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106. Prather, K.L.J. 2020 "Accelerating and expanding nature to address its greatest challenges." *Nat. Catal.* **3**:181-183. DOI: 10.1038/s41929-020-0422-4.
107. Dinh, C.V. and K.L.J. Prather. 2020. "Layered and multi-input autonomous dynamic control strategies for metabolic engineering." *Curr. Opin. Biotechnol.* **65**: 156-162. DOI: 10.1016/j.copbio.2020.02.015.
108. Fox, K.J. and K.L.J. Prather. 2020. "Carbon catabolite repression relaxation in *Escherichia coli*: global and sugar-specific methods for glucose and secondary sugar co-utilization." *Curr. Opin. Chem. Eng.* **30**:9-16. DOI: 10.1016/j.coche.2020.05.005
109. Marques, W.L., L.A. Anderson, L. Sandoval, M.A. Hicks, K.L.J. Prather. 2020. "Sequence-based bioprospecting of myo-inositol oxygenase (Miox) reveals new homologues that increase glucaric acid production in *Saccharomyces cerevisiae*." *Enzyme Microb. Technol.* **140**: 109623. DOI: 10.1016/j.enzmictec.2020.109623.
110. Fox, K.J. and K.L.J. Prather. 2020. "Production of D-glyceric acid from D-galacturonate in *Escherichia coli*." *J. Ind. Microbiol. Biotechnol.* **47**:1075-1081. DOI: 10.1007/s10295-020-02323-2.
111. Zu, Y., K.L.J. Prather, G. Stephanopoulos. 2020. "Metabolic engineering strategies to overcome precursor limitations in isoprenoid biosynthesis," *Curr. Opin. Biotechnol.* **66**:171-178. DOI: 10.1016/j.copbio.2020.07.005.
112. Cleto S., K. Haslinger, K.L.J. Prather, T. K. Lu. *in press*. "Natural combinatorial genetics and prolific polyamine production enable siderophore diversification in *Serratia plymuthica*." *BMC Biol.* DOI: 10.1186/s12915-021-00971-z.
113. Ni, C., C.V. Dinh, K.L.J. Prather. *in press*. "Dynamic control of metabolism." *Annu. Rev. Chem. Biomol. Eng.* DOI: 10.1146/annurev-chembioeng-091720-125738.
114. Vila-Santa, A., M.A. Islam, F.C. Ferreira, K.L.J. Prather, N.P. Mira. *in press*. "Prospecting biochemical pathways to implement microbe-based production of the new-to-nature platform chemical levulinic acid." *ACS Synth. Biol.* DOI: 10.1021/acssynbio.0c00518.

115. Almeida, B.C., J.A. Kaczmarek, P.R. Figueiredo, K.L.J. Prather, Alexandra T. P. Carvalho. *in press*. "Transcription factor allosteric regulation through substrate coordination to zinc." *NAR Genom. Bioinform.* DOI: 10.1093/nargab/lqab033.
116. Ni, C., K.J. Fox, K.L.J. Prather. *in press*. "Substrate-Activated Expression of a Biosynthetic Pathway in *Escherichia coli*." *Biotechnol. J.* DOI: 10.1002/biot.202000433.

Patents

1. "Methods for microbial production of terpenoids." US Patent No. 8,062,878. Issued November 22, 2011
2. "Microbial production of 3-hydroxyacids from glucose and glycolate." US Patent No. 8,361,760. Issued January 29, 2013
3. "Microbial production of 3,4-dihydroxybutyrate (3,4-DHBA), 2,3- dihydroxybutyrate (2,3-DHBA) and 3-hydroxybutyrolactone (3-HBL)." US Patent No. 8,669,379. Issued March 11, 2014
4. "Glucose valve and other metabolite valves." US Patent No. 8,835,138. Issued September 16, 2014.
5. "Cellular production of glucaric acid through recombinant expression of uronate dehydrogenase and *myo*-inositol oxygenase." US Patent No. 8,835,147. Issued September 16, 2014.
6. "Microbial production of branched medium chain alcohols, such as 4-methylpentanol." US Patent No 10,100,335. Issued October 16, 2018.
7. "Microbial system for biosynthesis of natural and engineered products coupled to *in situ* extraction in supercritical CO₂." US Patent No 10,941,379. Issued March 9, 2021.

Invited Lectures

1. Biological Engineering Division, MIT, October 6, 2005
2. Office of Naval Research Green Synthesis Review Meeting, January 9, 2006
3. Department of Chemistry, University of Massachusetts-Boston, May 3, 2006
4. US-UK Biocatalysis Conference, British Consulate, Cambridge, MA, May 26, 2006
5. Department of Biochemical Engineering, University College London, England, UK, September 27, 2006
6. UK Global Watch Biocatalysis Mission Dissemination Day, York, England, UK, September 28, 2006
7. Annual Biomedical Research Conference for Minority Students (ABRCMS), Scientific Session Speaker, Nov 9, 2006
8. Informa IBC/Informa Learning Conference on Synthetic Biology, March 27, 2007
9. Department of Microbiology & Immunology/PREP Program, University of Rochester, April 16, 2007

10. Department of Biological Sciences, Carnegie Mellon University, October 10, 2007
11. Institute for Genomic Biology Symposium, Keynote Speaker, University of Illinois at Urbana-Champaign, April 5, 2008
12. MIT Club of South Texas, Houston, TX, May 13, 2008
13. Synthetic Biology 4.0, Hong Kong University of Science and Technology, October 10, 2008
14. Department of Chemical and Biomolecular Engineering, Hong Kong University of Science and Technology, October 13, 2008
15. European-American Innovation Day, Boston, MA, December 3, 2008
16. Advances in Synthetic Biology 2009, London, UK, April 29, 2009
17. 3rd Summit on System Biology: The Microbial World and Beyond, Richmond, VA, June 17, 2009
18. BIO World Congress on Industrial Biotechnology and Bioprocessing, Montreal, QC, Canada, July 21, 2009
19. Society for Industrial Microbiology 2009 Annual Meeting, Toronto, ON, Canada, July 27, 2009
20. Department of Chemical Engineering, University of Massachusetts Amherst, September 29, 2009
21. Topics in Bioengineering Seminar Series, School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, October 20, 2009
22. Ontario Genomics Institute-IDT Synthetic Biology Symposium, Toronto, ON, Canada, October 27, 2009
23. American Society for Gravitational and Space Biology Annual Meeting, Raleigh, NC, November 7, 2009
24. Department of Chemistry, Wellesley College, Wellesley, MA, November 23, 2009
25. Brookhaven National Laboratory, Upton, NY, January 8, 2010
26. MIT in Japan Conference, Tokyo, Japan, January 22, 2010
27. Mathematical Biosciences Institute (MBI) Workshop on Synthetic Biology, Columbus, OH, January 27, 2010
28. Symposium on The Application of Synthetic Biology to Biofuel Production, University of Alberta, Edmonton, Calgary, Canada, May 21, 2010
29. American Society for Microbiology 2010 Annual Meeting, San Diego, CA, May 25, 2010
30. Society for Industrial Microbiology 2010 Annual Meeting, San Francisco, CA, August 4, 2010
31. Biotechnology Seminar Series, Biotechnology Training Program, Northwestern University, Evanston, IL, September 1, 2010

