

Jay D Keasling

Office Address

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Education

Postdoctorate, Biochemistry, 1991-1992, Stanford University
Ph.D., Chemical Engineering, 1991, University of Michigan
M.S., Chemical Engineering, 1988, University of Michigan
B.S., Chemistry and Biology, 1986, University of Nebraska, Lincoln

Positions

Current positions

2004-Present **Professor**, Department of Bioengineering, University of California, Berkeley, Berkeley, CA
2001-Present **Professor**, Department of Chemical & Biomolecular Engineering, University of California, Berkeley, Berkeley, CA
2006-Present **Senior Faculty Scientist**, Biological Sciences & Engineering Division, Lawrence Berkeley National Laboratory, Berkeley, CA
2007-Present **Chief Executive Officer**, Joint BioEnergy Institute (JBEI), Emeryville, CA
2017-Present **Chief Science and Technology Officer for Biosciences**, Lawrence Berkeley National Laboratory, Berkeley, CA
2013-Present **Investigator**, Novo Nordisk Foundation Center for Biosustainability, Technical University of Denmark
2012-Present **Sydney Brenner Visiting Professor**, National University of Singapore, Singapore
2017-Present **Distinguished Visiting Professor**, Shenzhen Institutes for Advanced Technologies, Shenzhen, China

Previous positions

2010-2017 **Associate Laboratory Director for Biosciences**, Lawrence Berkeley National Laboratory, Berkeley, CA
2006-2016 **Director**, Synthetic Biology Engineering Research Center (Synberc), University of California, Berkeley, CA
2010-2012 **Nanyang Professor**, Nanyang Technological University, Singapore
2009-2010 **Acting Deputy Laboratory Director**, Lawrence Berkeley National Laboratory, Berkeley, CA
2005-2009 **Division Director**, Physical Biosciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA
1992-2006 **Faculty Scientist**, Physical Biosciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA
1998-2001 **Associate Professor**, Department of Chemical Engineering, University of California, Berkeley, Berkeley, CA
1992-1998 **Assistant Professor**, Department of Chemical Engineering, University of California, Berkeley, Berkeley, CA
1991-1992 **Post doctoral fellow**, Department of Biochemistry, Stanford University, Stanford, CA
1986-1991 **PhD student**, Department of Chemical Engineering, University of Michigan, Ann Arbor, MI

Other Appointments

2010-Present Consultant, Malaysia Life Science Capital Fund, Malaysia
2012-Present Member, Scientific Advisory Board, Evolva, Denmark
2008-2012 Member, Scientific Advisory Board, Genomatica, USA
2003-2009 Member, Scientific Advisory Board, Amyris, USA

Member of Scientific Academies and Societies

Scientific Academies

2016-Present American Academy of Arts and Sciences
2010-Present Member of the National Academy of Engineering
2014-Present Fellow of the National Academy of Inventors

2007-Present Fellow of the American Academy of Microbiology
 2000-Present Fellow of the American Institute of Medical and Biological Engineering

Other Memberships

American Chemical Society
 American Institute of Chemical Engineers
 American Society for Microbiology
 Phi Beta Kappa
 Society for Industrial Microbiology and Biotechnology

Founder

2003	Amyris (NASDAQ: AMRS)
2003	Codon Devices
2004	LS9 (Now part of REG; NASDAQ: REGI)
2011	Lygos
2016	Engineering Biology Research Consortium
2016	Demetrix
2016	Constructive Biology
2017	Maple Bio

Awards

2017	<i>Honorary Professor</i> , Tianjin Institute for Industrial Biotechnology, Chinese Academy of Sciences, Tianjin, China
2017	<i>Distinguished Visiting Professor</i> , Shenzhen Institutes for Advanced Technologies, Chinese Academy of Sciences, Shenzhen, China
2017	<i>Distinguished Lecturer</i> , Department of Chemical Engineering, Penn State University, University Park, PA
2017	<i>Amgen Award</i> , Biochemical Engineering Meeting
2016	<i>Election as a Member</i> , American Academy of Arts and Sciences
2016	<i>N. Ronald Morris Lecture</i> , Rutgers University, New Brunswick, NJ
2016	<i>The Stanley Katz Memorial Lecture</i> , The City College of New York, New York, New York
2015	<i>Eric and Shiela Samson Prime Minister's Prize in Innovation in Alternative Fuels for Transportation</i> , Tel Aviv, Israel
2015	<i>Honorary Doctorate</i> , Chalmers University of Technology, Gothenburg, Sweden
2015	<i>Michael M. Abbot Lecture</i> , Department of Chemical & Biological Engineering, Rensselaer Polytechnic Institute
2015	<i>National Academy of Inventors</i>
2015	<i>Earl Bakken Lecture</i> , American Institute for Medical and Biological Engineering
2014	<i>Innovator Award – Biosciences</i> , Economist Magazine
2014	<i>Eni Renewable Energy Prize</i> , Eni S.p.A.
2014	<i>Devon Walter Meek Award Lectures</i> , Department of Chemistry, Ohio State University
2014	<i>Arun Guthikonda Memorial Award Lectureship</i> , Department of Chemistry, Columbia University
2014	<i>Herman S. Block Award Lectureship</i> , Department of Chemistry, University of Chicago
2013	<i>Food, Pharmaceutical and Bioengineering Division Award</i> , Food, Pharmaceutical and Bioengineering Division, American Institute of Chemical Engineers
2013	<i>George Washington Carver Award for Innovation in Industrial Biotechnology</i> , Biotechnology Industry Organization
2013	<i>Promega Biotechnology Research Award</i> , American Society for Microbiology
2013	<i>Marvin Johnson Award in Microbial and Biochemical Technology</i> , Division of Biochemical Technology, American Chemical Society
2012	<i>Heinz Award for Technology, the Economy and Employment</i> , Heinz Family Foundation
2012	<i>International Metabolic Engineering Award</i> , Metabolic Engineering Society
2012	<i>Heuermann Lecture</i> , Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln
2012	<i>Katz Lectureship</i> , Department of Chemical Engineering, University of Michigan
2012	<i>Henry McGee Lecturer</i> , Virginia Commonwealth University, School of Engineering
2012	<i>Tetelman Fellowship Lectureship</i> , Jonathan Edwards College, Yale University
2011	<i>Kewaunee Lectureship</i> , Pratt School of Engineering, Duke University
2010	<i>Presidential Green Chemistry Challenge Award</i> , United States Environmental Protection Agency (to LS9 and Founders)
2010	<i>Division O (Fermentation and Biotechnology) Lectureship</i> , American Society for Microbiology
2010	<i>Treat B Johnson Lecture</i> , Department of Chemistry, Yale University
2010	<i>Eyring Lectures in Chemistry and Biochemistry</i> , Arizona State University
2010	<i>National Academy of Engineering</i>
2010	<i>GLBT Engineer of the Year</i> , National Organization of Gay and Lesbian Scientists and Technical Professionals

- 2009 *Cox Distinguished Lectureship*, Washington University, 2009. *Ashland Lectureship*, University of Kentucky
- 2009 *Danckwerts Lectureship*, World Congress on Chemical Engineering
- 2009 *Inaugural Biotech Humanitarian Award*, Biotechnology Industry Organization (BIO)
- 2009 *2009 University Lectures in Chemistry*, Department of Chemistry, Boston College
- 2009 *The Sixteenth F. A. Bourke Distinguished Lecture in Biotechnology*, Center for Advanced Biotechnology and Department of Biomedical Engineering, Boston University
- 2009 *Chancellor's Award for Public Service for Research in the Public Interest*, University of California, Berkeley
- 2008 *2008 Britton Chance Distinguished Lecturer*, Department of Chemical and Biomolecular Engineering and Institute Medicine and Engineering, University of Pennsylvania
- 2008 *Patten Distinguished Seminar*, Department of Chemical Engineering, University of Colorado
- 2008 *Sierra Section Recognition for Leadership in the Chemical Engineering Profession*, American Institute of Chemical Engineers – Northern California Section
- 2007 *Visionary Award*, Bay Bio
- 2007 *Truman Lecturer*, Sandia National Laboratories
- 2007 *Professional Progress Award*, American Institute for Chemical Engineers
- 2007 *Elected Fellow of the American Academy for Microbiology*
- 2007 *Research Project of the Year*, Northern California Section of the American Institute for Chemical Engineers
- 2007 *Eastman Lectureship*, Department of Chemical Engineering, Georgia Tech University
- 2006 *Scientist of the Year*, Discover Magazine
- 2005 *Technology Pioneer*, World Economic Forum
- 2005 *Seventh Annual Frontiers of Biotechnology Lecture*, Department of Chemical Engineering, Massachusetts Institute of Technology
- 2005 *Blue-Green Lecturer*, Department of Chemical Engineering, University of Michigan & Department of Chemical Engineering and Materials Sciences, Michigan State University
- 2003 *Inaugural Schwartz Lecturer*, Department of Chemical Engineering, Johns Hopkins University
- 2002 *Allan P. Colburn Memorial Lecturer*, Department of Chemical Engineering, University of Delaware
- 2000 *Elected Fellow of the American Institute of Medical and Biological Engineering*
- 1999 *AIChE Award for Chemical Engineering Excellence in Academic Teaching*, Northern California Section of the American Institute for Chemical Engineers
- 1995 *Chevron Young Faculty Fellowship*, Chevron
- 1995 *CAREER Award*, National Science Foundation
- 1992 *Zeneca Young Faculty Fellowship*, Zeneca Ltd.
- 1991 *NIH Postdoctoral Fellowship*, Stanford University
- 1982 *Regents Scholarship*, The University of Nebraska
- 1986 *Graduation with High Distinction*, The University of Nebraska

Mentoring

Supervisor of <i>graduated</i> PhD/MS students	38/8
Supervisor/co-supervisor of <i>current</i> PhD students	15
Former/current affiliated post docs	52/15

Publications, Patents, Presentations, Citations

<i>H-factor of 70 and >18,500 citations (Web of Science) and of 87 and >30,000 citations (Google Scholar)</i>
402 Peer Reviewed Papers
11 Conference Proceedings
15 Book Chapters
38 Issued US Patents
417 Invited oral presentations at international conferences and seminars

Refereed Journal Publications

1989

- J. D. Keasling and B. O. Palsson. 1989. "On the kinetics of plasmid replication." *J. Theor. Biol.* **136**:487-492.
- J. D. Keasling and B. O. Palsson. 1989. "ColE1 plasmid replication: a simple kinetic description from a structured model." *J. Theor. Biol.* **141**:447-461.

1990

- B. O. Palsson, J. D. Keasling, and S. G. Emerson. 1990. "The regulatory mechanisms of human immunodeficiency virus replication predict multiple expression rates." *Proc. Natl. Acad. Sci. USA.* **87**:772-776.

1991

4. J. D. Keasling, B. O. Palsson, and S. Cooper. 1991. "Cell-cycle-specific F'*lac* plasmid replication: regulation by cell size control of initiation." *J. Bacteriol.* **173**:2673-2680.
- 1992**
5. J. D. Keasling, B. O. Palsson, and S. Cooper. 1992. "Replication of the R6K plasmid during the *Escherichia coli* cell cycle." *J. Bacteriol.* **174**:1060-1062.
6. J. D. Keasling, B. O. Palsson, and S. Cooper. 1992. "Replication of prophage P1 is cell-cycle specific." *J. Bacteriol.* **174**:4457-4462.
7. J. D. Keasling, B. O. Palsson, and S. Cooper. 1992. "Replication of mini-F plasmids during the bacterial division cycle." *Res. Microbiol.* **143**:541-548.
- 1993**
8. J. D. Keasling, L. Bertsch, and A. Kornberg. 1993. "Guanosine pentaphosphate phosphohydrolase of *Escherichia coli* is a long-chain polyphosphatase." *Proc. Natl. Acad. Sci. USA* **90**:7029-7033.
- 1994**
9. J. D. Keasling and S. Cooper. 1994. "Analysis of plasmid replication during the bacterial division cycle." *Methods in Molecular Genetics* **3**:380-388.
10. T. R. Hupp, J. D. Keasling, S. Cooper, and J. M. Kaguni. 1994. "Synthesis of DnaK protein during the division cycle of *Escherichia coli*." *Res. Microbiol.* **145**:99-109.
- 1995**
11. J. D. Keasling, H. Kuo, and G. Vahanian. 1995. "A Monte Carlo simulation of the *Escherichia coli* cell cycle." *J. Theor. Biol.* **176**:411-430.
- 1996**
12. J. D. Keasling and G. A. Hupf. 1996. "Genetic manipulation of polyphosphate metabolism affects cadmium tolerance in *Escherichia coli*." *Appl. Environ. Microbiol.* **62**:743-746.
13. S. T. Sharfstein, S. J. Van Dien, and J. D. Keasling. 1996. "Modulation of the phosphate-starvation response in *Escherichia coli* by genetic manipulation of the polyphosphate pathways." *Biotechnol. Bioeng.* **51**:434-438.
14. N. Shapiro and J. D. Keasling. 1996. "The *recA* gene and cadmium toxicity in *Escherichia coli* K-12." *Microbios* **86**:23-26.
15. H. Kuo and J. D. Keasling. 1996. "A Monte Carlo simulation of plasmid replication during the bacterial division cycle." *Biotechnol. Bioeng.* **52**:633-647.
16. S. Keyhani, J. L. Lopez, D. S. Clark, and J. D. Keasling. 1996. "Intracellular polyphosphate content and cadmium tolerance in *Anacystis nidulans* R2." *Microbios* **88**:105-114.
17. P. Wong, S. Gladney, and J. D. Keasling. 1996. "A mathematical model of the *lac* operon: inducer exclusion, catabolite repression, and diauxic growth on glucose and lactose." *Biotechnol. Prog.* **13**:132-143.
- 1997**
18. S. J. Van Dien, S. Keyhani, C. Yang, and J. D. Keasling. 1997. "Manipulation of independent synthesis and degradation of polyphosphate in *Escherichia coli* for investigation of phosphate secretion from the cell." *Appl. Environ. Microbiol.* **63**:1689-1695.
19. J. Elmen, W. Pan, S. Y. Leung, A. Magyarosy, and J. D. Keasling. 1997. "Kinetics of toluene degradation by a nitrate-reducing bacterium isolated from a groundwater aquifer." *Biotechnol. Bioeng.* **55**:82-90.
20. T. A. Carrier and J. D. Keasling. 1997. "Engineering mRNA stability in *E. coli* by the addition of synthetic hairpins using a 5' cassette system." *Biotechnol. Bioeng.* **55**:577-580.
21. C. L. Wang, P. C. Michels, S. Dawson, S. Kitisakkul, J. A. Baross, J. D. Keasling, and D. S. Clark. 1997. "Cadmium removal by a new strain of *Pseudomonas aeruginosa* in aerobic culture." *Appl. Environ. Microbiol.* **63**:4075-4078.
22. J. Pramanik and J. D. Keasling. 1997. "A stoichiometric model of *Escherichia coli* metabolism: incorporation of growth-rate dependent biomass composition and mechanistic energy requirements." *Biotechnol. Bioeng.* **56**:398-421.
23. T. A. Carrier and J. D. Keasling. 1997. "Controlling messenger RNA stability in bacteria: strategies for engineering gene expression." *Biotechnol. Prog.* **13**:699-708.
24. T. A. Carrier and J. D. Keasling. 1997. "Mechanistic modelling of mRNA decay." *J. Theor. Biol.* **189**:195-209.
- 1998**
25. J. D. Keasling, S. J. Van Dien, and J. Pramanik. 1998. "Engineering polyphosphate metabolism in *Escherichia coli*: implications for bioremediation of inorganic contaminants." *Biotechnol. Bioeng.* **58**:231-239.

26. S. J. Van Dien and J. D. Keasling. 1998. "A dynamic model of the *Escherichia coli* phosphate-starvation response." *J. Theor. Biol.* **190**:37-49.
27. J. D. Keasling and S.-W. Bang. 1998. "Recombinant DNA techniques for bioremediation and environmentally-friendly synthesis." *Curr. Opin. Biotechnol.* **9**:135-140.
28. S. Cooper and J. D. Keasling. 1998. "Cycle-specific replication of chromosomal and F-plasmid origins." *FEMS Microbiol. Lett.* **163**:217-222.
29. K. L. Jones and J. D. Keasling. 1998. "Construction and characterization of F plasmid-based expression vectors." *Biotechnol. Bioeng.* **59**:659-665.
30. T. A. Carrier, 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.
31. S. J. Van Dien and J. D. Keasling. 1998. "Optimization of polyphosphate degradation and phosphate secretion using hybrid metabolic pathways and engineered host strains." *Biotechnol. Bioeng.* **59**:754-761.
32. J. Pramanik, P. L. Trelstad, and J. D. Keasling. 1998. "A flux-based stoichiometric model of enhanced biological phosphorus removal metabolism." *Wat. Sci. Tech.* **37**:609-613.
33. J. Pramanik and J. D. Keasling. 1998. "Effect of carbon source and growth rate on biomass composition and metabolic flux predictions of a stoichiometric model." *Biotechnol. Bioeng.* **60**:230-238.
34. S. J. Van Dien and J. D. Keasling. 1998. "Control of polyphosphate metabolism in genetically-engineered *Escherichia coli*." *Enzyme Microb. Technol.* **24**:21-25.
35. J. Pramanik, P. L. Trelstad, A. J. Schuler, D. Jenkins, and J. D. Keasling. 1998. "Development and validation of a flux-based stoichiometric model for enhanced biological phosphorus removal metabolism." *Water Research* **33**:462-476.

1999

36. R. Brent Nielsen and J. D. Keasling. 1999. "Reductive dechlorination of chlorinated ethene DNAPLs by a culture enriched from contaminated groundwater." *Biotechnol. Bioeng.* **62**:160-165.
37. T. A. Carrier and J. D. Keasling. 1999. "A library of synthetic 5' secondary structures to manipulate mRNA stability in *Escherichia coli*." *Biotechnol. Prog.* **15**:58-64.
38. E. Gilbert, A. Khlebnikov, W. Meyer-Ilse, and J. D. Keasling. 1999. "Use of soft X-ray microscopy for analysis of early-stage biofilm formation." *Wat. Sci. Tech.* **39**(7):269-272.
39. S. J. Van Dien and J. D. Keasling. 1999. "Effect of polyphosphate metabolism on the *Escherichia coli* phosphate-starvation response." *Biotechnol. Prog.* **15**(4):587-593.
40. S. E. Cowan, J. Black, J. D. Keasling, and R. M. White. 1999. "Ultrasonic flexural-plate-wave sensor for detecting the concentration of settling *E. coli* W3110 cells." *Analytical Chemistry*. **71**(16):3622-3625.
41. P. L. Trelstad, P. Purdhani, W. Geibdorfer, W. Hillen, and J. D. Keasling. 1999. "Polyphosphate kinase of *Acinetobacter* sp. Strain ADP1: purification and characterization of the enzyme and its role during changes in extracellular phosphate." *Appl. Environ. Microbiol.* **65**(9):3780-3786.
42. J. D. Keasling. 1999. "Gene-expression tools for the metabolic engineering of bacteria." *Trends in Biotechnology* **17**:452-460.
43. T. A. Carrier and J. D. Keasling. 1999. "Investigating autocatalytic gene expression systems through mechanistic modeling." *J. Theor. Biol.* **201**:25-36.

2000

44. S. E. Cowan, E. Gilbert, A. Khlebnikov, and J. D. Keasling. 2000. "Dual labeling with green fluorescent proteins for confocal microscopy." *Appl. Environ. Microbiol.* **66**:413-418.
45. D. S. Reichmuth, J. L. Hittle, H. W. Blanch, and J. D. Keasling. 2000. "Biosulfurization of dibenzothiophene in *Escherichia coli* is enhanced by expression of a *Vibrio harveyi* oxidoreductase gene." *Biotechnol. Bioeng.* **67**:72-79.
46. J. D. Keasling, S. J. Van Dien, P. Trelstad, N. Renninger, and K. McMahon. 2000. "Application of polyphosphate metabolism to environmental and biotechnological problems." *Biochemistry (Moscow)*. **65**:324-331.
47. D. G. Bolesch and J. D. Keasling. 2000. "The effect of monovalent ions on polyphosphate binding to *Escherichia coli* exopolyphosphatase." *Biochem. Biophys. Res. Comm.* **274**:236-241.
48. S.-W. Bang, D. S. Clark, and J. D. Keasling. 2000. "Engineering hydrogen sulfide production and cadmium removal by expression of the thiosulfate reductase gene (*phsABC*) from *Salmonella enterica* serovar Typhimurium in *Escherichia coli*." *Appl. Environ. Microbiol.* **66**:3939-3944.
49. C. L. Wang, P. D. Maratukulam, A. M. Lum, D. S. Clark, and J. D. Keasling. 2000. "Metabolic engineering of an aerobic sulfate reduction pathway and its application to precipitation of cadmium on the cell surface." *Appl. Environ. Microbiol.* **66**:4497-4502.

50. S. E. Cowan, E. Gilbert, D. Liepmann, and J. D. Keasling. 2000. "Commensal interactions in a dual-species biofilm exposed to mixed organic compounds." *Appl. Environ. Microbiol.* **66**:4481-4485.
 51. S.-W. Bang, D. S. Clark, and J. D. Keasling. 2000. "Cadmium, lead, and zinc removal by expression of the thiosulfate reductase gene from *Salmonella typhimurium* in *Escherichia coli*." *Biotechnol. Lett.* **22**:1331-1335.
 52. D. G. Bolesch and J. D. Keasling. 2000. "Polyphosphate binding and chain length recognition of *Escherichia coli* exopolyphosphatase." *J. Biol. Chem.* **275**:33814-33819.
 53. A. Khlebnikov, O. Risa, T. Skaug, T. A. Carrier, and J. D. Keasling. 2000. "Regulatable arabinose-inducible gene expression system with consistent control in all cells of a culture." *J. Bacteriol.* **182**:7029-7034.
 54. C. D. Smolke, T. A. Carrier, and J. D. Keasling. 2000. "Coordinated, differential expression of two genes through directed mRNA cleavage and stabilization by secondary structures." *Appl. Environ. Microbiol.* **66**:5399-5405.
 55. K. L. Jones, 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." *Met. Eng.* **2**:328-338.
- 2001**
56. S.-W. Kim and J. D. Keasling. 2001. "Metabolic engineering of the nonmevalonate isopentenyl diphosphate synthesis pathway in *Escherichia coli* enhances lycopene production." *Biotechnol. Bioeng.* **72**:408-415.
 57. C. L. Wang, A. M. Lum, S. C. Ozuna, D. S. Clark, and J. D. Keasling. 2001. "Aerobic sulfide production and cadmium precipitation by *Escherichia coli* expressing the *Treponema denticola* cysteine desulfhydrase gene." *Appl. Microbiol. Biotechnol.* **56**:425-430.
 58. S. E. Cowan, D. Liepmann, and J. D. Keasling. 2001. "Development of engineering biofilms on poly-L-lysine patterned surfaces." *Biotechnol. Lett.* **23**:1235-1241.
 59. I. Aldor and J. D. Keasling. 2001. "Metabolic engineering of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) composition in recombinant *Salmonella enterica* serovar Typhimurium." *Biotechnol. Bioeng.* **76**:108-114.
 60. C. L. Wang, D. S. Clark, and J. D. Keasling. 2001. "Analysis of an engineered sulfate reduction pathway and cadmium precipitation on the cell surface." *Biotechnol. Bioeng.* **75**:285-291.
 61. C. D. Smolke, V. J. J. Martin, and J. D. Keasling. 2001. "Controlling the metabolic flux through the carotenoid pathway using directed mRNA processing and stabilization." *Met. Eng.* **3**:313-321.
 62. V. J. J. Martin, Y. Yoshikuni, and J. D. Keasling. 2001. "The in vivo synthesis of plant sesquiterpenes in *Escherichia coli*." *Biotechnol. Bioeng.* **75**:497-503.
 63. C. D. Smolke, A. Khlebnikov, and J. D. Keasling. 2001. "Effects of transcription induction homogeneity and transcript stability on expression of two genes in a constructed operon." *Appl. Microbiol. Biotechnol.* **57**:689-696.
 64. A. Khlebnikov, K. A. Datsenko, T. Skaug, B. L. Wanner, and J. D. Keasling. 2001. "Homogeneous expression of the P_{BAD} promoter in *Escherichia coli* by constitutive expression of the low-affinity high-capacity AraE transporter." *Microbiology* **147**:3241-3247.
 65. E. S. Gilbert, A. Khlebnikov, S. E. Cowan, and J. D. Keasling. 2001. "Analysis of biofilm structure and gene expression using fluorescence dual labeling." *Biotechnol. Prog.* **17**:1180-1182.
- 2002**
66. C. D. Smolke and J. D. Keasling. 2002. "Effect of copy number and mRNA processing and stabilization on transcript and protein levels from an engineered dual-gene operon." *Biotechnol. Bioeng.* **78**:412-424.
 67. N. Renninger, K. D. McMahon, R. Knopp, H. Nitsche, D. S. Clark, and J. D. Keasling. 2002. "Uranyl precipitation by biomass from an enhanced biological phosphorus removal reactor." *Biodegradation* **12**:401-410.
 68. C. L. Wang, S. C. Ozuna, D. S. Clark, and J. D. Keasling. 2002. "A deep-sea hydrothermal vent isolate, *Pseudomonas aeruginosa* CW961, requires thiosulfate for Cd²⁺ tolerance and precipitation." *Biotechnol. Lett.* **24**:637-641.
 69. A. W. Walker and J. D. Keasling. 2002. "Metabolic engineering of *Pseudomonas putida* for the utilization of parathion as a carbon and energy source." *Biotechnol. Bioeng.* **78**:715-721.
 70. V. J. J. Martin, C. D. Smolke, and J. D. Keasling. 2002. "Redesigning cells for production of complex organic molecules." *ASM News* **68**:336-343.
 71. A. Magyarosy, R. D. Laidlaw, R. Kilaas, C. Echer, D. S. Clark, and J. D. Keasling. 2002. "Nickel accumulation and nickel oxalate precipitation by *Aspergillus niger*." *Appl. Microbiol. Biotechnol.* **59**:381-388.

72. A. Magyarosy, J. Z. Ho, H. Rapoport, S. Dawson, J. Hancock, and J. D. Keasling. 2002. "Chloroxanthomycin, a fluorescent, chlorinated, pentacyclic pyrene from a *Bacillus* sp." *Appl. Environ. Microbiol.* **68**:4095-4101.
73. I. S. Aldor, S.-W. Kim, K. L. Jones, 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. Environ. Microbiol.* **68**:3848-3854.
74. A. Khlebnikov, T. Skaug, and J. D. Keasling. 2002. "Modulation of gene expression from the arabinose-inducible *araBAD* promoter." *J. Ind. Microbiol. Biotechnol.* **29**:34-37.
75. N. L. Goeden-Wood, V. P. Conticello, S. J. Muller, and J. D. Keasling. 2002. "Improved assembly of multimeric genes for the biosynthetic production of protein polymers." *Biomacromolecules* **3**:874-879.
76. A. Khlebnikov and J. D. Keasling. 2002. "Effect of *lacY* expression on homogeneity of induction from the P_{tac} and P_{trc} promoters by natural and synthetic inducers." *Biotechnol. Prog.* **18**:672-674.
77. K. D. McMahon, D. Jenkins, and J. D. Keasling. 2002. "Polyphosphate kinase genes from activated sludge carrying out enhanced biological phosphorus removal." *Water Sci. Technol.* **46**:155-162.
78. K. D. McMahon, M. A. Dojka, N. R. Pace, D. Jenkins, and J. D. Keasling. 2002. "Polyphosphate kinase from activated sludge performing enhanced biological phosphorus removal." *Appl. Environ. Microbiol.* **68**:4971-4978.
79. C. D. Smolke and J. D. Keasling. 2002. "Effect of gene location, mRNA secondary structures, and RNase sites on expression of two genes in an engineered operon." *Biotechnol. Bioeng.* **80**:762-776.
80. G.-Y. Wang and J. D. Keasling. 2002. "Amplification of HMG-CoA reductase production enhances carotenoid accumulation in *Neurospora crassa*." *Met. Eng.* **4**:193-201.