32. Department of Chemical and Biological Engineering, Iowa State University, Ames, IA, September 2, 2010
33. National Academy of Science Kavli Frontiers in Science Symposium, Irvine, CA, November 6, 2010
34. American Institute of Chemical Engineers (AIChE), Special Session in honor of Dr. Fred Heineken, Salt Lake City, UT, November 9, 2010
35. Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, December 2, 2010
36. Institute of Chemical Sciences and Engineering, École Polytechnique Fédérale de Lausanne, Switzerland, December 13, 2010
37. International Conference on Synthetic Biology, Evry, France, December 16, 2010
38. IDEASlab, World Economic Forum, Davos, Switzerland, January 26, 2011
39. 2nd Annual Bio-Based Chemicals Summit, San Diego, CA, February 14, 2011
40. Department of Chemical Engineering, Texas Tech University, Lubbock, TX, April 8, 2011
41. Department of Biochemistry and Molecular Biology, University of Chicago, Chicago, IL, April 27, 2011
42. Biology by Design Symposium, Northwestern University, Evanston, IL, May 11, 2011
43. American Society for Microbiology Annual Meeting, New Orleans, LA, May 24, 2011
44. Systems & Synthetic Biology Workshop, University of Minho, Braga, Portugal, June 6, 2011
45. Biochemical Engineering Journal Young Investigator Award Presentation, Biochemical Engineering Conference, Seattle, WA, June 26, 2011
46. 2011 Gordon Research Conference on Enzymes, Coenzymes and Metabolic Pathways, Waterville Valley, NH, July 12, 2011
47. GlaxoSmithKline, Inc., King of Prussia, PA, August 23, 2011
48. National Science Foundation Catalysis Workshop, Denver, CO, August 27, 2011
49. 242nd American Chemical Society National Meeting, Denver, CO, August 29, 2011
50. 2011 IEEE Engineering in Medicine and Biology Conference, Boston, MA, August 2011
51. Horizons in Molecular Biology Conference, Göttingen, Germany, September 17, 2011
52. Department of Chemical & Biomolecular Engineering, University of Illinois at Urbana-Champaign, September 27, 2011
53. ESF-EMBO Symposium on 'Synthetic Biology of Antibiotic Production', Sant Feliu de Guixols, Spain, October 6, 2011

54. Department of Chemical Engineering, Texas A&M University, College Station, Texas, November 2, 2011
55. Department of Chemical and Biomolecular Engineering, Rice University, Houston, Texas, November 3, 2011
56. Keynote Speaker, 2011 Samsung Tech Conference, Seoul, Republic of Korea, November 8, 2011
57. Department of Chemical Engineering, Stanford University, Palo Alto, CA, November 14, 2011
58. DSM/Microbia Precision Engineering, Lexington, MA, November 16, 2011
59. CCB (Chemistry and Chemical Biology Graduate Program)/iPQB (Integrative Program in Quantitative Biology) Seminar Series, University of California, San Francisco, January 19, 2012
60. Department of Chemical and Biological Engineering, University of Wisconsin-Madison, April 10, 2012
61. Microbial Sciences Symposium, Harvard University, Cambridge, MA, April 14, 2012
62. "Supermodel Genetics: Chemical Screens and Synthetic Genomes" conference, The Royal Society (London), London, UK, April 20, 2012
63. Department of Chemical Engineering, University of Delaware, Newark, DE, April 27, 2012
64. Department of Chemistry, Princeton University, Princeton, NJ, May 3, 2012
65. Pfizer Fermentation Summit, Madison, NJ, June 12, 2012
66. Keynote Speaker, Gordon Research Seminar on Biocatalysis, Smithfield, RI, July 7, 2012
67. 2012 Gordon Research Conference on Biocatalysis, Smithfield, RI, July 10, 2012
68. IDEASlab, World Economic Forum, Tianjin, China, September 11, 2012
69. Donald Danforth Plant Science Center 14th Annual Fall Symposium, St. Louis, MO, September 27, 2012.
70. Department of Chemistry, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal, October 3, 2012.
71. Van Ness Lecture, Department of Chemical & Biological Engineering, Rensselaer Polytechnic Institute, Troy, NY, October 17-18, 2012.
72. Department of Biochemistry, Biophysics & Molecular Biology, Iowa State University, Ames, IA, October 25, 2012.
73. Topics in Bioengineering Seminar Series, School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, November 6, 2012.
74. Department of Chemical & Biochemical Engineering, Ohio State University, Columbus, OH, November 8, 2012.

75. Frontiers in Systems and Synthetic Biology '13, Atlanta, GA, March 23, 2013.
76. School of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY, April 18, 2013.
77. American Society for Biochemistry and Molecular Biology (ASBMB) 2013 Annual Meeting, Boston, MA, April 23, 2013.
78. GlaxoSmithKline Global Chemistry Conference, Boston, MA, April 23, 2013.
79. 3rd Copenhagen Bioscience Conference, "Cell Factories and Biosustainability," Copenhagen, Denmark, May 7, 2013.
80. Council for Chemistry Research Annual Meeting, Alexandria, VA, May 20, 2013
81. Federation of European Microbiological Societies (FEMS) 2013 Congress, Leipzig, Germany, July 21, 2013.
82. Women in the Life Sciences Seminar, International Giessen Graduate Centre for the Life Sciences (GGL), Justus-Liebig-University Giessen, Germany, July 25, 2013.
83. Synthetic Biology Session, Society for Industrial Microbiology and Biotechnology Annual Meeting, San Diego, CA, August 12, 2013.
84. Synthetic Genomics, LaJolla, CA, August 14, 2013.
85. Biocatalysis Session, Society for Industrial Microbiology and Biotechnology Annual Meeting, San Diego, CA, August 15, 2013.
86. Enzyme Engineering XII, Toyoma, Japan, September 24, 2013.
87. Keynote Lecture, Jülich Biotech Day, Jülich, Germany, October 11, 2013.
88. Chemical Engineering Department, Columbia University, New York, NY, October 22, 2013.
89. Department of Chemistry, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal, January 29, 2014.
90. School of Chemical, Biological & Materials Engineering, University of Oklahoma, Norman, OK, February 20, 2014.
91. Women of BIOT Symposium, American Chemical Society Spring Annual Meeting, March 16, 2014.
92. Keynote Lecture, Upstream Processes Symposium, Biochemical Technology Division, American Chemical Society Spring Annual Meeting, March 17, 2014.
93. LOEWE Center for Synthetic Microbiology Symposium on Microbial formation of Biofuels and Platform Biochemicals, Marburg, Germany, May 7, 2014.
94. American Society for Microbiology Annual Meeting, Boston, MA, May 19, 2014.
95. Metabolic Engineering X, Vancouver, BC, Canada, June 16, 2014.

96. BASF, Tarrytown, NY, July 9, 2014.
97. Department of Microbiology/Immunology, Loyola University, Chicago, IL, September 11, 2014.
98. Department of Chemical Engineering, The Pennsylvania State University, University Park, PA, September 18, 2014.
99. Department of Chemical and Biological Engineering, Tufts University, Medford, MA, September 22, 2014.
100. John Innes Center, Norwich, UK, October 3, 2014.
101. Plenary Speaker, 4th International Conference on Novel Enzymes, Ghent, Belgium, October 15, 2014.
102. Keynote Lecture, 16th EMBL-PhD Symposium, Heidelberg, Germany, October 25, 2014.
103. Dr. Bruce J. Nelson '74 Distinguished Speaker Series, Harvey Mudd College, Claremont, CA, November 4, 2014.
104. Merck Lectureship in Chemical Engineering, University of Virginia, Charlottesville, VA, November 6, 2014.
105. 2015 Keystone Symposia on Precision Genome Engineering and Synthetic Biology, January 15, 2015.
106. Department of Chemical & Biological Engineering, Colorado State University, Ft. Collins, CO, February 6, 2015.
107. Lloyd N. Ferguson Lectures, California State University Los Angeles, CA, February 12-13, 2014.
108. American Physical Society March Meeting, San Antonio, TX, March 4, 2015.
109. 2015 Synthetic Biology: Engineering, Evolution & Design (SEED) Conference, Boston, MA, June 11, 2015.
110. Biotechnology Industry Organization (BIO) International Convention (Panelist), Philadelphia, PA, June 16, 2015.
111. Bristol-Myers Squibb, Hopkinton, MA, June 25, 2015.
112. Keynote Speaker, 7th Annual Chemical Biology Interface Summer Retreat, Departments of Chemistry and Biochemistry & Molecular Biophysics, University of Pennsylvania, Villanova, PA, July 7, 2015.
113. Biochemical and Molecular Engineering XIX, Puerto Vallarta, Mexico, July 13, 2015.
114. ECAB3 – 3rd European Conference of Applied Biotechnology, Nice, France, October 1, 2015.
115. ProkaGENOMICS 2015, (6th European Conference on Prokaryotic and Fungal Genomics), Göttingen, Germany, October 2, 2015.

116. Department of Chemical Engineering, University of Washington, Seattle, WA, October 26, 2015.
117. Department of Chemistry, University of California, Davis, CA, October 27, 2015.
118. 2015 National Association of Biology Teachers Professional Development Conference, Providence, RI, November 12, 2015.
119. Pacifichem 2015 (The International Chemical Congress of Pacific Basin Societies), Honolulu, HI, December 17, 2015.
120. American Association for the Advancement of Science (AAAS) Annual Meeting, Washington, DC, February 11, 2016.
121. 2016 Academic Research and Leadership Network Research Symposium, Cambridge, MA, March 25, 2016.
122. Martin H. Freeman Lecture (inaugural lecture), Middlebury College, Middlebury, VT, April 8, 2016.
123. Metabolic Engineering XI, Kobe, Japan, June 29, 2016.
124. Society for Industrial Microbiology & Biotechnology Annual Meeting, New Orleans, LA, July 25, 2016.
125. American Chemical Society (ACS) Green Chemistry Institute (GCI) Pharmaceutical Roundtable Symposium, Cambridge, MA, October 13, 2016.
126. 17th International Biotechnology Symposium – IBS2016, Melbourne, Australia, October 24, 2016.
127. Division 15C Invited Lecture, American Institute of Chemical Engineers (AIChE) Annual Meeting, San Francisco, CA, November 2016.
128. Novozymes Prize Symposium, Novo Nordisk Foundation, Copenhagen, Denmark, November 21, 2016.
129. 7th International Conference on Biomolecular Engineering (ICBE), San Diego, CA, January 9, 2017.
130. Biogen, 2017 Biogen Black History Month Pioneer Seminar Series, Cambridge, MA, February 23, 2017.
131. Nano @ Wayne Seminar Series, Wayne State University, Detroit, MI, April 18, 2017.
132. Hampton University, Partnership for Research and Education in Materials (PREM) Seminar Series, Hampton, VA, April 28, 2017.
133. Department of Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, St. Paul, MN, September 14, 2017.
134. Metabolic Engineering Summit 2017, Beijing, China, October 24, 2017.

135. Department of Chemical and Biological Engineering, University of Colorado at Boulder, January 23, 2018.
136. 6th Annual Winter q-bio Meeting, Wailea, HI, February 22, 2018.
137. Keynote Speaker, Joint Genome Institute Annual User Meeting, San Francisco, CA, March 16, 2018.
138. Lectures at the Leading Edge, Department of Chemical Engineering & Applied Chemistry, University of Toronto, Canada, March 28, 2018.
139. Synthetic Biology Mini-Symposium, Department of Biochemistry & Molecular Biology, University of Georgia, Athens, GA, April 6, 2018.
140. Department of Chemical and Biological Engineering, Iowa State University, Ames, IA, April 26, 2018.
141. Advances in Biotechnology, Northwestern University, Evanston, IL, May 2, 2018.
142. Department of Chemical and Biological Engineering, Northwestern University, Evanston, IL, May 3, 2018.
143. Department of Chemical Engineering, Worcester Polytechnic Institute, May 9, 2018.
144. Department of Chemical Engineering, University of California, Santa Barbara, May 22, 2018.
145. Metabolic Engineering XII, München, Germany, June 25, 2018.
146. 18th European Congress on Biotechnology, July 4, 2018.
147. Plenary Lecture, 2018 Gordon Research Conference on Biocatalysis, Biddeford, ME, July 19, 2018.
148. Society for Industrial Microbiology & Biotechnology Annual Meeting, Chicago, IL, August 14, 2018.
149. Synthetic Biology: The State of the Science Symposium, 256th American Chemical Society National Meeting, Boston, MA, August 20, 2018.
150. Copenhagen Plant Science Center, University of Copenhagen, Denmark, August 23, 2018.
151. Synthetic Biology for Defense Workshop, Arlington, VA, September 27, 2018.
152. Annual Biomedical Research Conference for Minority Students (ABRCMS) 2018 Meeting, Indianapolis, IN, November 15, 2018.
153. Department of Chemical & Biological Engineering, Colorado School of Mines, Golden, CO, February 1, 2019.
154. 2nd Israeli Synthetic Biology Meeting, Weizmann Institute of Technology, Rehovot, Israel, March 11, 2019.

155. American Chemical Society, BIOT Division Keynote, Orlando, FL, March 31, 2019.
156. Davidson School of Chemical Engineering, Purdue University, West Lafayette, IN, April 9, 2019.
157. Department of Chemical and Biomolecular Engineering, Tulane University, New Orleans, LA, April 12, 2019.
158. Department of Chemical and Biological Engineering, Princeton University, Princeton, NJ, May 7, 2019.
159. Daesung Haegang Microbes Forum, Seoul, South Korea, June 20, 2019.
160. Korean Society for Microbiology and Biotechnology (KMB), 46th Annual Meeting, Jeju Island, South Korea, June 25, 2019.
161. Biochemical and Molecular Engineering XX1, Mont Tremblant, QC, Canada, July 18, 2019.
162. Society for Industrial Microbiology & Biotechnology (SIMB) 2019 Annual Meeting, Washington, DC, July 24, 2019.
163. EMBO Practical Course: Synthetic Biology in Action, Heidelberg, Germany, September 20, 2019.
164. Thinking Out Loud Presidential Colloquium Series, Brown University, Providence, RI, October 9, 2019.
165. AfroBiotech Conference, Atlanta, GA, October 28, 2019.
166. Department of Bioengineering, University of Illinois, Urbana-Champaign, IL, October 30, 2019.
167. School for Engineering of Matter, Transport and Energy, Arizona State University, Tempe, AZ, November 4, 2019.
168. Division 15c Keynote Lecture, American Institute of Chemical Engineers (AIChE) Annual Meeting, Orlando, FL, November 11, 2019.
169. 2019 Climate Change Workshop, Boston University, Boston, MA, December 3, 2019.
170. University of Washington Genome Sciences Symposium (virtual), November 13, 2020.
171. The Metabolic Engineering Virtual Seminar Series Hosted by The Alper Laboratory at UT-Austin, January 15, 2021.
172. Department of Chemical Engineering, University of Massachusetts-Amherst (virtual), January 26, 2021.