2003

81. S. K. Tehara and J. D. Keasling. 2003. "Gene cloning, purification, and characterization of a phosphodiesterase from *Delftia acidovorans*." *Appl. Environ. Microbiol.* **69**:504-508.
82. E. S. Gilbert, A. W. Walker and J. D. Keasling. 2003. "A constructed microbial consortium for biodegradation of the organophosphorus insecticide parathion." *Appl Microbiol Biotechnol.* **61**:77-81.
83. N. L. Goeden-Wood, J. D. Keasling, and S. J. Muller. 2003. "Self-assembly of a designed protein polymer into β -sheet fibrils and responsive gels." *Macromolecules* **36**:2932-2938.
84. R. Knopp, P. J. Panak, L. A. Wray, N. S. Renninger, J. D. Keasling, and H. Nitsche. 2003. "Laser spectroscopic studies of U(VI) with bacterial phosphate species." *Chem. Eur. J.* **9**:2812-2818.
85. V. J. J. Martin, D. J. Pitera, S. T. Withers, J. D. Newman, and J. D. Keasling. 2003. "Engineering the mevalonate pathway in *Escherichia coli* for production of terpenoids." *Nat. Biotechnol.* **21**:796-802.
86. I. Chang, E. Gilbert, N. Eliashberg, and J. D. Keasling. 2003. "A three-dimensional, stochastic simulation of biofilm growth and transport-related factors that affect structure." *Microbiology* **149**:2859-2871.
87. D. J. Scott, B. M.T. da Costa, S. C. Espy, J. D. Keasling, and Katrina Cornish. 2003. "Activation and inhibition of rubber transferases by metal cofactors and pyrophosphate substrates." *Phytochemistry* **64**:123-134.
88. M.M. Maharbiz, W.J. Holtz, S. Sharifzadeh, J. D. Keasling, R. T. Howe. 2003. "A microfabricated electrochemical oxygen generator for high-density cell culture arrays." *IEEE J. Microelectromech. Syst.* **12**:590-599.
89. I. S. Aldor and J. D. Keasling. 2003. "Process design for microbial plastic factories: metabolic engineering of polyhydroxyalkanoates." *Curr. Opin. Biotechnol.* **14**:475-483.
90. C. Khosla and J. D. Keasling. 2003. "Metabolic engineering for drug discovery and development." *Nature Rev. Drug Disc.* **2**:1019-1025.

2004

91. M. M. Maharbiz, W. J. Holtz, R. T. Howe, and J. D. Keasling. 2004. "Microbioreactor arrays with parametric control for high-throughput experimentation." *Biotechnol. Bioeng.* **86**:485-90.
92. E. S. Gilbert and J. D. Keasling. 2004. "Bench Scale Flow Cell for Nondestructive Imaging of Biofilms." *Meth. Microbiol.* **16**:109-118.
93. K. K. Reiling, Y. Yoshikuni, V. J. J. Martin, J. Newman, J. Bohlmann, and J. D. Keasling. 2004. "Mono and diterpene production in *Escherichia coli*." *Biotechnol. Bioeng.* **87**:200-212.
94. D. S. Reichmuth, H. W. Blanch, and J. D. Keasling. 2004. "Dibenzothiophene desulfurization pathway improvement using diagnostic GFP fusions." *Biotechnol. Bioeng.* **88**:94-99.

95. N. Renninger, R. Knopp, H. Nitsche, D.S. Clark, J. D. Keasling. 2004. "Uranyl precipitation by *Pseudomonas aeruginosa* via controlled polyphosphate metabolism." *Appl. Environ. Microbiol.* **70**:7404-7412.

2005

96. B. M. T. da Costa, J. D. Keasling, and K. Cornish. 2005. "Regulation of rubber biosynthetic rate and molecular weight in *Hevea brasiliensis* by metal cofactor." *Biomacromolecules* **6**:279-289.
97. S. Cooper and J. D. Keasling. 2005. "Experimental and theoretical considerations of P1-plasmid replication and segregation during the *E. coli* cell cycle." *J. Biol. Sci.* **5**:222-229.
98. S. K. Lee, J. D. Newman, and J. D. Keasling. 2005. "Catabolite repression of the propionate catabolic genes in *Escherichia coli* and *Salmonella enterica*: Evidence for involvement of the cyclic AMP receptor protein." *J. Bacteriol.* **187**:2793-2800.
99. K. Wang, J. D. Keasling, and S. J. Muller. 2005. "Effects of the sequence and size of non-polar residues on self-assembly of amphiphilic peptides." *Int. J. Biol. Macromol.* **36**:232-240.
100. M. J. Kang, Y. M. Lee, S. H. Yoon, J. H. Kim, S. W. Ock, K. H. Jung, Y. C. Shin, J. D. Keasling, and S. W. Kim. 2005. "Identification of genes affecting lycopene accumulation in *Escherichia coli* using a shot-gun method." *Biotechnol. Bioeng.* **91**:636-642.
101. B. F. Pflieger, N. J. Fawzi, and J. D. Keasling. 2005. "Optimization of DsRed production in *Escherichia coli*: Effect of ribosome binding site sequestration on translation." *Biotechnol. Bioeng.* **92**:553-558.
102. S. K. Lee and J. D. Keasling. 2005. "A propionate-inducible expression system for enteric bacteria." *Appl. Environ. Microbiol.* **71**:6856-6862.

2006

103. Y. Yoshikuni, V. J. J. Martin, T. E. Ferrin, and J. D. Keasling. 2006. "Engineering cotton (+)- δ -cadinene synthase to an altered function: germacrene D-4-ol synthase." *Chem. Biol.* **13**:91-98.
104. D-K. Ro, E. M. Paradise, M. Ouellet, K. J. Fisher, K. L. Newman, J. M. Ndungu, K. A. Ho, R. A. Eachus, R. S. Ham, J. Kirby, M. C. Y. Chang, S. T. Withers, Y. Shiba, R. Sarpong, and J. D. Keasling. 2006. "Production of the antimalarial drug precursor artemisinic acid in engineered yeast." *Nature* **440**:940-943.
105. Y. Yoshikuni, T. E. Ferrin, and J. D. Keasling. 2006. "Designed divergent evolution of enzyme function." *Nature* **440**:1078-1082.
106. S. K. Lee and J. D. Keasling. 2006. "Propionate-regulated high-yield protein production in *Escherichia coli*." *Biotechnol. Bioeng.* **93**:912-918.
107. S. C. Espy, J. D. Keasling, J. Castillon, and K. Cornish. 2006. "Initiator-independent and initiator-dependent rubber biosynthesis in *Ficus elastica*." *Arch. Biochem. Biophys.* **448**:13-22.
108. T. S. Ham, S. K. Lee, J. D. Keasling, and A. P. Arkin. 2006. "A tightly-regulated inducible expression system utilizing the *fim* inversion recombination switch." *Biotechnol. Bioeng.* **94**:1-4.
109. D. Baker, G. Church, J. Collins, D. Endy, J. Jacobson, J. Keasling, P. Modrich, C. Smolke, and R. Weiss. 2006. "Engineering life: building a FAB for biology." *Scientific American* **June**:44-51.
110. A. Mukhopadhyay, Z. He, E. J. Alm, A. P. Arkin, E. E. Baidoo, S. C. Borglin, W. Chen, T. C. Hazen, Qiang He, H.-Y. Holman, K. Huang, R. Huang, D. C. Joyner, N. Katz, M. Keller, P. Oeller, A. Redding, J. Sun, J. Wall, J. Wei, Z. Yang, H.-C. Yen, J. Zhou, and J. D. Keasling. 2006. "Salt stress in *Desulfovibrio vulgaris* Hildenborough: An integrated genomics approach." *J. Bacteriol.* **188**:4068-4078.
111. A. M. Redding, A. Mukhopadhyay, D. Joyner, T. C. Hazen, and J. D. Keasling. 2006. "Study of nitrate stress in *Desulfovibrio vulgaris* Hildenborough using iTRAQ proteomics." *Brief. Funct. Genom. Proteom.* **5**:133-43.
112. S. K. Lee and J. D. Keasling. 2006. "A *Salmonella*-based propionate-inducible expression system for *Salmonella enterica*." *Gene* **37**:6-11.
113. B. M. T. da Costa, J. D. Keasling, C. M. McMahon, and K. Cornish. 2006. "Magnesium regulation of *in vitro* rubber biosynthesis by *Parthenium argentatum* Gray." *Phytochemistry* **67**:1621-1628.
114. S. H. Yoon, Y. M. Lee, J. E. Kim, S. H. Lee, J. H. Lee, J. Y. Kim, K. H. Jung, Y. C. Shin, J. D. Keasling, and S. W. Kim. 2006. "Enhanced lycopene production in *Escherichia coli* engineered to synthesize isopentenyl diphosphate and dimethylallyl diphosphate from mevalonate." *Biotechnol. Bioeng.* **94**:1025-1032.
115. B. F. Pflieger, D. J. Pitera, C. D. Smolke, and J. D. Keasling. 2006. "Combinatorial engineering of intergenic regions in operons tunes expression of multiple genes." *Nat. Biotechnol.* **24**:1027-1032.
116. Y. J. Tang, D. Laidlaw, K. Gani, and J. D. Keasling. 2006. "Evaluation of the effects of various culture conditions on Cr(VI) reduction by *Shewanella oneidensis* MR-1 in a novel high-throughput mini-bioreactor." *Biotechnol. Bioeng.* **95**:176-184.

117. H. S. Zahiri, S. H. Yoon, J. D. Keasling, S. H. Lee, K. S. Won, S. C. Yoon, and Y. C. Shin. 2006. "Coenzyme Q(10) production in recombinant *Escherichia coli* strains engineered with a heterologous decaprenyl diphosphate synthase gene and foreign mevalonate pathway." *Metab. Eng.* **8**:406-416.
118. J. D. Newman, J. Marshal, M. Chang, F. Nowroozi, E. Paradise, D. Pitera, K. L. Newman, and J. D. Keasling. 2006. "High-level production of amorpha-4,11-diene in a two-phase partitioning bioreactor of metabolically engineering *Escherichia coli*." *Biotechnol. Bioeng.* **95**:684-691.
119. M. Mattozzi, S. Tehara, and J. D. Keasling. 2006. "Mineralization of paraoxon and use as a sole C and P source by a rationally designed catabolism in *Pseudomonas putida*." *Appl. Environ. Microbiol.* **72**:6699-6706.
120. S. K. Lee and J. D. Keasling. 2006. "Effect of glucose or glycerol as the sole carbon source on gene expression from the *Salmonella prpBCDE* promoter in *Escherichia coli*." *Biotechnol. Prog.* **22**:1547-1551.
121. M. C. Y. Chang and J. D. Keasling. 2006. "Production of isoprenoid pharmaceuticals by engineered microbes." *Nat. Chem. Biol.* **2**:674-681.
122. D. Lubertozzi and J. D. Keasling. 2006. "Marker and promoter effects on heterologous expression in *Aspergillus nidulans*." *Appl. Microbiol. Biotechnol.* **72**:1014-1023.
- 2007**
123. Y. J. Tang, A. L. Meadows, and J. D. Keasling. 2007. "A kinetic model describing *Shewanella oneidensis* MR-1 growth, substrate consumption, and product secretion". *Biotechnol. Bioeng.* **96**:125-133.
124. B.F. Pflieger, D. J. Pitera, J. D. Newman, V. J. J. Martin, and J. D. Keasling. 2007. "Microbial sensors for small molecules: development of a mevalonate biosensor." *Metab. Eng.* **9**:30-38.
125. S. T. Withers and J. D. Keasling. 2007. "Biosynthesis and engineering of isoprenoid small molecules." *Appl. Microbiol. Biotechnol.* **73**:980-990.
126. Y. J. Tang, A. L. Meadows, J. Kirby, and J. D. Keasling. 2007. "Anaerobic central metabolic pathways in *Shewanella oneidensis* MR-1 reinterpreted in the light of isotopic metabolite labeling." *J. Bacteriol.* **189**:894-901.
127. Y. J. Tang, F. Pingitore, A. Mukhopadhyay, R. Phan, T. C. Hazen, and J. D. Keasling. 2007. "Pathway confirmation and flux analysis of central metabolic pathways in *Desulfovibrio vulgaris* Hildenborough using GC-MS and FT-ICR mass spectrometry." *J. Bacteriol.* **189**:940-949.
128. Y. J. Tang, J. S. Hwang, D. E. Wemmer, and J. D. Keasling. 2007. "The *Shewanella oneidensis* MR-1 fluxome under various oxygen conditions." *Appl. Environ. Microbiol.* **73**:718-729.
129. S. H. Yoon, J. E. Kim, S. H. Lee, H. M. Park, M. S. Choi, J. Y. Kim, S. H. Lee, Y. C. Shin, J. D. Keasling, and S. W. Kim. 2007. "Engineering the lycopene synthetic pathway in *E. coli* by comparison of the carotenoid genes of *Pantoea agglomerans* and *Pantoea ananatis*." *Appl. Microbiol. Biotechnol.* **74**:131-139.
130. Y. Shiba, E. M. Paradise, J. Kirby, D.-K. Ro, and J. D. Keasling. 2007. "Engineering of the pyruvate dehydrogenase bypass in *Saccharomyces cerevisiae* for high-level production of isoprenoids." *Metab. Eng.* **9**:160-168.
131. D. J. Pitera, C. J. Paddon, J. D. Newman, and J. D. Keasling. 2007. "Balancing a heterologous mevalonate pathway for improved isoprenoid production in *Escherichia coli*." *Metab. Eng.* **9**:193-207.
132. Y. J. Tang, J. M. Ashcroft, D. Chen, G. Min, C. Kim, B. Murkhejee, C. Larabell, J. D. Keasling, and F. F. Chen. 2007. "Charge-associated effects of fullerene derivatives on microbial structural integrity and central metabolism." *Nanoletters* **7**:754-760.
133. F. Pingitore, Y. Tang, G. H. Kruppa, and J. D. Keasling. 2007. "Analysis of amino acid isotopomers by FT-ICR MS." *Anal. Chem.* **79**:2483-2490.
134. Y. Yoshikuni and J. D. Keasling. 2007. "Pathway engineering by designed divergent evolution." *Curr. Opin. Chem. Biol.* **11**:233-239.
135. M. C. Y. Chang, R. A. Eachus, W. Trieu, D.-K. Ro, and J. D. Keasling. 2007. "Engineering *Escherichia coli* for production of functionalized terpenoids using plant P450s." *Nature Chem. Biol.* **3**:274-277.
136. Y. J. Tang, R. Chakraborty, H. G. Martin, J. Chu, T. C. Hazen, and J. D. Keasling. 2007. "Flux analysis of central metabolic pathways in *Geobacter metallireducens* during reduction of soluble Fe(III)-nitriiotriacetic acid." *Appl. Environ. Microbiol.* **73**:3859-3864.
137. S. H. Yoon, H. M. Park, J. E. Kim, S. H. Lee, M. S. Choi, J. Y. Kim, D. K. Oh, J. D. Keasling, and S. W. Kim. 2007. "Increased beta-carotene production in recombinant *Escherichia coli* harboring an engineered isoprenoid precursor Pathway with mevalonate addition." *Biotechnol. Prog.* **23**:599-605.
138. A. Mukhopadhyay, A. M. Redding, M. P. Joachimiak, A. P. Arkin, S. E. Borglin, P. S. Dehal, R. Chakraborty, J. T. Geller, T. C. Hazen, Q. He, D. C. Joyner, V. J. J. Martin, J. D. Wall, Z. K. Yang,