Contributed Conference Presentations

1. *AIChE Annual Meeting, Los Angeles, CA, Nov. 1997.* Poster: “Using mRNA Stabilization to Enhance Prokaryotic Protein Synthesis.” Trent A. Carrier [Speaker], Kristala L. Jones, and Jay D. Keasling

2. *AICHE Annual Meeting, Los Angeles, CA, Nov. 1997.* Paper: “Construction, Stability, and Expression of Low-Copy Vectors Derived from the *E. coli* F Plasmid.” Kristala L. Jones [Speaker] and Jay D. Keasling.
3. *NOBCCHE Annual Meeting, Dallas, TX, April 1998.* Paper: “Development of Low-Copy Mini-F Vectors for Long-Term Gene Expression in *Escherichia coli*” Kristala L. Jones [Presenter] and Jay D. Keasling.
4. *AICHE Annual Meeting, Miami Beach, FL, Nov. 1998.* Paper: “Plasmid Vehicles for Long-Term, Variable Gene Expression in *Escherichia coli*.” Kristala L. Jones [Speaker], Trent A. Carrier, and Jay D. Keasling.
5. *Biochemical Engineering XIII, Boulder, CO, July 2003.* Poster: Characterization of structural plasmid instability through multiplex quantitative PCR. Jerrell W. Herod and Kristala L. Jones Prather [Presenter]
6. *The Waterside Conference: Process Development and Production Issues for Monoclonal & Recombinant Antibodies, Beverly Hills, CA, May 2004.* Poster: Development of transfection and selection protocols for high expression of monoclonal antibodies in GS/CHOK1SV and DHFR-CHO cells. M. Celina Edmonds [Presenter], Kristala L. Jones Prather, Krista Alvin, Lily Chu, Peter M. Salmon, David K. Robinson
7. *American Chemical Society Fall Annual Meeting, September 2006.* Paper: “Novel pathways for the microbial production of organic compounds.” Kristala Jones Prather [Presenter], Collin Martin, Pooya Iranpour, Tae Seok Moon
8. *Metabolic Engineering VI, The Netherlands, October 2006.* Poster: “Novel Pathway Design for Microbial Production of Organic Compounds.” Kristala Jones Prather [Presenter], Collin Martin, Pooya Iranpour, Tae Seok Moon
9. *AICHE Annual Meeting, San Francisco, CA, November 2006.* Poster: “Development of a database tool for novel biosynthetic pathway design.” Wei Chan, Amanda Lanza, Kristala Jones Prather [Presenter]
10. *AICHE Annual Meeting, San Francisco, CA, November 2006.* Poster: “ ‘Retro-biosynthetic’ design for the microbial production of an organic compound.” Collin Martin [Presenter] and Kristala Jones Prather
11. *Biochemical Engineering XV, Quebec City, QC, Canada, July 2007.* Poster: “Towards microbial synthesis of glucaric acid.” Tae Seok Moon, Pooya Iranpour, Amanda Lanza, Leah Octavio, Kristala Jones Prather [Presenter]
12. *American Chemical Society Fall Annual Meeting, Boston, MA, August 2007.* Paper: “Towards microbial synthesis of glucaric acid.” Tae Seok Moon [Presenter], Pooya Iranpour, Amanda Lanza, Leah Octavio, Kristala Jones Prather
13. *American Chemical Society Fall Annual Meeting, Boston, MA, August 2007.* Poster: “ReBit: a database for enzymatic pathway design.” Collin Martin [Presenter] and Kristala Jones Prather
14. *AICHE Annual Meeting, Salt Lake City, UT, November 2007.* Paper: “Towards microbial synthesis of glucaric acid.” Tae Seok Moon [Presenter], Sang-Hwal Yoon, Leah Octavio, Kristala Jones Prather

15. *AICHE Annual Meeting, Salt Lake City, UT, November 2007*. Poster: “*Pseudomonas putida* as a platform for C5 hydroxyacid and lactone synthesis.” Collin Martin [Presenter] and Kristala Jones Prather
16. *Society for Industrial Microbiology, 30th Symposium on Biotechnology for Fuels and Chemicals, New Orleans, LA, May 2008*. Paper: “*De novo* biocatalyst design: an alternative strategy for the petroleum-free synthesis of biofuels.” Effendi Leonard [Presenter] and Kristala Jones Prather
17. *American Society for Microbiology Annual Meeting, Boston, MA, June 2008*. Poster: “*De novo* biocatalyst design: an alternative strategy for the petroleum-free synthesis of biobutanol.” Effendi Leonard [Presenter] and Kristala Jones Prather
18. *Vaccine Technology II, Albufeira, Portugal, June 2008*. Poster: “Rational engineering of an *E. coli* host strain for production of pharmaceutical-grade plasmid DNA.” Diana M. Bower [Presenter] and Kristala Jones Prather
19. *American Chemical Society Fall Annual Meeting, Philadelphia, PA, August 2008*. Paper: “Engineering microbial production of glucuronic and glucaric acids.” Tae Seok Moon [Presenter], Sang-Hwal Yoon, and Kristala Jones Prather
20. *American Chemical Society Fall Annual Meeting, Philadelphia, PA, August 2008*. Paper: “High-Titer Production of Hydroxyvalerates from Levulinate.” Collin Martin and Kristala Jones Prather
21. *Metabolic Engineering VII, Puerto Vallarta, Mexico, September 2008*. Poster: “Microbial synthesis of glucaric and hydroxyvaleric acids.” Collin Martin, Tae Seok Moon, Sang-Hwal Yoon, and Kristala Jones Prather [Presenter]
22. *Metabolic Engineering VII, Puerto Vallarta, Mexico, September 2008*. Poster: “Engineering n-butanol production in bacteria.” David Nielsen [Presenter], Effendi Leonard, Sang-Hwal Yoon, Hsien-Chung Tseng, and Kristala Jones Prather
23. *AICHE Annual Meeting, Philadelphia, PA, November 2008*. Paper: “Biological production of hydroxyacids from renewable sources.” Collin Martin, Hsien-Chung Tseng, and Kristala Jones Prather [Presenter]
24. *AICHE Annual Meeting, Philadelphia, PA, November 2008*. Paper: “Engineering microbial production of glucaric acid.” Tae Seok Moon, Sang-Hwal Yoon, and Kristala Jones Prather [Presenter]
25. *AICHE Annual Meeting, Philadelphia, PA, November 2008*. Paper: “Design of *in situ* product recovery devices using polymeric resins.” David Nielsen [Presenter] and Kristala Jones Prather
26. *AICHE Annual Meeting, Philadelphia, PA, November 2008*. Poster: “Metabolic engineering of n-butanol production in bacteria.” David Nielsen [Presenter], Effendi Leonard, Sang-Hwal Yoon, and Kristala Jones Prather
27. *Biochemical Engineering XVI, Burlington, VT, July 2009*. Poster: “Microbial synthesis of glucaric and hydroxyvaleric acids.” Collin Martin, Tae Seok Moon, Sang-Hwal Yoon, John Dueber, and Kristala Jones Prather [Presenter]
28. *Biotechnology Industry Organization (BIO) World Congress on Industrial Biotechnology and Bioprocessing, Montreal, QC, Canada, July 2009*. Oral: “Rational design of microbial chemical