- J. Zhou, and J. D. Keasling. 2007. "Cell wide responses to low oxygen exposure in *Desulfovibrio vulgaris* Hildenborough." *J. Bacteriol.* **189**:5996-6010.
139. S. K. Lee, H. H. Chou, B.F. Pflieger, J. D. Newman, Y. Yoshikuni, and J. D. Keasling. 2007. "Directed evolution of AraC for improved compatibility of arabinose and lactose-inducible promoters." *Appl. Environ. Microbiol.* **73**:5711-5715.
140. S. T. Withers, S. S. Gottlieb, B. Lieu, J. D. Newman, and J. D. Keasling. 2007. "Identification of isopentenol biosynthetic genes from *Bacillus subtilis* using isoprenoid precursor toxicity." *Appl. Environ. Microbiol.* **73**:6277-6283.
141. K. D. McMahon, S. Yilmaz, S. He, D. L. Gall, D. Jenkins, and J. D. Keasling. 2007. "Polyphosphate kinase genes from full-scale activated sludge plants." *Appl. Microbiol. Biotechnol.* **77**:167-173.
142. B. M. T. da Costa, K. Cornish, and J. D. Keasling. 2007. "Manipulation of intracellular magnesium levels in *Saccharomyces cerevisiae* with deletion of magnesium transporters." *Appl. Microbiol. Biotechnol.* **77**:411-425.
143. R. E. Osterhout, I. A. Figueroa, J. D. Keasling, and A. P. Arkin. 2007. "Global analysis of host response to induction of a latent bacteriophage." *BMC Microbiology.* **7**:82.
144. S. Mahendra, C. J. Petzold, E. E. Baidoo, J. D. Keasling, and L. Alvarez-Cohen. 2007. "Identification of the intermediates of *in vivo* oxidation of 1,4-dioxane by monooxygenase-containing bacteria." *Environ. Sci. Technol.* **144**:7330-7336.
145. P. F. Suthers, A. P. Burgard, M. S. Dasika, F. Nowroozi, S. Van Dien, J. D. Keasling, and C. D. Maranas. 2007. "Metabolic flux elucidation for large-scale models using ¹³C labeled isotopes." *Metab. Eng.* **9**:387-405.
146. V. Hale, J. D. Keasling, N. Renninger, and T. T. Diagana. 2007. "Microbially derived artemisinin: a biotechnology solution to the global problem of access to affordable anti-malarial drugs." *Am. J. Trop. Med. Hyg.* **77**:198-202.
- 2008**
147. H. W. Blanch, P. D. Adams, K. M. Andrews-Cramer, W. B. Frommer, B. A. Simmons, and J. D. Keasling. 2008. "Addressing the need for alternative transportation fuels: the Joint BioEnergy Institute." *ACS Chem. Biol.* **3**:17-20.
148. W. D. Marnier, A. S. Shaikh, S. J. Muller, and J. D. Keasling. 2008. "Morphology of artificial silica matrices formed via autossilification of a silaffin/protein polymer chimera." *Biomacromol.* **9**:1-5.
149. J. D. Keasling. 2008. "Synthetic biology for synthetic chemistry." *ACS Chem. Biol.* **3**:64-76.
150. A. S. Shaikh, Y. J. Tang, A. Mukhopadhyay, and J. D. Keasling. 2008. "Isotopomer distributions in amino acids from a high expressed protein as a proxy for those from total protein." *Anal. Chem.* **80**:886-890.
151. J. D. Keasling and H. Chou. 2008. "Metabolic engineering delivers next-generation biofuels." *Nat. Biotechnol.* **26**:298-299.
152. D. M. Wolf, L. Fontaine-Bodin, I. Bischofs, G. Price, J. Keasling, and A. P. Arkin. 2008. "Memory in microbes: quantifying history-dependent behavior in a bacterium." *PLoS ONE.* **3**:e1700.
153. J. Kirby, D. W. Romanini, E. M. Paradise, and J. D. Keasling. 2008. "Engineering triterpene production in *Saccharomyces cerevisiae* – beta-amyrin synthase from *Artemisia annua*." *FEBS J.* **275**:1852-1859.
154. L. Kizer, D. J. Pitera, B. Pflieger, and J. D. Keasling. 2008. "Functional genomics for pathway optimization: application to isoprenoid production." *Appl. Environ. Microbiol.* **74**:3229-3241.
155. E. E. K. Baidoo, P. I. Benke, C. Neussus, M. Pelzing, G. Kruppa, J. A. Leary, and J. D. Keasling. 2008. "Capillary electrophoresis-Fourier transform ion cyclotron resonance mass spectrometry for the identification of cationic metabolites via a pH-mediated stack-transient isotachopheric method." *Anal. Chem.* **80**:3112-3122.
156. E. M. Paradise, J. Kirby, R. Chan, and J. D. Keasling. 2008. "Redirection of flux through the FPP branch-point in *Saccharomyces cerevisiae* by downregulating squalene synthase." *Biotechnol. Bioeng.* **100**:371-378.
157. A. Mukhopadhyay, A. M. Redding, B. J. Rutherford, and J. D. Keasling. 2008. "Importance of systems biology in engineering microbes for biofuel production." *Curr. Opin. Biotechnol.* **19**:228-234.
158. D. E. Garcia, E. E. Baidoo, P. I. Benke, F. Pingitore, Y. J. Tang, S. Villa, and J. D. Keasling. 2008. "Separation and mass spectrometry in microbial metabolomics." *Curr. Opin. Microbiol.* **11**:233-239.
159. J. L. Fortman, S. Chhabra, A. Mukhopadhyay, H. Chou, T. S. Lee, E. Steen, and J. D. Keasling. 2008. "Biofuel alternatives to ethanol: pumping the microbial well." *Trends in Biotechnology.* **26**:375-381.

160. S. P. Gaucher, A. M. Redding, A. Mukhopadhyay, J. D. Keasling, and A. K. Singh. 2008. "Post-translational modifications of *Desulfovibrio vulgaris* Hildenborough sulfate reduction pathway proteins." *J. Proteome Res.* **7**:2320-2331.
161. Y. Yoshikuni, J. A. Dietrich, F. F. Nowroozi, P. C. Babbitt, and J. D. Keasling. 2008. "Redesigning enzymes based on adaptive evolution for optimal function in synthetic metabolic pathways." *Chem. Biol.* **15**:607-618.
162. T. S. Ham, S. K. Lee, J. D. Keasling, and A. P. Arkin. 2008. "Design and construction of a double inversion recombination switch for heritable sequential genetic memory." *Plos One* **3**:e2815.
163. J. Kirby and J. D. Keasling. 2008. "Metabolic engineering of microorganisms for isoprenoid production." *Nat. Prod. Rep.* **25**:656-661.
164. J. D. Keasling. 2008. "From yeast to alkaloids" *Nat. Chem. Biol.* **4**:524-525.
165. S. K. Lee and J. D. Keasling. 2008. "Heterologous protein production in *Escherichia coli* using the propionate-inducible pPro system by conventional and auto-induction methods." *Prot. Exp. Purif.* **61**:197-203.
166. D. Lubertozzi and J. D. Keasling. 2008. "Expression of a synthetic *Artemisia annua* amorphaadiene synthase in *Aspergillus nidulans* yields altered product distribution." *J. Ind. Microbiol. Biotechnol.* **35**:1191-1198.
167. W. Shui, L. Sheu, J. Liu, B. Smart, C. J. Petzold, T. Y. Hsieh, A. Pitcher, J. D. Keasling, and C. R. Bertozzi. 2008. "Membrane proteomics of phagosomes suggests a connection to autophagy." *Proc. Natl. Acad. Sci. USA* **105**:16952-16957.
168. S. K. Lee, H. Chou, T. S. Ham, T. S. Lee and J. D. Keasling. 2008. "Metabolic engineering of microorganisms for biofuels production: from bugs to synthetic biology to fuels." *Curr. Opin. Biotechnol.* **19**:556-563.
169. D.-K. Ro, M. Ouellet, E. M. Paradise, H. Burd, D. Eng, C. J. Paddon, J. D. Newman, and J. D. Keasling. 2008. "Induction of multiple pleiotropic drug resistance genes in yeast engineered to produce an increased level of antimalarial drug precursor, artemisinic acid." *BMC Biotechnol.* **8**:83 DOI:10.1186/1472-6750-8-83.
170. E. J. Steen, R. Chan, N. Prasad, S. Myers, C. J. Petzold, A. Redding, M. Ouellet, and J. D. Keasling. 2008. "Metabolic engineering of *Saccharomyces cerevisiae* for the production of n-butanol." *Microb. Cell Fact.* **7**:36-43.

2009

171. J. R. Anthony, L. C. Anthony, F. Nowroozi, G. Kwon, J. D. Newman, and J. D. Keasling. 2009. "Optimization of the mevalonate-based isoprenoid biosynthetic pathway in *E. coli* for production of the anti-malarial drug precursor amorpha-4,11-diene." *Met. Eng.* **11**:13-19.
172. D. Lubertozzi and J. D. Keasling. 2009. "Developing *Aspergillus* as a host for heterologous expression." *Biotechnol. Adv.* **27**:53-75.
173. W. Shui, S. A. Gilmore, L. Sheu, J. Liu, J. D. Keasling, and C. R. Bertozzi. 2009. Quantitative proteomic profiling of host-pathogen interactions: the macrophage response to *Mycobacterium tuberculosis*. *J. Proteome Res.* **8**:282-289.
174. Y. J. Tang, H. G. Martin, P. S. Dehal, A. Deutschbauer, X. Llorca, A. Meadows, A. Arkin, and J. D. Keasling. 2009. "Metabolic flux analysis of *Shewanella* spp. reveals evolutionary robustness in central carbon metabolism." *Biotechnol. Bioeng.* **102**:1161-1169.
175. Y. J. Tang, H. Garcia Martin, S. Myers, S. Rodriguez, E. E. K. Baidoo, and J. D. Keasling. 2009. "Advances in analysis of microbial metabolic fluxes via ¹³C isotopic labeling." *Mass Spec. Rev.* **28**:362-375.
176. H. Tsuruta, C. J. Paddon, D. Eng, J. R. Lenihan, T. Horning, L. C. Anthony, R. Regentin, J. D. Keasling, N. S. Renninger, and J. D. Newman. 2009. "High-level production of amorpha-4,11-diene, a precursor of the antimalarial agent artemisinin, in *Escherichia coli*." *PLOS One* **4**:e4489 DOI:10.1371.
177. Y. J. Tang, R. Sapra, D. Joyner, T. C. Hazen, S. Myers, D. Reichmuth, H. Blanch, and J. D. Keasling. 2009. "Analysis of metabolic pathways and fluxes in a newly discovered thermophilic and ethanol-tolerant *Geobacillus* strain." *Biotechnol. Bioeng.* **102**:1377-1386.
178. W. D. Marner, A. Shaikh, S. J. Muller, and J. D. Keasling. 2009. "Enzyme immobilization via silaffin-mediated autoencapsulation in a biosilica support." *Biotech. Prog.* **25**:417-423.
179. J. Dietrich, Y. Yoshikuni, K. Fisher, F. Woolard, D. Ockey, D. McPhee, N. Renninger, M. Chang, D. Baker, and J. D. Keasling. 2009. "A novel semi-biosynthetic route for artemisinin production using engineered substrate-promiscuous P450BM3." *ACS Chem. Biol.* **4**:261-267.
180. J. Kirby and J. D. Keasling. 2009. "Biosynthesis of plant isoprenoids: perspectives for microbial engineering." *Annu. Rev. Plant Biol.* **60**:335-355.
181. D. A. Elias, A. Mukhopadhyay, M. P. Joachimiak, E. C. Drury, A. M. Redding, H. C. Yen, M. W. Fields, T. C. Hazen, A. P. Arkin, J. D. Keasling, J. D. Wall. 2009. "Expression profiling of

- hypothetical genes in *Desulfovibrio vulgaris* leads to improved functional annotation." *Nucl. Acids Res.* **37**:2926-2939.
182. S. H. Yoon, S. H. Lee, A. Das, H. K. Ryu, H. J. Jang, J. Y. Kim, D. K. Oh, J. D. Keasling, and S. W. Kim. 2009. "Combinatorial expression of bacterial whole mevalonate pathway for production of beta-carotene in *E. coli*." *J. Biotechnol.* **140**:218-226.
 183. Y. J. Tang, W. Shui, S. Myers, X. Feng, C. Bertozzi, J. D. Keasling. 2009. "Central metabolism in *Mycobacterium smegmatis* during the transition from O(2)-rich to O (2)-poor conditions as studied by isotopomer-assisted metabolite analysis." *Biotechnol. Lett.* **31**:1233-1240.
 184. J. E. Dueber, G. C. Wu, G. R. Malmirchegini, T. S. Moon, C. J. Petzold, A. V. Ullal, K. J. Prather, and J. D. Keasling. 2009. "Synthetic protein scaffolds provide modular control over metabolic flux." *Nat. Biotechnol.* **27**:753-759.
 185. Y. J. Tang, S. Yi, W.-Q. Zhuang, S. H. Zinder, J. D. Keasling, L. Alvarez-Cohen. 2009. "Investigation of carbon metabolism in *Dehalococcoides ethenogenes* strain 195 using isotopomer and transcriptomic analyses." *J. Bacteriol.* **191**:5224-5231.
 186. Z. Li, T. K. Ahn, T. J. Avenson, M. Ballottari, J. A. Cruz, D. M. Kramer, R. Bassi, G. R. Fleming, J. D. Keasling, and K. K. Niyogi. 2009. "Lutein accumulation in the absence of zeaxanthin restores nonphotochemical quenching in the *Arabidopsis thaliana npq1* mutant." *Plant Cell* **21**:1798-1812.
 187. Y. J. Tang, H. G. Martin, A. Deutschbauer, X. Feng, R. Huang, X. Liora, A. Arkin, and J. D. Keasling. 2009. "Invariability of central metabolic flux distribution in *Shewanella oneidensis* MR-1 under environmental or genetic perturbations." *Biotechnol. Prog.* **25**:1254-1259.
 188. J. M. Carothers, J. A. Goler, and J. D. Keasling. 2009. "Chemical synthesis using synthetic biology." *Curr. Opin. Biotechnol.* **20**:498-503.
- 2010**
189. M. Ouellet, P. D. Adams, J. D. Keasling, and A. Mukhopadhyay. 2010. "A rapid and inexpensive method for microarray gene expression analysis." *BMC Biotechnol.* **9**:97 DOI:10.1186/1472-6750-9-97.
 190. E. J. Steen, Y. Kang, G. Bokinsky, Z. Hu, A. Schirmer, A. McClure, S. B. del Cardayre and J. D. Keasling. 2010. "Microbial production of fatty acid-derived fuels and chemicals from plant biomass." *Nature* **463**:559-562.
 191. W. J. Holtz and J. D. Keasling. 2010. "Engineering static and dynamic control of synthetic pathways." *Cell* **140**:19-23.
 192. H. R. Beller, E.-B. Goh, and J. D. Keasling. 2010. "Genes involved in long-chain alkene biosynthesis in *Micrococcus luteus*." *Appl. Environ. Microbiol.* **76**:1212-1223.
 193. J. Anderson, J. E. Dueber, M. Leguia, G. C. Wu, J. A. Goler, A. P. Arkin, J. D. Keasling. 2010. "BglBricks: A flexible standard for biological part assembly." *J. Biol. Eng.* **4**:1-12.
 194. Z. He, A. Zhou, E. Baidoo, Q. He, M. P. Joachimiak, P. Benke, R. Phan, A. Mukhopadhyay, C. L. Hemme, K. Huang, E. J. Alm, M. W. Fields, J. Wall, D. Stahl, T. C. Hazen, J. D. Keasling, A. P. Arkin, and J. Zhou. 2010. "Global transcriptional, physiological and metabolite analyses of *Desulfovibrio vulgaris* Hildenborough responses to salt adaptation." *Appl. Environ. Microbiol.* **76**:1574-1586.
 195. P. P. Peralta-Yahya and J. D. Keasling. 2010. "Advanced biofuel production in microbes." *Biotechnol. J.* **5**:147-162.
 196. A. S. Shaikh, Y. J. Tang, A. Mukhopadhyay, H. G. Martín, J. Gin, P. Benke, and J. D. Keasling. 2010. "Study of stationary phase metabolism via isotopomer analysis of amino acids from an isolated protein." *Biotechnol. Prog.* **26**:52-56.
 197. B. J. Rutherford, R. H. Dahl, R. E. Price, H. L. Szmids, P. L. Benke, A. Mukhopadhyay, and J. D. Keasling. 2010. "Functional genomic study of exogenous n-butanol stress in *Escherichia coli*." *Appl. Environ. Microbiol.* **76**:1935-1945.
 198. J. M. Carothers, J. A. Goler, Y. Kapoor, L. Lara, and J. D. Keasling. 2010. "Selecting RNA aptamers for synthetic biology: investigating magnesium dependence and predicting binding affinity." *Nucl. Acids Res.* **38**:2736-2747.
 199. J. A. Dietrich, A. E. McKee, and J. D. Keasling. 2010. "High-throughput metabolic engineering: advances in small-molecule screening and selection." *Annu. Rev. Biochem.* **79**:563-590.
 200. M. de la Pena Mattozzi and J. D. Keasling. 2010. "Rationally engineered biotransformation of *p*-nitrophenol." *Biotechnol. Prog.* **26**:616-621.
 201. H. V. Scheller, S. Singh, H. Blanch, and J. D. Keasling. 2010. "The Joint BioEnergy Institute (JBEI): Developing new biofuels by overcoming biomass recalcitrance." *Bioenerg. Res.* **3**:105-107.
 202. J. Kirby, M. Nishimoto, J. G. Park, S. T. Withers, F. Nowroozi, D. Behrendt, E. J. Rutledge, J. L. Fortman, H. E. Johnson, J. V. Anderson, and J. D. Keasling. 2010. "Cloning of casbene and neocembrene synthases from *Euphorbiaceae* plants and expression in *Saccharomyces cerevisiae*." *Phytochem.* **71**:1466-1473.

203. L. Prach, J. Kirby, J. D. Keasling, T. Alber. 2010. "Diterpene production in *Mycobacterium tuberculosis*." *FEBS J.* **277**:3588-3595.
204. M. J. Dunlop, J. D. Keasling, and A. Mukhopadhyay. 2010. "A model for improving microbial biofuel production using a synthetic feedback loop." *Syst. Synth. Biol.* **4**:95-104.
205. C. Wang, S. H. Yoon, A. A. Shah, Y. R. Chung, J. Y. Kim, E. S. Choi, J. D. Keasling, and S. W. Kim. 2010. "Farnesol production from *Escherichia coli* by harnessing the exogenous mevalonate pathway." *Biotechnol. Bioeng.* **107**:421-429.
206. Q. He, Z. He, D. C. Joyner, M. Joachimiak, M. N. Price, Z. K. Yang, H.-C. B. Yen, C. L. Hemme, W. Chen, M. M. Fields, D. A. Stahl, J. D. Keasling, M. Keller, A. P. Arkin, T. C. Hazen, J. D. Wall, and J. Zhou. 2010. "Impact of elevated nitrate on sulfate-reducing bacteria: a comparative study of *Desulfovibrio vulgaris*." *ISME J.* **4**:1386-1397.
207. A. Zhou, Z. He, A. M. Redding-Johanson, A. Mukhopadhyay, C. L. Hemme, M. P. Joachimiak, F. Lou, Y. Deng, K. S. Bender, Q. He, J. D. Keasling, D. A. Stahl, M. W. Fields, T. C. Hazen, A. P. Arkin, J. D. Wall, and J. Zhou. 2010. "Hydrogen peroxide-induced oxidative stress responses in *Desulfovibrio vulgaris* Hildenborough." *Environ. Microbiol.* **12**:2645-2657.
208. J. D. Keasling. 2010. "Manufacturing molecules through metabolic engineering." *Science* **330**:1355-1358.
209. C. Rautengarten, E. Baidoo, J. D. Keasling and H. V. Scheller. 2010. "A simple method for enzymatic synthesis of unlabeled and radiolabeled hydroxycinnamate-CoA." *Bioenergy Res.* **3**:115-122.
210. W. Shui, C. J. Petzold, A. M. Redding, J. Liu, A. Pitcher, L. Sheu, C. R. Bertozzi, and J. D. Keasling. 2011. "Organelle membrane proteomics reveals differential influence of mycobacterial lipoglycans on macrophage phagosome maturation and autophagosome accumulation." *J. Proteome Res.* **10**:339-348.
211. A. Eudes, E. E. Baidoo, F. Yang, H. Burd, M. Z. Hadi, F. W. Collins, J. D. Keasling, and D. Loqué. 2010. "Production of tranilast [N-(3',4'-dimethoxycinnamoyl)-anthranilic acid] and its analogs in yeast *Saccharomyces cerevisiae*." *Appl. Microbiol. Biotechnol.* **89**:989-1000.
- 2011**
212. C. J. Joshua, R. Dahl, P. I. Benke, and J. D. Keasling. 2011. "Absence of diauxie during simultaneous utilization of glucose and xylose by *Sulfolobus acidocaldarius*." *J. Bacteriol.* **193**:1293-1301.
213. A. M. Redding-Johanson, T. S. Batth, R. Chan, R. Krupa, H. L. Szmids, P. D. Adams, J. D. Keasling, T. S. Lee, A. Mukhopadhyay, C. J. Petzold. 2011. "Targeted proteomics for metabolic pathway optimization: application to terpene production." *Metab. Eng.* **13**:194-203.
214. M. J. Dunlop, H. L. Szmids, H. C. Chu, J. D. Keasling, M. Hadi, A. Mukhopadhyay. 2011. "A targeted bioprospecting approach for engineering microbial biofuel tolerance." *Mol. Sys. Biol.* **7**:487.
215. M. Hajimorad, P. R. Gray, J. D. Keasling. 2011. "A framework and model system to investigate linear system behavior in *Escherichia coli*." *J. Biol. Eng.* **5**:3.
216. F. Zhang and J. D. Keasling. 2011. "Biosensors and their applications in microbial metabolic engineering." *Trends Microbiol.* **19**:323-329.
217. S. R. Chhabra, M. P. Joachimiak, C. J. Petzold, G. M. Zane, M. N. Price, S. A. Reveco, V. Fok, A. R. Johanson, T. S. Batth, M. Singer, J. M. Chandonia, D. Joyner, T. C. Hazen, A. P. Arkin, J. D. Wall, A. K. Singh, and J. D. Keasling. 2011. "Towards a rigorous network of protein-protein interactions of the model sulfate reducer *Desulfovibrio vulgaris* Hildenborough." *PLoS One* **6**:e21470.
218. J. Nielsen and J. D. Keasling. 2011. "Synergies between synthetic biology and metabolic engineering." *Nat. Biotechnol.* **29**:693-695.
219. T. S. Lee, R. A. Krupa, F. Zhang, M. Hajimorad, W. J. Holtz, N. Prasad, S. K. Lee, and J. D. Keasling. 2011. "BglBrick vectors and datasheets: a synthetic biology platform for gene expression." *J. Biol. Eng.* **5**:12.
220. P. P. Peralta-Yahya, M. Ouellet, R. Chan, A. Mukhopadhyay, J. D. Keasling, and T. S. Lee. 2011. "Identification and microbial production of a terpene-based advanced biofuel." *Nat. Comm.* **2**:483.
221. S. M. Ma, D. E. Garcia, A. M. Redding-Johanson, G. D. Friedland, R. Chan, T. S. Batth, J. R. Haliburton, D. Chivian, J. D. Keasling, C. J. Petzold, T. S. Lee, S. R. Chhabra. 2011. "Optimization of a heterologous mevalonate pathway through use of variant HMG-CoA reductases." *Met. Eng.* **13**:588-597.
222. S. R. Chhabra, G. Butland, D. Elias, J.-M. Chandonia, O.-Y. Fok, T. Juba, A. Gorur, S. Allen, C. M. Leung, K. Keller, S. Reveco, G. Zane, E. Semkiw, R. Prathapam, B. Gold, M. Singer, M. Ouellet, E. Szakal, D. Jorgens, M. Price, E. Witkowska, H. Beller, T. C. Hazen, M. D. Biggin, M. Auer, J. Wall,

- and J. D. Keasling. 2011. "Generalized schemes for high throughput manipulation of the *Desulfovibrio vulgaris* Hildenborough genome". *Appl. Environ. Microbiol.* **77**:7595-7604.
223. H. R. Beller, E. B. Goh, and J. D. Keasling. 2011. "Definitive alkene identification needed for in vitro studies with ole (olefin biosynthesis) proteins." *J. Biol. Chem.* **286**:1e11.
224. M. Ouellet, S. Datta, D. C. Dibble, P. R. Tamrakar, P. I. Benke, C. Li, S. Singh, K. L. Sale, P. D. Adams, J. D. Keasling, B. A. Simmons, B. M. Holmes and A. Mukhopadhyay. 2011. "Impact of ionic liquid pretreated plant biomass on *Saccharomyces cerevisiae* growth and biofuel production." *Green Chem.* **13**:2743-2749.
225. F. Zhang, S. Rodriguez, and J. D. Keasling. 2011. "Metabolic engineering of microbial pathways for advanced biofuels production." *Curr. Opin. Biotechnol.* **22**:775-783.
226. R. P. McAndrew, P. P. Peralta-Yahya, A. DeGiovanni, J. H. Pereira, M. Z. Hadi, J. D. Keasling, and P. D. Adams. 2011. "Structure of a three-domain sesquiterpene synthase: a prospective target for advanced biofuels production." *Structure* **19**:1876-1884.
227. G. Bokinsky, P. Peralta-Yahya, A. George, B. M. Holmes, E. J. Steen, J. Dietrich, T. S. Lee, D. Tullman-Ereck, C. Voigt, B. A. Simmons, J. D. Keasling. 2011. "Synthesis of three advanced biofuels from ionic liquid-pretreated switchgrass using engineered *Escherichia coli*." *Proc. Natl. Acad. Sci. USA* **108**:19949-19954.
228. J. M. Carothers, J. A. Goler, D. Juminaga, and J. D. Keasling. 2011. "Model-driven engineering of RNA devices to quantitatively program gene expression." *Science* **334**:1716-1719.
229. A. George, K. Tran, T. J. Morgan, P. Benke, C. Berruenco, E. Lorente, B. Wu, J. D. Keasling, B. A. Simmons, and B. Holmes. 2011. "The effect of ionic liquid cation and anion combinations on the macromolecular structure of lignins." *Green Chemistry* **13**:3375-3385.
- 2012**
230. E. B. Goh, E. E. Baidoo, J. D. Keasling, and H. R. Beller. 2012. "Engineering of bacterial methyl ketone synthesis for biofuels." *Appl. Environ. Microbiol.* **78**:70-80.
231. D. Juminaga, E. E. Baidoo, A. M. Redding-Johanson, T. S. Batth, H. Burd, A. Mukhopadhyay, C. J. Petzold, and J. D. Keasling. 2012. "Modular engineering of L-tyrosine production in *Escherichia coli*." *Appl. Environ. Microbiol.* **78**:89-98.
232. D. Groff, P. I. Benke, T. S. Batth, G. Bokinsky, C. J. Petzold, P. D. Adams, and J. D. Keasling. 2012. "Supplementation of intracellular XylR leads to coutilization of hemicellulose sugars." *Appl. Environ. Microbiol.* **78**:2221-2229.
233. Y. Satoh, K. Tajima, M. Munekata, J. D. Keasling, and T. S. Lee. 2012. "Engineering of a tyrosol-producing pathway, utilizing simple sugar and the central metabolite tyrosine, in *Escherichia coli*." *J. Agric. Food Chem.* **60**:979-984.
234. P. J. Westfall, D. J. Pitera, J. R. Lenihan, D. Eng, F. Woolard, R. Regentin, T. Horning, Hiroko Tsuruta, D. Melis, A. Owens, S. Fickes, D. Diola, J. D. Keasling, M. D. Leavell, D. McPhee, N. S. Renninger, J. D. Newman, C. J. Paddon. 2012. "Production of Amorpha-4,11-diene in yeast, and its conversion to dihydroartemisinic acid, precursor to the antimalarial agent artemisinin." *Proc. Natl. Acad. Sci. USA* **109**:E111-E118.
235. Z. Li, J. D. Keasling, and K. Niyogi. 2012. "Overlapping photoprotective function of vitamin E and carotenoids in *Chlamydomonas*." *Plant Phys.* **158**:313-323.
236. S. Kumar, F. M. Hahn, E. Baidoo, T. S. Kahlon, D. F. Wood, C. M. McMahan, K. Cornish, J. D. Keasling, H. Daniell, and M. C. Whalen. 2012. "Remodeling the isoprenoid pathway in tobacco by expressing the cytoplasmic mevalonate pathway in chloroplasts." *Met. Eng.* **14**:19-28.
237. C. Rautengarten, B. Ebert, M. Ouellet, M. Nafisi, E. E.K. Baidoo, P. Benke, M. Stranne, A. Mukhopadhyay, J. D. Keasling, Y. Sakuragi, and H. V. Scheller. 2012. "The Arabidopsis deficient in cutin ferulate (DCF) encodes a transferase required for feruloylation of ω -hydroxy fatty acids in cutin polyester." *Plant Phys.* **158**:654-665.
238. K. Deng, K. W. George, W. Reindl, J. D. Keasling, P. D. Adams, T. S. Lee, A. K. Singh, and T. R. Northen. 2012. "Encoding substrates with mass tags to resolve stereospecific reactions using Nimzyme." *Rapid Commun. Mass Spectrom.* **26**:611-615.
239. J. Chen, D. Densmore, T. S. Ham, J. D. Keasling, and N. J. Hillson. 2012. "DeviceEditor visual biological CAD canvas." *J. Biol. Eng.* **6**:1.
240. J. D. Keasling. 2012. "Synthetic biology and the development of tools for metabolic engineering." *Met. Eng.* **14**:189-195.
241. F. Zhang, J. M. Carothers, and J. D. Keasling. 2012. "Design of a dynamic sensor-regulator system for production of chemicals and fuels derived from fatty acids." *Nat. Biotechnol.* **30**:354-359.
242. A. Eudes, A. George, P. Mukerjee, J. S. Kim, B. Pollet, P. I. Benke, F. Yang, P. Mitra, L. Sun, O. P. Cetinkol, S. Chabout, G. Mouille, L. Soubigou-Taconnat, S. Balzergue, S. Singh, B. M. Holmes, A. Mukhopadhyay, J. D. Keasling, B. A. Simmons, C. Lapierre, J. Ralph, D. Loqué. 2012.