factories: enzymes as interchangeable parts.” Tae Seok Moon, Sang-Hwal Yoon, John E. Dueber, and Kristala Jones Prather [Presenter]

29. *American Chemical Society Fall Annual Meeting, Washington, DC, August 2009*. Oral: “Enhancing production of glucaric acid from a synthetic pathway in recombinant *Escherichia coli*.” Tae Seok Moon [Presenter], John E. Dueber, Sang-Hwal Yoon, Eric Shiue, and Kristala Jones Prather

30. *American Chemical Society Fall Annual Meeting, Washington, DC, August 2009*. Oral: “Biosynthesis of 3,4-dihydroxybutyric acid and 3-hydroxybutyrolactone in *Escherichia coli* from glucose and glycolate.” Collin Martin [Presenter] and Kristala Jones Prather

31. *American Chemical Society Fall Annual Meeting, Washington, DC, August 2009*. Poster: “Production of enantiopure hydroxyacids in recombinant *Escherichia coli*.” Hsien-Chung Tseng [Presenter], Collin H. Martin, David R. Nielsen, and Kristala Jones Prather

32. *American Chemical Society Fall Annual Meeting, Washington, DC, August 2009*. Poster: “Integrated bioprocessing for the pH-dependent production of 4-valerolactone in *Pseudomonas putida*.” Collin H. Martin [Presenter], Danyi Wu, and Kristala Jones Prather

33. *American Chemical Society Fall Annual Meeting, Washington, DC, August 2009*. Poster: “Computational design and selection of glucose oxidase.” Tae Seok Moon, Shaun M. Lippow, Subhayu Basu, Sang-Hwal Yoon, Xiazhen Li, Brad Chapman, Keith Robison, Daša Lipovšek, and Kristala Jones Prather

34. *AICHE Annual Meeting, Nashville, TN, November 2009*. Oral: “Integrated bioprocessing for the production of hydroxyvalerates and 4-valerolactone in *Pseudomonas putida*.” Collin H. Martin [Presenter], Danyi Wu, and Kristala Jones Prather

35. *AICHE Annual Meeting, Nashville, TN, November 2009*. Oral: “Biosynthesis of 3-hydroxyalkanoic acids and lactones in *Escherichia coli*.” Collin Martin [Presenter], Hsien-Chung Tseng, and Kristala Jones Prather

36. *AICHE Annual Meeting, Nashville, TN, November 2009*. Oral: “Enhancing production of glucaric acid from a synthetic pathway in recombinant *Escherichia coli*.” Tae Seok Moon [Presenter], John E. Dueber, Sang-Hwal Yoon, Eric Shiue, and Kristala Jones Prather

37. *AICHE Annual Meeting, Nashville, TN, November 2009*. Oral: “Adsorption of second generation biofuels using polymer resins with *in situ* product recovery (ISPR) applications.” David R. Nielsen [Presenter] and Kristala Jones Prather

38. *AICHE Annual Meeting, Nashville, TN, November 2009*. Poster: “Computational design and selection of glucose oxidase.” Tae Seok Moon [Presenter], Shaun M. Lippow, Subhayu Basu, Sang-Hwal Yoon, Xiazhen Li, Brad Chapman, Keith Robison, Daša Lipovšek, and Kristala Jones Prather

39. *AICHE Annual Meeting, Nashville, TN, November 2009*. Poster: “Production of enantiopure hydroxyacids in recombinant *Escherichia coli*.” Hsien-Chung Tseng, Collin H. Martin [Presenter], David R. Nielsen, and Kristala Jones Prather

40. *AICHE Annual Meeting, Nashville, TN, November 2009*. Poster: “Synthesis of acetoin and 2,3-butanediol by engineered *Escherichia coli*.” David R. Nielsen [Presenter], Sang-Hwal Yoon, and Kristala Jones Prather

41. *American Chemical Society Spring Annual Meeting, San Francisco, CA, March 2010.* Oral: “Biosynthesis of 3-hydroxyalkanoic acids and lactones in *Escherichia coli*.” Collin Martin, Himanshu Dhamankar, Hsien-Chung Tseng, Jeffrey Mo and Kristala Jones Prather [Presenter]
42. *American Chemical Society Spring Annual Meeting, San Francisco, CA, March 2010.* Oral: “Metabolic engineering of *Escherichia coli* for production of chiral hydroxyacids.” Hsien-Chung Tseng [Presenter], Catey Harwell, Collin Martin, David Nielsen, and Kristala Jones Prather
43. *Metabolic Engineering VIII, Jeju Island, Republic of Korea, June 2010.* Oral: “Improving productivity of microbial chemical factories using synthetic biology devices.” Kristala L. J. Prather
44. *Metabolic Engineering VIII, Jeju Island, Republic of Korea, June 2010.* Poster: “Biosynthesis of 3-Hydroxyalkanoic Acids and Lactones in *Escherichia coli*.” Collin H. Martin, Hsien-Chung Tseng, Himanshu Dhamankar, and Kristala L. J. Prather [Presenter]
45. *AIChE Annual Meeting, Salt Lake City, UT, November 2010.* Oral: “Engineering terpenoid biosynthetic pathway for overproduction and selectivity control.” Parayil Ajikumar [Presenter], Effendi Leonard, Kelly Thayer, Wen-Hai Xiao, Jeffrey D. Mo, Bruce Tidor, Gregory Stephanopoulos and Kristala Jones Prather
46. *AIChE Annual Meeting, Salt Lake City, UT, November 2010.* Oral: “Process design for plasmid dna production using microbioreactors.” Diana M. Bower [Presenter], Kevin Lee, Rajeev J. Ram, and Kristala L.J. Prather
47. *AIChE Annual Meeting, Salt Lake City, UT, November 2010.* Oral: “Microbial production of high value-added chiral hydroxyacids.” Hsien-Chung Tseng [Presenter], Catey L. Harwell, and Kristala L.J. Prather
48. *AIChE Annual Meeting, Salt Lake City, UT, November 2010.* Oral: “A glucose valve for pathway engineering.” Kevin V. Solomon [Presenter], Tae Seok Moon, and Kristala L.J. Prather
49. *International Conference on Synthetic Biology, Evry, France, December 2010.* Oral: “Glucose valves: a new device for pathway engineering.” Kevin V. Solomon [Presenter] and Kristala L. J. Prather
50. *American Chemical Society Spring Annual Meeting, San Francisco, CA, March 2011.* Oral: “Development of a new R1-based plasmid for DNA vaccine production.” Diana M. Bower [Presenter] and Kristala L. J. Prather
51. *American Chemical Society Spring Annual Meeting, San Francisco, CA, March 2011.* Oral: “Glucose valves: Tuning primary metabolism for heterologous production.” Kevin V. Solomon [Presenter], Tae Seok Moon, and Kristala L. J. Prather
52. *American Chemical Society Spring Annual Meeting, San Francisco, CA, March 2011.* Oral: “Biosynthesis of 3-hydroxy- γ -butyrolactone and 3,4-dihydroxybutyric acid in *Escherichiacoli* from glucose as a sole feedstock.” Himanshu Dhamankar [Presenter], Collin H. Martin, Kristala L. J. Prather
53. *Biochemical and Molecular Engineering XVII, Seattle, WA, June 2011.* Poster: “Tuning glycolysis for heterologous production.” Kevin V. Solomon [Presenter] and Kristala L. J. Prather
54. *AIChE Annual Meeting, Minneapolis, MN, October 2011.* Oral: “Dynamic tuning of glycolytic flux for heterologous production with a ‘Glucose Valve’.” Kevin V. Solomon [Presenter] and Kristala L.J. Prather