- "Biosynthesis and incorporation of side-chain-truncated lignin monomers to reduce lignin polymerization and enhance saccharification." *Plant Biotechnol J.* **10**:609-620.
243. X. Xie, J. Kirby, and J. D. Keasling. 2012. "Functional characterization of four sesquiterpene synthases from *Ricinus communis* (Caster Bean)." *Phytochemistry* **78**:20-28.
244. P. Singh, T. S. Batth, D. Juminaga, R. H. Dahl, J. D. Keasling, P. D. Adams, and C. J. Petzold. 2012. "Application of targeted proteomics to metabolically engineered *Escherichia coli*." *Proteomics* **12**:1289-1299.
245. J. L. Park, E. J. Steen, H. Burd, S. S. Evans, A. M. Redding-Johanson, T. Batth, P. I. Benke, P. D'haeseleer, N. Sun, K. L. Sale, J. D. Keasling, C. J. Petzold, A. Mukhopadhyay, S. W. Singer, B. A. Simmons, and J. M. Gladden. 2012. "A thermophilic ionic liquid-tolerant cocktail for the production of cellulosic biofuels." *PLoS One* **7**:e37010.
246. Z. Chen, G. D. Friedland, J. H. Pereira, S. A. Reveco, R. Chan, J. I. Park, M. P. Thelen, P. D. Adams, A. P. Arkin, J. D. Keasling, H. W. Blanch, B. A. Simmons, D. Chivian, and S. R. Chhabra. 2012. "Tracing determinants of dual-substrate specificity in glycoside hydrolase family 5." *J. Biol. Chem.* **287**:25335-25343.
247. Y. Xiao, T. Savchenko, E. E. Baidoo, W. E. Chehab, D. M. Hayden, V. Tolstikov, J. A. Corwin, D. J. Kliebenstein, J. D. Keasling, and K. Dehesh. 2012. "Retrograde signaling by the plastidial metabolite MEcPP regulates expression of nuclear stress-response genes." *Cell* **149**:1525-1535.
248. M. E. Clark, Z. He, A. M. Redding, M. P. Joachimiak, J. D. Keasling, J. Zhou, A. P. Arkin, A. Mukhopadhyay, and M. W. Fields. 2012. "Transcriptomic and proteomic analyses of *Desulfovibrio vulgaris* biofilms: carbon and energy flow contribute to the distinct biofilm growth state." *BMC Genomics* **13**:138.
249. P. P. Peralta-Yahya, F. Zhang, S. B. del Cardayre, and J. D. Keasling. 2012. "Microbial engineering for the production of advanced biofuels." *Nature* **488**:320-328.
250. J. Perez-Gil, E. M. Uros, S. Sauret-Gueto, L. M. Lois, J. Kirby, M. Nishimoto, E. E. K. Baidoo, J. D. Keasling, A. Boronat, and M. Rodriguez-Concepcion. 2012. "Mutations in *Escherichia coli aceE* and *rib* genes allow survival of strains defective in the first step of the isoprenoid biosynthesis pathway." *PLoS One* **7**(8):e43775.
251. E. A. Rennie, S. F. Hansen, E. Baidoo, M. Hadi, J. D. Keasling, H. Scheller. 2012. "Three members of the Arabidopsis glycosyltransferase family 8 are xylan glucuronosyltransferases." *Plant Physiol.* **159**:1408-1417.
252. N. J. Hillson, R. D. Rosengarten, and J. D. Keasling. 2012. "j5 DNA assembly design automation software." *ACS Syn. Biol.* **1**:14-21.
253. J. H. Pereira, E.-B. Goh, J. D. Keasling, H. R. Beller, and P. D. Adams. 2012. "Structure of FabH and factors affecting the distribution of branched fatty acids in *Micrococcus luteus*." *Acta Crystallographica D.* **68**:1320-1328.
254. S. Yuzawa, W. Kim, L. Katz, and J. D. Keasling. 2012. "Heterologous production of polyketides by modular type I polyketide synthases in *Escherichia coli*." *Curr. Opin. Biotechnol.* **23**:725-735.
255. C. B. Walker, A. M. Redding-Johanson, E. Baidoo, L. Rajeev, Z. He, E. L. Hendrickson, M.P. Joachimiak, S. Stolyar, A. P. Arkin, J. A. Leigh, J. Zhou, J. D. Keasling, A. Mukhopadhyay, and D. A. Stahl. 2012. "Functional response of methanogenic archaea to syntrophic growth." *ISME J.* **6**:2045-2055.
256. H. H. Chou and J. D. Keasling. 2012. "Five-carbon alcohols are produced from isopentenyl diphosphate using a synthetic pathway." *Appl. Environ. Microbiol.* **78**:7829-7855.
257. D. Chiniquy, V. Sharma, A. Schultink, E. E. Baidoo, C. Rautengarten, K. Cheng, A. Carroll, P. Ulvskov, J. Harholt, J. D. Keasling, M. Pauly, H. V. Scheller, and P. C. Ronald. 2012. "XAX1 from glycosyltransferase family 61 mediates xylosyltransfer to rice xylan." *Proc. Natl. Acad. Sci. USA* **109**:17117-17122.
258. T. S. Ham, Z. Dmytriv, H. Plahar, J. Chen, N. J. Hillson, and J. D. Keasling. 2012. "Design, implementation and practice of JBEI-ICE: an open source biological part registry platform and tools." *Nucl. Acids Res.* **40**:e141. DOI: 10.1093/nar/gks531.
259. F. Zhang, M. Ouellet, T. Batth, P. D. Adams, C. J. Petzold, A. Mukhopadhyay, and J. D. Keasling. 2012. "Enhancing fatty acid production by the expression of the regulatory transcription factor FadR." *Met. Eng.* **14**:653-660.
260. A. E. Mckee, B. J. Rutherford, D. C. Chivian, E. K. Baidoo, D. Juminaga, D. Kuo, P. I. Benke, J. A. Dietrich, S. M. Ma, A. P. Arkin, C. J. Petzold, P. D. Adams, J. D. Keasling and S. R. Chhabra. 2012. "Manipulation of the carbon storage regulator system for metabolite remodeling and biofuel production in *Escherichia coli*." *Microb. Cell Fact.* **11**:79. DOI:10.1186/1475-2859-11-79.
261. J. D. Keasling, A. Mendoza, and P. S. Baran. 2012. "Synthesis: A constructive debate." *Nature* **492**:188-189.

262. Y. Satoh, K. Tajima, M. Munekata, J. D. Keasling, and T. S. Lee. 2012. "Engineering of L-tyrosine oxidation in *Escherichia coli* and microbial production of hydroxytyrosol." *Met. Eng.* **14**:603-610.
263. J. D. Keasling. 2012. "Engineering biology for drugs and fuels." *Proc. Amer. Philosoph. Soc.* **156**:283-294.
264. Y. Kung, W. Runguphan, and J. D. Keasling. 2012. "From fields to fuels: recent advances in the microbial production of biofuels." *ACS Synth. Biol.* **1**:498-513.
265. S. Yuzawa, N. Chiba, L. Katz, and J. D. Keasling. 2012. "Construction of a part of a 3-hydroxypropionate cycle for heterologous polyketide biosynthesis in *Escherichia coli*." *Biochemistry* **51**:9779-9781.

2013

266. S. M. Paap, T. H. West, D. K. Manley, E. J. Steen, H. R. Beller, J. D. Keasling, D. C. Dibble, S. Chana, and B. A. Simmons. 2013. "Biochemical production of ethanol and fatty acid ethyl esters from switchgrass: A comparative analysis of environmental and economic performance." *Biomass Bioenergy* **49**:49-62.
267. B. Ozaydin, H. Burd, T. S. Lee, and J. D. Keasling. 2013. "Carotenoid-based phenotypic screen of the yeast deletion collection reveals new genes with roles in isoprenoid production." *Met. Eng.* **15**:174-183.
268. J. A. Dietrich, D. L. Shis, A. Alikhani, and J. D. Keasling. 2013. "Transcription factor-based screens and synthetic selections for microbial small-molecule biosynthesis." *ACS Synth. Biol.* **2**:47-58.
269. L. E. Bartley, M. L. Peck, S. R. Kim, B. Ebert, C. Maniseri, D. Chiniquy, R. Sykes, L. Gao, C. Rautengarten, M. E. Vega-Sanchez, P. I. Benke, P. E. Canlas, P. Cao, S. Brewer, F. Lin, W. L. Smith, X. Zhang, J. D. Keasling, R. E. Jentoft, S. B. Foster, J. Zhou, A. Ziebell, G. An, H. V. Scheller, and P. D. Ronald. 2013. "Overexpression of a BAHD Acyltransferase, OsAt10, alters rice cell wall hydroxycinnamic acid content and saccharification." *Plant Physiol.* **161**:1615-1633.
270. V. K. Mutalik, J. C. Guimaraes, G. Cambray, Q. A. Mai, M. J. Christoffersen, L. Martin, A. Yu, C. Lam, C. Rodriguez, G. Bennett, J. D. Keasling, D. Endy, and A. P. Arkin. 2013. "Quantitative estimation of activity and quality for collections of functional genetic elements." *Nat. Methods* **10**:347-353.
271. V. K. Mutalik, J. C. Guimaraes, G. Cambray, C. Lam, M. J. Christoffersen, Q. A. Mai, A. B. Tran, M. Paull, J. D. Keasling, A. P. Arkin, and D. Endy. 2013. "Precise and reliable gene expression via standard transcription and translation initiation elements." *Nat. Methods* **10**:354-360.
272. C. J. Paddon, P. J. Westfall, D. J. Pitera, K. Benjamin, K. Fisher, D. McPhee, M. D. Leavell, A. Tai, A. Main, D. Eng, D. R. Polichuk, K. H. Teoh, D. W. Reed, T. Treynor, J. Lenihan, M. Fleck, S. Bajad, G. Dang, D. Diola, G. Dorin, K. W. Ellens, S. Fickes, J. Galazzo, S. P. Gaucher, T. Geistlinger, R. Henry, M. Hepp, T. Horning, T. Iqbal, H. Jiang, L. Kizer, B. Lieu, D. Melis, N. Moss, R. Regentin, S. Secrest, H. Tsuruta, R. Vazquez, L. F. Westblade, L. Xu, M. Yu, Y. Zhang, L. Zhao, J. Lievense, P. S. Covello, J. D. Keasling, K. K. Reiling, N. S. Renninger & J. D. Newman. 2013. "High-level semi-synthetic production of the potent antimalarial artemisinin." *Nature* **496**:528-532.
273. D. Groff, A. George, N. Sun, N. Sathitsuksanoh, G. Bokinsky, B. A. Simmons, B. M. Holmes, and J. D. Keasling. 2013. Acid enhanced ionic liquid pretreatment of biomass. *Green Chem.* **15**:1264-1267.
274. T. de Rond, P. Peralta-Yahya, X. Cheng, T. R. Northen, and J. D. Keasling. 2013. "Versatile synthesis of probes for high throughput enzyme activity screening." *Anal. Bioanal. Chem.* **405**:4969-4973.
275. S. Boutigny, A. Saini, E. E. K. Baidoo, N. Yeung, J. D. Keasling, and G. Butland. 2013. "Physical and functional interactions of a monothiol glutaredoxin and an iron sulfur cluster carrier protein with the sulfur-donating radical S-adenosyl-L-methionine enzyme MiaB." *J. Biol. Chem.* **288**:14200-14211.
276. G. Bokinsky, E. E.K. Baidoo, S. Akella, H. Burd, D. Weaver, J. Alonso-Gutierrez, H. García-Martín, T. S. Lee, J. D. Keasling. 2013. "HipA-triggered growth arrest and β -lactam tolerance in *Escherichia coli* is mediated by RelA-dependent ppGpp synthesis." *J. Bacteriol.* **195**:3173-3182.
277. S. Yuzawa, C. Eng, L. Katz, and J. D. Keasling. 2013. "Broad substrate specificity of the loading didomain of the lipomycin polyketide synthase." *Biochemistry* **52**:3791-3793.
278. G. Linshiz, N. Stawski, S. Poust, C. Bi, J. D. Keasling, and N. J. Hillson. 2013. "PaR-PaR laboratory automation platform." *ACS Synth. Biol.* **2**:216-222.
279. J. Alonso-Gutierrez, R. Chan, T. S. Batth, P. D. Adams, J. D. Keasling, C. J. Petzold, and T. S. Lee. 2013. "Metabolic engineering of *Escherichia coli* for limonene and perillyl alcohol production." *Met. Eng.* **19**:33-41.
280. A. Eudes, D. Juminaga, E. E. Baidoo, F. W. Collins, J. D. Keasling, and D. Loque. 2013. "Production of hydroxycinnamoyl anthranilates from glucose in *Escherichia coli*." *Microb. Cell Fact.* **12**:62

281. H. H. Chou and J. D. Keasling. 2013. "Programming adaptive control to evolve increased metabolite production." *Nat. Commun.* **4**:2595. DOI: 10.1038/ncomms3595.
282. A. Zhou, E. Baidoo, Z. He, A. Mukhopadhyay, J. K. Baumohl, P. Benke, M. P. Joachimiak, M. Xie, R. Song, A. P. Arkin, T. C. Hazen, J. D. Keasling, J. D. Wall, D. A. Stahl and J. Zhou. 2013. "Characterization of NaCl tolerance in *Desulfovibrio vulgaris* Hildenborough through experimental evolution." *ISME J.* **7**(9):1790-1802.
283. S. Gille, V. Sharma, E. E. Baidoo, J. D. Keasling, H. V. Scheller, and M. Pauly. 2013. "Arabinosylation of a Yarrowia precipitable cell wall polymer impacts plant growth as exemplified by the Arabidopsis glycosyltransferase mutant ray1." *Mol. Plant* **6**(4):1369-1372.
284. R. H. Dahl, F. Zhang, J. Alonso-Gutierrez, E. Baidoo, T. S. Batth, A. M. Redding-Johanson, C. J. Petzold, A. Mukhopadhyay, T. Soon Lee, P. D. Adams, and J. D. Keasling. 2013. "Engineering dynamic pathway regulation using stress-response promoters." *Nat. Biotechnol.* **31**(11):1039-1046. DOI: 10.1038/nbt.2689.
285. J. D. Keasling and J. C. Venter. 2013. "Applications of synthetic biology to enhance life." *The Bridge* **43**:47-58.
286. C. J. Joshua, L. D. Perez, and J. D. Keasling. 2013. "Functional Characterization of the Origin of Replication of pRN1 from *Sulfolobus islandicus* REN1H1." *PLoS ONE* **8**(12):e84664. DOI:10.1371/journal.pone.0084664
287. H. L. Szmidt-Middleton, M. Ouellet, P. D. Adams, J. D. Keasling, and A. Mukhopadhyay. 2013. "Utilizing a highly responsive gene, *yhjX*, in *E. coli* based production of 1,4-butanediol." *Chem. Eng. Sci.* **103**:68-73.
288. H. M. Woo, G. W. Murray, T. S. Batth, N. Prasad, P. D. Adams, J. D. Keasling, C. J. Petzold, and T. S. Lee. 2013. "Application of targeted proteomics and biological parts assembly in *E. coli* to optimize the biosynthesis of an anti-malarial drug precursor, amorpho-4,11-diene." *Chem. Eng. Sci.* **103**:21-28.

2014

289. J. Ito, T. Herter, E. E. Baidoo, J. Lao, M. E. Vega-Sanchez, A. M. Smith-Moritz, P. D. Adams, J. D. Keasling, B. Usadel, C. J. Petzold, and J. L. Heazlewood. 2014. "Analysis of plant nucleotide sugars by hydrophilic interaction liquid chromatography and tandem mass spectrometry." *Anal. Biochem.* **448C**:14-22. DOI: 10.1016/j.ab.2013.11.026.
290. P. Javidpour, J. H. Pereira, E. B. Goh, R. P. McAndrew, S. M. Ma, G. D. Friedland, J. D. Keasling, S. R. Chhabra, P. D. Adams, and H. R. Beller. 2014. "Biochemical and structural studies of NADH-dependent FabG used to increase the bacterial production of fatty acids under anaerobic conditions." *Appl. Environ. Microbiol.* **80**(2):497-505. DOI: 10.1128/AEM.03194-13
291. W. Rungtaphan and J. D. Keasling. 2014. "Metabolic engineering of *Saccharomyces cerevisiae* for production of fatty acid-derived biofuels and chemicals." *Met. Eng.* **21**:103-113.
292. D. E. Garcia and J. D. Keasling. 2014. "Kinetics of phosphomevalonate kinase from *Saccharomyces cerevisiae*." *PLoS One* **9**(1):e87112. DOI: 10.1371/journal.pone.0087112.
293. F. F. Nowroozi, E. E. Baidoo, S. Ermakov, A. M. Redding-Johanson, T. S. Batth, C. J. Petzold, and J. D. Keasling. 2013. "Metabolic pathway optimization using ribosome binding site variants and combinatorial gene assembly." *Appl. Microbiol. Biotechnol.* **98**:1567-1581.
294. S. D. Colloms, C. A. Merrick, F. J. Olorunniji, W. M. Stark, M. C. Smith, A. Osbourn, J. D. Keasling, and S. J. Rosser. 2014. "Rapid metabolic pathway assembly and modification using serine integrase site-specific recombination." *Nucl. Acids Res.* **42**(4).e23. DOI:10.1093/nar/gkt1101.
295. S. Yuzawa, C. H. Eng, L. Katz, and J. D. Keasling. 2014. "Enzyme analysis of the polyketide synthase leads to the discovery of a novel analog of the antibiotic α -lipomycin." *J. Antibiotics* **67**:199-201.
296. J. Nielsen, M. Fusseneggar, J. Keasling, S. Y. Lee, J. C. Liao, K. Prather, and B. Palsson. 2014. "Engineering synergy in biotechnology." *Nat. Chem. Biol.* **10**:319-322.
297. C. J. Paddon and J. D. Keasling. 2014. "Semi-synthetic artemisinin: a model for the use of synthetic biology in pharmaceutical development." *Nat. Rev. Microbiol.* **12**:355-367.
298. J. C. Way, J. J. Collins, J. D. Keasling, and P. A. Silver. 2014. "Integrating biological redesign: where synthetic biology came from and where it needs to go." *Cell* **157**:151-161.
299. T. L. Ruegg, E. M. Kim, B. A. Simmons, J. D. Keasling, S. W. Singer, T. S. Lee, and M. P. Thelen. 2014. "An auto-inducible mechanism for ionic liquid resistance in microbial biofuel production." *Nat. Commun.* **5**:3490.
300. S. Poust, A. Hagen, L. Katz, and J. D. Keasling. 2014. "Narrowing the gap between the promise and the reality of polyketide synthases as a synthetic biology platform." *Curr. Opin. Biotechnol.* **30**:32-39.

301. J. D. Keasling, J. C. Anderson, A. Arkin, G. Church, K. Costa, L. Katz, T. Kortemme, N. Kuldell, W. Lim, S. Marqusee, K. Oye, M. Palmer, K. J. Prather, P. Silver, C. Voigt, and R. Weiss. 2014. "Synthetic biology: A global approach." *Nature* **510**(7504):218.
302. S. Sarria, B. Wong, H. G. Martin, J. D. Keasling, and P. Peralta-Yahya. 2014. "Microbial synthesis of pinine." *ACS Synth. Biol.* **3**:466-475.
303. K. W. George, A. Chen, A. Jain, T. S. Batth, E. E. Baidoo, G. Wang, P. D. Adams, C. J. Petzold, J. D. Keasling, and T. S. Lee. 2014. "Correlation analysis of targeted proteins and metabolites to assess and engineering microbial isopentenol production." *Biotechnol. Bioeng.* **111**(8):1648-1658.
304. A. Ghosh, J. Nilmeier, D. Weaver, P. D. Adams, J. D. Keasling, A. Mukhopadhyay, C. J. Petzold, H. G. Martin. 2014. "A peptide-based method for ¹³C metabolic flux analysis in microbial communities." *PLoS Comp Biol* **10**(9):e1003827. DOI:10.1371/journal.pcbi.1003827
305. N.C. Kvrpides, P. Hugenholtz, J. A. Eisen, T. Woyke, M. Göker, C. T. Parker, R. Amann, B. J. Beck, P. S. Chain, J. Chun, R. R. Colwell, A. Danchin, P. Dawyndt, T. Dedeurwaerdere, E. F. DeLong, J. C. Detter, P. De Vos, T. J. Donohue, X. Z. Dong, D. S. Ehrlich, C. Fraser, R. Gibbs, J. Gilbert, P. Gilna, F. O. Glöckner, J. K. Jansson, J. D. Keasling, R. Knight, D. Labeda, A. Lapidus, J. S. Lee, W. J. Li, J. Ma, V. Markowitz, E. R. Moore, M. Morrison, F. Meyer, K. E. Nelson, M. Ohkuma, C. A. Ouzounis, N. Pace, J. Parkhill, N. Qin, R. Rossello-Mora, J. Sikorski, D. Smith, M. Sozin, R. Stevens, U. Stindl, K. Suzuki, D. Taylor, J. M. Tiedie, B. Tindall, M. Wagner, G. Weinstock, Weissenbach J. White O. Wang J, L. Zhang, Y. G. Zhou, D. Field, W. B. Whitman, G. M. Garrity, H. P. Klenk. 2014. "Genomic encyclopedia of bacteria and archaea: sequencing a myriad of type strains." *PLoS Biol.* **12**(8):e1001920. DOI: 10.1371/journal.pbio.1001920.
306. G. Linshiz, N. Stawski, G. Goyal, C. Bi, S. Poust, M. Sharma, V. Mutalik, J. D. Keasling, and N. J. Hillson. 2014. "PR-PR: cross-platform laboratory automation system." *ACS Synth Biol* **3**(8):515-524.
307. S. Rodriguez, J. Kirby, C. M. Denby, and J. D. Keasling. 2014. "Production and quantification of sesquiterpenes in *Saccharomyces cerevisiae*, including extraction, detection and quantification of terpene products and ket related metabolites." *Nat. Protoc.* **9**(8):1980-96. DOI: 10.1038/nprot.2014.132.
308. L. Rajeev, E. G. Luning, S. Altenburg, G. M. Zane, E. E. Baidoo, M. Catena, J. D. Keasling, J. D. Wall, M. W. Fields, and A. Mukhopadhyay. 2014. "Identification of a cyclic-di-GMP-modulating response regulator that impacts biofilm formation in a model sulfate reducing bacterium." *Front Microbiol* **5**:382. DOI: 10.3389/fmicb.2014.00382.
309. J. Kirby, M. Nishimoto, R. W. Chow, V. N. Pasumarthi, R. Chan, L. J. Chan, C. J. Petzold, and J. D. Keasling. 2014. "Use of non-ionic surfactants for improvement of terpene production in *Saccharomyces cerevisiae*." *Appl. Environ. Microbiol.* **80**(21):6685-6693.
310. T. S. Batth, P. Singh, V. R. Ramakrishnan, M. M. Sousa, L. J. Chan, H. M. Tran, E. G. Luning, E. H. Pan, K. M. Vuu, J. D. Keasling, P. D. Adams, and C. J. Petzold. 2014. "A targeted proteomics toolkit for high-throughput absolute quantification of *Escherichia coli* proteins." *Met. Eng.* **26**:48-59.
311. E.-B. Goh, E. E. Baidoo, H. Burd, T. S. Lee, Jay D Keasling, and H. Beller. 2014. "Substantial improvements in methyl ketone production in *E. coli* and insights on the pathway from in vitro studies." *Met. Eng.* **26**:67-76.
312. S. Poust, I. Yoon, P. D. Adams, L. Katz, C. J. Petzold, and J. D. Keasling. 2014. "Understanding the role of histidine in the GHSxG acyltransferase active site motif: evidence for histidine stabilization of the malonyl-enzyme intermediate." *PLoS One* **9**(10):e109421 DOI:10.1371/journal.pone.0109421.
313. Y. Kung, R. P. McAndrew, X. Xie, C. C. Liu, J. H. Pereira, P. D. Adams, and J. D. Keasling. 2014. "Constructing tailored isoprenoid products by structure-guided modification of geranylgeranyl reductase." *Structure* **22**(7):1028-1036.
314. M. Frederix, K. Hütter, J. Leu, T. S. Batth, W. J. Turner, T. L. Rüegg, H. W. Blanch, B. A. Simmons, P. D. Adams, J. D. Keasling, M. P. Thelen, M. J. Dunlop, C. J. Petzold, and A. Mukhopadhyay. 2014. "Development of a native *Escherichia coli* induction system for ionic liquid tolerance." *PLoS One* **9**(7):e101115. DOI: 10.1371/journal.pone.0101115
315. R. W. Haushalter, W. Kim, T. A. Chavkin, L. The, M. E. Garber, M. Nhan, C. J. Petzold, L. Katz, and J. D. Keasling. 2014. "Production of anteiso-branched fatty acids in *Escherichia coli*; next generation biofuels with improved cold-flow properties." *Met. Eng.* **26**:111-118. DOI, 10.1016/j.ymben.2014.09.002.
316. J. L. Foo, H. M. Jensen, R. H. Dahl, K. George, J. D. Keasling, T. S. Lee, S. Leong, A. Mukhopadhyay. 2014. "Improving microbial biogasoline production in *Escherichia coli* using tolerance engineering." *mBio* **5**(6):e01932-14. DOI: 10.1128/mBio.01932-14.
317. A. Hagen, S. Poust, T. de Rond, S. Yuzawa, L. Katz, P. D. Adams, C. J. Petzold, and J. D. Keasling. 2014. "In vitro analysis of carboxyacyl substrate tolerance in the loading and first extension modules of Borrelidin polyketide synthase." *Biochemistry* **53**:5975-5977.