55. *AIChE Annual Meeting, Minneapolis, MN, October 2011*. Oral: “Pathway and host engineering for biosynthesis of 3-hydroxy- γ -butyrolactone and 3,4-dihydroxybutyric acid in *Escherichia coli*.” Himanshu Dhamankar [Presenter], Collin H. Martin, and Kristala L.J. Prather

56. *AIChE Annual Meeting, Minneapolis, MN, October 2011*. Oral: “Web-Lab: Enhancing the undergraduate engineering experience.” Cynthia Collins and Kristala L.J. Prather [Presenters]

57. *American Chemical Society Spring Annual Meeting, San Diego, CA, March 2012*. Oral: “Platform pathway for synthesis of hydroxyacids as value added products from biomass in *Escherichia coli*.” Himanshu Dhamankar [Presenter] and Kristala L. J. Prather

58. *American Chemical Society Spring Annual Meeting, San Diego, CA, March 2012*. Oral: “Process development for a new R1-based plasmid DNA vaccine vector.” Diana Bower [Presenter] and Kristala L. J. Prather

59. *Society for Industrial Microbiology & Biotechnology Annual Meeting, Washington, DC, August 2012*. Oral: “A platform pathway for the production of value-added chiral hydroxyacids.” Kristala L.J. Prather [Presenter], Himanshu Dhamankar, Collin H. Martin, Hsien-Chung Tseng, Micah J. Sheppard

60. *AIChE Annual Meeting, Pittsburgh, PA, October 2012*. Oral: “Improvement of D-glucaric acid production from a synthetic pathway in *Escherichia coli*.” Eric Shiue [Presenter] and Kristala L.J. Prather

61. *AIChE Annual Meeting, Pittsburgh, PA, October 2012*. Oral: “Platform pathway for the synthesis of 3-hydroxyacids as value-added products derived from biomass.” Himanshu Dhamankar [Presenter] and Kristala L.J. Prather

62. *4th International Conference on Biomolecular Engineering, Ft. Lauderdale, FL, January 2013*. Poster: “Strategies for increased D-glucaric acid production in *E.coli*.” Eric Shiue [Presenter] and Kristala Jones Prather

63. *4th International Conference on Biomolecular Engineering, Ft. Lauderdale, FL, January 2013*. Poster: “Platform pathway for the microbial synthesis of 3-hydroxyacids as value-added products.” Himanshu Dhamankar [Presenter] and Kristala L.J. Prather

64. *4th International Conference on Biomolecular Engineering, Ft. Lauderdale, FL, January 2013*. Poster: “Biosynthesis of branched fatty acids via a heterologous fatty acid synthase in *E. coli*.” Micah J. Sheppard [Presenter] and Kristala L.J. Prather

65. *American Chemical Society Spring Annual Meeting, New Orleans, LA, April 2013*. Oral: “Strategies for the improvement of glucaric acid production from a synthetic pathway in *E. coli*.” Eric Shiue [Presenter] and Kristala L. J. Prather

66. *American Chemical Society Spring Annual Meeting, New Orleans, LA, April 2013*. Oral: “Biosynthesis of branched short-chain fatty acids via a heterologous fatty acid synthase in *Escherichia coli*.” Micah J. Sheppard [Presenter] and Kristala L. J. Prather

67. *American Chemical Society Spring Annual Meeting, New Orleans, LA, April 2013*. Oral: “Exploring a versatile platform pathway for the biosynthesis of 3-hydroxyalkanoicacids as value-added products from biomass in *Escherichia coli*.” Himanshu Dhamankar [Presenter] and Kristala L. J. Prather

68. *Society for Industrial Microbiology & Biotechnology Annual Meeting, San Diego, CA, August 2013.* Poster: “A novel pathway for propionyl-CoA production in *E. coli*.” Christopher Reisch [Presenter], Catherine Fan, and Kristala L.J. Prather
69. *Society for Industrial Microbiology & Biotechnology Annual Meeting, San Diego, CA, August 2013.* Poster: “Engineering short-chain fatty acid biosynthesis using thioesterase substrate specificity.” Matthew McMahon [Presenter] and Kristala L.J. Prather
70. *AIChE Annual Meeting, San Francisco, CA, November 2013.* Oral: “Improving D-glucaric acid production in *E. coli* through directed evolution and delayed induction.” Eric Shiue [Presenter] and Kristala L.J. Prather
71. *AIChE Annual Meeting, San Francisco, CA, November 2013.* Oral: “Biosynthesis of a branched C6 fatty alcohol via a *de novo* pathway in *Escherichia coli*.” Micah J. Sheppard [Presenter], Spencer Wenck and Kristala L.J. Prather
72. *American Chemical Society Spring Annual Meeting, Dallas, TX, March 2014.* Oral: “Engineering *E. coli* for synthesis of aromatic aldehydes as products or intermediates under aerobic growth.” Aditya M. Kunjapur [Presenter] and Kristala L. J. Prather
73. *American Society for Microbiology Annual Meeting, Boston, MA, May 2014.* Oral: “Strategies and pathways for reduced 3C production in *E. coli*.” Christopher R. Reisch [Presenter] and Kristala L. J. Prather
74. *AIChE Annual Meeting, Atlanta, GA, November 2014.* Oral: “Dynamic knockdown of *E. coli* central metabolism for redirecting fluxes of primary metabolites.” Irene M. Brockman [Presenter] and Kristala L.J. Prather
75. *AIChE Annual Meeting, Atlanta, GA, November 2014.* Oral: “Synthesis and accumulation of aromatic and aliphatic aldehydes in an engineered strain of *Escherichia coli*.” Aditya M. Kunjapur [Presenter] and Kristala L.J. Prather
76. *Keystone Symposium on Precision Genome Engineering and Synthetic Biology, Big Sky, MT, January 2015.* Poster: “The no-SCAR (Scarless Cas9 Assisted Recombineering) Method for Genome Editing in *E. coli*.” Chris R. Reisch [Presenter] and Kristala L. J. Prather
77. *Keystone Symposium on Precision Genome Engineering and Synthetic Biology, Big Sky, MT, January 2015.* Poster: “Engineering *E. coli* for aldehyde synthesis.” Aditya M. Kunjapur [Presenter], Yekaterina Tarasova, and Kristala L. J. Prather
78. *American Chemical Society Spring Annual Meeting, Denver, CO, March 2015.* Oral: “Dynamic knockdown of *E. coli* central metabolism for redirecting fluxes of primary metabolites” Irene M. Brockman [Presenter] and Kristala L. J. Prather
79. *American Chemical Society Spring Annual Meeting, Denver, CO, March 2015.* Oral: “Biosynthesis of key gasoline-range alkanes using engineered *E. coli*.” Aditya M. Kunjapur [Presenter] and Kristala L. J. Prather
80. *American Society for Microbiology Annual Meeting, New Orleans, LA, May 2015.* Poster: “Optimization of an Engineered Metabolic Pathway by Kinetic Analysis of an *in vitro* Reconstituted Enzyme System.” Yekaterina Tarasova [Presenter], Brian Bonk, Bruce Tidor, and Kristala L. J. Prather

81. *AIChE Annual Meeting, Salt Lake City, UT, November 2015*. Oral: “Controlling central carbon metabolism for improved pathway yields.” Sue Zanne Tan [Presenter] and Kristala L.J. Prather

82. *AIChE Annual Meeting, San Francisco, CA, November 2016*. Oral: “Engineering an Environmentally-Isolated Bacterium for Continuous Biofuel Production and Recovery Under Supercritical CO₂.” Jason T. Boock [Presenter], Adam J. E. Freedman, Geoffrey Tompsett, Michael T. Timko, Janelle R. Thompson and Kristala L.J. Prather

83. *Department of Energy Genomic Sciences User Meeting, Washington D.C., February 2017*. Poster: “Systems biology towards a continuous platform for biofuels production: Engineering an environmentally-isolated *Bacillus* strain for biofuel production and recovery under supercritical CO₂.” Jason T. Boock [Presenter], Adam J. E. Freedman, Geoffrey Tompsett, Michael T. Timko, Kristala L.J. Prather and Janelle R. Thompson

84. *Joint Genome Institute Genomics of Energy and Environment Meeting, Walnut Creek, CA, March 2017*. Poster: "Assembly, screening, and functional characterization of glucaric acid pathway in model organisms *E. coli* and *S. cerevisiae*." Lisa A Anderson [Presenter], Lisa M. Guay [Presenter], Michael A. Hicks, Eric M. Young, Luis R. Sandoval, Christopher A. Voigt, and Kristala L.J. Prather

85. *Gordon Research Conference on Applied and Environmental Microbiology, South Hadley, MA, July 2017*. Poster: “Engineering an environmentally-isolated strain of *Bacillus megaterium* for biofuel production and recovery under supercritical CO₂.” Jason T. Boock [Presenter], Adam J. E. Freedman, Geoffrey Tompsett, Michael T. Timko, Kristala L.J. Prather and Janelle R. Thompson (Honorable mention poster)

86. *Metabolic Engineering Summit, Beijing, China, October 2017*. Poster: “Engineering an environmentally-isolated strain of *Bacillus megaterium* for biofuel production and recovery under supercritical CO₂.” Jason T. Boock [Presenter], Adam J. E. Freedman, Geoffrey Tompsett, Michael T. Timko, Janelle R. Thompson and Kristala L.J. Prather (2nd place poster)

87. *Metabolic Engineering Summit, Beijing, China, October 2017*. Poster: “Layered dynamic regulation for improving metabolic pathway productivity.” Stephanie Doong [Presenter], Apoorv Gupta and Kristala L.J. Prather

88. *Metabolic Engineering Summit, Beijing, China, October 2017*. Poster: "Improving Glucaric Acid Production by Alleviating Oxidative Stress in *E. coli*." Lisa M. Guay [Presenter] and Kristala L.J. Prather

89. *AIChE Annual Meeting, Minneapolis, MN, October 2017*. Oral: “Engineering an environmentally-isolated strain of *Bacillus megaterium* for biofuel production and recovery under supercritical CO₂.” Jason T. Boock [Presenter], Adam J. E. Freedman, Geoffrey Tompsett, Michael T. Timko, Janelle R. Thompson and Kristala L.J. Prather

90. *AIChE Annual Meeting, Minneapolis, MN, November 2017*. Oral: “Bioprospecting to discover keto-aryl reductases with enhanced specificity towards longer-chain, aliphatic substrates.” Jason T. Boock [Presenter], Yekaterina Tarasova and Kristala L.J. Prather

91. *AIChE Annual Meeting, Minneapolis, MN, November 2017*. Oral: “Layered dynamic regulation for improving metabolic pathway productivity.” Stephanie Doong [Presenter], Apoorv Gupta and Kristala L.J. Prather

92. *AIChE Annual Meeting, Minneapolis, MN, November 2017*. Oral: "Improving Glucaric Acid Production by Alleviating Oxidative Stress in *E. coli*." Lisa M. Guay [Presenter] and Kristala L.J. Prather
93. *EBRC Spring Retreat, Seattle, WA, March 2018*. Poster: "Layered dynamic regulation for improving metabolic pathway productivity." Stephanie J. Doong [Presenter], Apoorv Gupta, Kristala L.J. Prather
94. *Metabolic Engineering 12, Munich, Germany, June 2018*. Poster: "Layered dynamic regulation for improving metabolic pathway productivity." Stephanie J. Doong [Presenter], Apoorv Gupta, Kristala L.J. Prather
95. *EBRC Fall Retreat, Fort Collins, CO, September 2018*. Poster: "Development of a pathway-independent tool for autonomous and dynamic metabolic flux control." Christina V. Dinh [Presenter] and Kristala L. J. Prather
96. *8th Annual SBC @ MIT Symposium, Cambridge, MA, January 2019*. Oral: "Biosprospecting inositol oxidases (MIOX) for improved glucaric acid production in *Saccharomyces cerevisiae*." Wesley L. Marques [Presenter], Lisa A. Anderson, Michael A. Hicks, Kristala L.J. Prather
97. *EBRC Spring Retreat, Boston, MA, March 2019*. Poster: "Biosprospecting inositol oxidases (MIOX) for improved glucaric acid production in *Saccharomyces cerevisiae*." Wesley L. Marques [Presenter], Lisa A. Anderson, Michael A. Hicks, Kristala L.J. Prather
98. *EBRC Spring Retreat, Boston, MA, March 2019*. Poster: "Carbohydrate biosensors and strain engineering in *E. coli* for food waste utilization." Cynthia Ni [Presenter], Kevin J. Fox, Kristala L.J. Prather
99. *American Chemical Society Spring Annual Meeting, Orlando, FL, April 2019*. Oral: "Development of a quorum-sensing circuit for multiplexed metabolic flux control in engineered bacteria." Christina V. Dinh [Presenter] and Kristala L.J. Prather

Activities and Organizations

Advisory committees and service

- Member, National Academies' Committee on Enhancing the U.S. Chemical Economy through Investments in Fundamental Research in the Chemical Sciences (2020-2022)
- Member, World Economic Forum Global Future Council (GFC) on Synthetic Biology (2020-2021)
- Leadership Advisory Board, Spelman College Center of Excellence for Minority Women in STEM (COE-MWS) (2020-2021)
- Nominating Committee, Society for Industrial Microbiology & Biotechnology (2018-2019)
- Member, CSIRO Synthetic Biology Future Science Platform ("SynBio FSP") International Advisory Committee (Australia) (2018-2022)
- Member, National Academies' Committee on Strategies for Identifying and Addressing Biodefense Vulnerabilities Posed by Synthetic Biology (2017-2018)
- Member, World Economic Forum Global Future Council (GFC) on the Future of Biotechnologies (2016-2018)
- Member, Department of Energy Biological and Environmental Research Advisory Committee (BERAC) (2016-2021)
- Board of Directors, International Metabolic Engineering Society (IMES) (2016-present); Vice President (2019-present)
- Board of Directors, Engineering Biology Research Consortium (EBRC) (2016-present)
- Co-Chair, DOE-BER Workshop on Bioenergy (2014)

Member, National Academies' Committee on the Industrialization of Biology: A Roadmap to Accelerate the Advanced Manufacturing of Chemicals (2014)
AIChE Division 15c Vice-Chair/Chair (Nov 2010 – Nov 2013)
MIT Representative as Expert Witness on Transportation Biofuels, Senate Energy and Natural Resources Committee (Feb 2007)

Scientific journals

Editorial Board, *Current Opinion in Biotechnology* (2021-2024)
Editorial Board, *Metabolic Engineering* (2018-present)
Editorial Board, *Microbial Cell Factories* (2017-2020)
Associate Editor, *ACS Synthetic Biology* (2017-present)
Editorial Board, *Cell Chemical Biology* (2015-present)
Associate Editor, *Metabolic Engineering Communications* (2013-present)
Guest Editor, Biomolecular Engineering Issue, *Biotechnology Journal* (2012-2013)
Guest Editor, Chemical Biotechnology Issue, *Current Opinion in Biotechnology* (2011-2013)
Editorial Board, *Biotechnology and Bioengineering* (2011-present)
Editorial Board, *ACS Synthetic Biology* (2011-present)
Editorial Board, *Biotechnology Journal* (2009-present)

Industrial Advisory Boards

Scientific advisory board, Thermo Fisher Scientific, Waltham, MA
Scientific advisor, Senda Biosciences, Cambridge, MA
Scientific advisor, Zymochem, San Francisco, CA
Scientific advisor, Synlogic, Cambridge, MA
Scientific advisory board, Manus Biosynthesis, Cambridge, MA
Board of Directors, Kalion, Inc., Milton, MA
Board of Directors, BioMADE, Minneapolis, MN

Conference planning and coordination

Conference Co-Chair, Biochemical and Molecular Engineering XXII Conference (2018-2022)
Conference Co-Chair, Metabolic Engineering XIII/XIV, (2018-2021)
Steering Committee, Biochemical and Molecular Engineering XXI Conference (2018-2019)
Organizing Committee, International Conference on Biomolecular Engineering (ICBE 2019), sponsored by the Society for Biological Engineering (SBE) (2018-2019)
Session Co-Convener, "Advances in fermentation of microbial communities/mixed cultures," 2018 Society for Industrial Microbiology & Biotechnology Annual Meeting (2017-2018)
Session Co-Chair, "Synthetic Biology and Network Design," Biochemical and Molecular Engineering XX (Jul 2017)
Session Co-Chair, "Metabolic Engineering for Chemicals and Materials," Metabolic Engineering XI Conference (2016)
Scientific Advisory Board, Metabolic Engineering X (2013-2014)
Organizing Committee, 2015 Synthetic Biology: Engineering, Evolution & Design (SEED) Conference (2015)
Organizing Committee, 5th International Conference on Biomolecular Engineering (ICBE), sponsored by the Society for Biological Engineering (SBE) (2014-2015)
Program Chair, 2014 Society for Industrial Microbiology & Biotechnology Annual Meeting (2013-2014)
Conference Co-Chair, 4th International Conference on Biomolecular Engineering (ICBE), sponsored by the Society for Biological Engineering (SBE) (2011-2013)
Program Committee, Metabolic Engineering Track, Society for Industrial Microbiology & Biotechnology (2011-2013)
Session Co-Chair, "Synthetic Systems Biology," AIChE Annual Meeting (Oct 2012)

Session Co-Chair, “Advances in biocatalysis,” American Chemical Society National Meeting (Mar 2012)
Program Committee, Session Chair, “Biocatalysis by Design,” Society for Industrial Microbiology
Annual Meeting (July 2011)
Session Co-Chair, “Novel and Engineered Hosts for Novel Product Applications,” American Chemical
Society National Meeting (Mar 2011)
Scientific Advisory Committee, “International Conference on Synthetic Biology,” Genopole, France (Dec
2010)
Session Co-Chair, “Genomics approaches to systems biology,” AIChE Annual Meeting (Nov 2010)
Session Co-Chair, “Metabolic engineering of microorganisms for fuels and chemicals,” AIChE Annual
Meeting (Nov 2010)
Symposium Co-Chair, “Emerging Technologies,” Biotechnology (BIOT) Division, American Chemical
Society National Meeting (Aug 2009)
Session Co-Chair, “Novel approaches in metabolic engineering,” Biochemical Engineering XVI (Jul
2009)
Session Co-Chair, “Microbial Science and Technology,” Society for Industrial Microbiology 31st
Symposium on Biotechnology for Fuels and Chemicals (May 2009)
Conference Program Committee, Synthetic Biology 4.0 (Oct 2008)
Poster Session Co-Chair, Conference Planning Committee, Metabolic Engineering VII (Sep 2008)
Session Co-Chair, “Advances in Metabolic Engineering,” American Chemical Society National Meeting
(Aug 2008)
Session Co-Chair, “Systems Approaches to Synthetic Biology,” AIChE Annual Meeting (Nov 2007)
Session Co-Chair, “Physiology and metabolic engineering advancement for protein productivity and
process robustness,” RAFT VII (Nov 2007)
Conference Planning Committee, Session Co-Chair, “New Frontiers in Metabolic Engineering,”
Metabolic Engineering VI (Oct 2006)
Session Co-Chair, “Process Development – Molecular and Cellular Biological Issues of R&D,” American
Chemical Society National Meeting (Sep 2006)
Poster Session Co-Chair, Metabolic Engineering V (Sep 2004)
Conference Co-Chair, Metabolic Engineering IV Conference (Oct 2002)
Poster Session Co-Chair, Metabolic Engineering III Conference (Oct 2000)

Memberships

Member, American Association for the Advancement of Science (AAAS)
Member, American Chemical Society (ACS), BIOT Division
Member, American Institute of Chemical Engineers (AIChE)
Member, American Society for Microbiology (ASM)
Member, International Metabolic Engineering Society (IMES)
Member, Society for Biological Engineering (SBE)
Member, National Organization for the Professional Advancement of Black Chemists and Chemical
Engineers (NOBCChE)