2015

318. L. J. Weaver, M. M. Sousa, G. Wang, E. Baidoo, C. J. Petzold, and J. D. Keasling. 2015. "A kinetic-based approach to understanding heterologous mevalonate pathway function in *E. coli*." *Biotechnol. Bioeng.* **112**(1):111-119.
319. J. Kirby, M. Nishimoto, R. W. Chow, E. E. Baidoo, G. Wang, J. Martin, W. Schackwitz, R. Chan, J. L. Fortman, and J. D. Keasling. 2015. "Enhancing terpene yield from sugars via novel routes to 1-deoxy-d-xylulose 5-phosphate." *Appl. Environ. Microbiol.* **81**:130-138.
320. J. Alonso-Gutierrez, E.-M. Kim, T. S. Batth, N. Cho, Q. Hu, L. J. G. Chan, C. J. Petzold, N. J. Hillson, P. D. Adams, J. D. Keasling, H. Garcia-Martin, and T. S. Lee. 2015. "Principal component analysis of proteomics (PCAP) as a tool to direct metabolic engineering." *Met. Eng.* **28**:123-133.
321. S. Poust, R. M. Phelan, K. Deng, L. Katz, C. J. Petzold, and J. D. Keasling. 2015. "Divergent mechanistic routes for the formation of gem-dimethyl groups in the biosynthesis of complex polyketides." *Angew. Chem. Int.* **54**:2370-2373.
322. J. B. Siegel, A. L. Smith, S. Poust, A. J. Wargacki, A. Bar-Even, C. Louw, B. W. Shen, C. B. Eiben, H. M. Noor, J. L. Gallaher, J. Bale, Y. Yoshikuni, M. H. Gelb, J. D. Keasling, B. L. Stoddard, M. E. Lidstrom, and D. Baker. 2015. "Computational protein design enables a novel one-carbon assimilation pathway." *Proc. Natl. Acad. Sci. USA* **112**:3705-3709.
323. T. Jakociunas, I. Bonde, M. Herrgard, S. J. Harrison, M. Kristensen, L. E. Pedersen, M. K. Jensen, and J. D. Keasling. 2015. "Multiplex metabolic pathway engineering using CRISPR/Cas9 in *Saccharomyces cerevisiae*." *Metab. Eng.* **28**:213-222.
324. M. K. Jensen and J. D. Keasling. 2015. "Recent applications of synthetic biology tools for yeast metabolic engineering." *FEMS Yeast Res.* **15**:1-10. DOI: 10.1111/1567-1364.12185.
325. C. Scullin, V. Stavila, A. Skarstad, J. D. Keasling, B. A. Simmons, and S. Singh. 2015. "Optimization of renewable pinene production from the conversion of macroalgae *Saccharina latissima*." *Biores. Technol.* **184**:415-420.
326. R. W. Haushalter, D. Groff, S. Deutsch, L. The, T. A. Chavkin, S. F. Brunner, L. Katz, and J. D. Keasling. 2015. "Development of an orthogonal fatty acid biosynthesis system in *E. coli* for oleochemical production." *Metab. Eng.* **30**:1-6.
327. J. Walley, Y. Xiao, J.-Z. Wang, E. E. Baidoo, J. D. Keasling, Z. Shen, S. P. Briggs, and K. Dehesh. 2015. "Plastid-produced interorganellar stress signal MEcPP potentiates induction of the unfolded protein response in endoplasmic reticulum." *Proc. Natl. Acad. Sci. USA* **112**:6212-6217.
328. K. W. George, J. Alonso-Gutierrez, J. D. Keasling, and T. S. Lee. 2015. "Isoprenoid drugs, biofuels, and chemicals-artemisinin, farnesene, and beyond." *Adv. Biochem. Eng. Biotechnol.* **148**:355-389.
329. K. George, M. Thompson, A. Kang, E. Baidoo, G. Wang, L. Chan, P. Adams, C. Petzold, J. Keasling, and T. S. Lee. 2015. "Metabolic engineering for the high-yield production of isoprenoid-based C5 alcohols in *E. coli*." *Sci. Rep.* **5**:11128. DOI: 10.1038/srep11128.
330. C. Ronda, J. Maury, T. Jakociunas, S. A. B. Jacobsen, S. M. Germann, S. J. Harrison, I. Borodina, J. D. Keasling, M. K. Jensen, A. T. Nielsen. 2015. "CRISPR mediated multi-loci gene integration in *Saccharomyces cerevisiae*." *Microb. Cell Fact.* **14**:97.
331. V. Chubukov, F. Mingardon, W. Schackwitz, E. E. Baidoo, J. Alonso-Gutierrez, Q. Hu, T. S. Lee, J. D. Keasling, and A. Mukhopadhyay. 2015. "Acute limonene toxicity in *Escherichia coli* is caused by limonene hydroperoxide and alleviated by a point mutation in alkyl hydroperoxidase (AhpC)." *Appl. Environ. Microbiol.* **81**:4690-4696.
332. R. E. Johnson, T. de Rond, V. N. G. Lindsay, J. D. Keasling, and R. Sarpong. 2015. "Synthesis of cycloprodiginin identifies the natural isolate as a scalemic mixture." *Org. Lett.* **17**:3474-3477.
333. J. F. Barajas, R. M. Phelan, A. J. Schaub, J. T. Kliever, P. J. Kelly, D. R. Jackson, R. Luo, J. D. Keasling and S.-C. Tsai. 2015. "Comprehensive structural analysis of the terminal myxalamid reductase domain for the engineered production of primary alcohols." *Chem. Biol.* **22**(8):1018-29.
334. J. Zhang, M. K. Jensen, and J. D. Keasling. 2015. "Development of biosensors and their application in metabolic engineering." *Curr. Opin. Biotechnol.* **28**:1-8.
335. J. Shi, K. W. George, N. Sun, W. He, C. Li, V. Stavila, J. D. Keasling, B. A. Simmons, T. S. Lee, and S. Singh. 2015. "Impact of pretreatment technologies on saccharification and isopentenol fermentation of mixed lignocellulosic feedstocks." *Bioenerg. Res.* **8**:1004-1013.
336. M. S. Kent, I. C. Avina, N. Rader, M. L. Busse, A. George, N. Sathitsuksanoh, E. Baidoo, Jerilyn Timlin, N. H. Giron, M. C. Celina, L. E. Martin, R. Polsky, V. H. Chavez, D. L. Huber, J. D. Keasling, S. Singh, B. A. Simmons and K. L. Sale. 2015. "Assay for lignin breakdown based on lignin films: insights into the Fenton reaction with insoluble lignin." *Green. Chem.* **17**:4830-4845.
337. H. G. Martín, V. S. Kumar, D. Weaver, A. Ghosh, V. Chubukov, A. Mukhopadhyay, A. Arkin, J. D. Keasling. 2015. "A method to constrain genome-scale models with ¹³C labeling data." *PLoS Comput. Biol.* **11**(9): e1004363. DOI: 10.1371/journal.pcbi.1004363.

338. A. Eudes, N. Sathitsuksanoh, E. Baidoo, A. George, Y. Liang, F. Yang, S. Singh, J. D. Keasling, B. Simmons, D. Loque. 2015. "Expression of a bacterial 3-dehydroshikimate dehydratase reduces lignin content and improves biomass saccharification efficiency." *Plant Biotechnol. J.* **13**:1241-1250.
339. S. C. Shih, G. Goyal, P. W. Kim, N. Koutsoubelis, J. D. Keasling, P. D. Adams, N. J. Hillson, and A. K. Singh. 2015. "A versatile microfluidic device for automating synthetic biology." *ACS Synth. Biol.* **4**(10):1151-1164.
340. L. D'Espaux, D. Mendez-Perez, R. Li, and J. D. Keasling. 2015. "Synthetic biology for production of lipid-based biofuels." *Curr. Opin. Chem. Biol.* **29**:58-65.
341. C. Wenz, C. Barbas, A. Lopez-Gonzalvez, A. Garcia, F. Benavente, V. Sanz-Nebot, T. Blanc, G. Freckleton, P. Britz-McKibbin, M. Shanmuganathan, F. de l'Escaille, J. Far, R. Haselberg, S. Huang, C. Huhn, M. Pattky, D. Michels, S. Mou, F. Yang, C. Neusuess, N. Tromsdorf, E. E. Baidoo, J. D. Keasling, and S. S. Park. 2015. "Interlaboratory study to evaluate the robustness of capillary electrophoresis with mass spectrometry for peptide mapping." *J. Sep. Sci.* **38**:3262-3270.
342. R. Phelan, O. N. Sekurova, J. D. Keasling, and S. B. Zotchev. 2015. "Engineering terpene biosynthesis in *Streptomyces* for production of the advanced biofuel precursor bisabolene." *ACS Synth. Biol.* **4**:393-399.
343. A. Eudes, V. Teixeira Benites, G. Wang, E. E. Baidoo, T. S. Lee, J. D. Keasling, and D. Loque. 2015. "Precursor-directed combinatorial biosynthesis of cinnamoyl, dihydrocinnamoyl, and benzoyl anthranilates in *Saccharomyces cerevisiae*." *PLoS One* **10**(10):e0138972. DOI: 10.1371/journal.pone.0138972
344. T. Jakuciunas, A. S. Rajkumar, J. Zhang, D. Arsovska, A. Rodriguez, C. B. Jendresen, M. L. Skjoldt, A. T. Nielsen, I. Borodina, M. K. Jensen, and J. D. Keasling. 2015. "CasEMBLR: Cas9-facilitated multiloci genomic integration of in vivo assembled DNA parts in *Saccharomyces cerevisiae*." *ACS Synth. Biol.* **4**(11):1226-1234.
345. S. Poust, J. Piety, A. Bar-Even, D. Baker, J. Keasling, and J. Siegel. 2015. "Mechanistic analysis of an engineered enzyme that catalyzes the formose reaction." *Chembiochem.* **16**:1950-1954. DOI: 10.1002/cbic.201500228.
346. M. E. Vega-Sánchez, D. Loqué, J. Lao, M. Catena, Y. Verherbruggen, T. Herter, F. Yang, J. Harholt, B. Ebert, E. E. Baidoo, J. D. Keasling, H. V. Scheller, J. L. Heazlewood, and P. D. Ronald. 2015. "Engineering temporal accumulation of a low recalcitrance polysaccharide leads to increased C6 sugar content in plant cell walls." *Plant Biotechnol. J.* **13**(7):903-14. DOI: 10.1111/pbi.12326.
- 2016**
347. J. Zhang, E. Kao, G. Wang, E. E. K. Baidoo, M. Chen, and J. D. Keasling. 2016. "Metabolic engineering of *Escherichia coli* for the biosynthesis of 2-pyrrolidone." *Metab. Eng. Commun.* **3**:1-7.
348. A. Reider Apel, M. Ouellet, H. Szmids-Middleton, J. D. Keasling and A. Mukhopadhyay. 2016. Evolved hexose transporter enhances xylose uptake and glucose/xylose co-utilization in *Saccharomyces cerevisiae*. *Sci. Rep.* **6**:19512; DOI: 10.1038/srep19512.
349. T. Jakuciunas, M. K. Jensen, and J. D. Keasling. 2016. "CRISPR/Cas9 advanced engineering of microbial cell factories." *Metab. Eng.* **34**:44-59.
350. A. Hagen, S. Poust, T. de Rond, L. Katz, C. J. Petzold, and J. D. Keasling. 2016. "Engineering a polyketide synthase for in vitro production of adipic acid." *ACS Synth. Biol.* **5**:21-27.
351. G. Linshiz, E. Jensen, N. Stawski, C. Bi, N. Elsbree, H. Jiao, J. Kim, R. Mathies, J. D. Keasling, and N. J. Hillson. 2016. "End-to-end automated microfluidic platform for synthetic biology: from design to functional analysis" *J. Biol. Eng.* **10**:3; DOI: 10.1186/s13036-016-0024-5.
352. S. Rodriguez, C. M. Denby, T. V. Vu, E. E. K. Baidoo, G. Wang, and J. D. Keasling. 2016. "ATP citrate lyase mediated cytosolic acetyl-CoA biosynthesis increases mevalonate production in *Saccharomyces cerevisiae*." *Microb. Cell Fact.* **15**:48.
353. J. Hsia, W. J. Holtz, M. M. Maharbiz, M. Arcak, and J. D. Keasling. 2016. "Modular synthetic inverters from zing finger proteins and small RNAs." *PLoS One* **11**(2):e0149483. DOI: 10.1371/journal.pone.0149483.
354. A. Kang, K. W. George, G. Wang, E. E. Baidoo, J. D. Keasling, and T. S. Lee. 2016. "Isopentenyl diphosphate (IPP)-bypass mevalonate pathways for isopentenol production." *Metab Eng.* **34**:25-35. DOI: 10.1016/j.ymben.2015.12.002.
355. J. Nielsen and J. D. Keasling. 2016. "Engineering cellular metabolism." *Cell* **164**:1185-1197.
356. P. Javidpour, S. Deutsch, V. K. Mutalik, N. J. Hilson, C. J. Petzold, J. D. Keasling, and H. R. Beller. 2016. "Investigation of proposed ladderane biosynthetic genes from anammox bacteria by heterologous expression in *E. coli*." *PLoS One* **11**(3):e0151087.
357. V. Chubukov, A. Mukhopadhyay, C. J. Petzold, J. D. Keasling, and H. G. Martin. 2016. "Synthetic and systems biology for microbial production of commodity chemicals." *Syst. Biol. Appl.* **2**: DOI: 10.1038/npjbsa.2016.9.

358. C. H. Eng, S. Yuzawa, E. E. Baidoo, L. Katz, and J. D. Keasling. 2016. "Alteration of polyketide stereochemistry from anti to syn by a ketoreductase domain exchange in a Type I modular polyketide synthase subunit." *Biochemistry* **55**(12):1677-1680. DOI: 10.1021/acs.biochem.6b00129.
359. A. Eudes, J. H. Pereira, S. Yogiswara, G. Wang, V. Teixeira Benites, E. E. Baidoo, T. S. Lee, P. D. Adams, J. D. Keasling, and D. Loqué. 2016. "Exploiting the substrate promiscuity of hydroxycinnamoyl-CoA:shikimate hydroxycinnamoyl transferase to reduce lignin." *Plant Cell Physiol.* **57**(3):568-579. DOI: 10.1093/pcp/pcw016.
360. E. Brunk, K. W. George, J. Alonso-Gutierrez, M. Thompson, E. Baidoo, G. Wang, C. J. Petzold, D. McCloskey, J. Monk, L. Yang, E. J. O'Brien, T. S. Batth, H. G. Martin, A. Feist, P. D. Adams, J. D. Keasling, B. O. Palsson, and T. S. Lee. 2016. "Characterizing strain variation in engineered *E. coli* using a multi-omics-based workflow." *Cell Syst.* **2**(5):335-46.
361. P. Gach, S. Shih, J. Sustarich, J. D. Keasling, N. J. Hillson, P. D. Adams, and A. Singh. 2016. "A droplet microfluidic platform for automating genetic engineering." *ACS Syn. Biol.* **5**(5):426-33.
362. S. Yuzawa, J. D. Keasling, and L. Katz. 2016. "Insights into polyketide biosynthesis gained from repurposing antibiotic-producing polyketide synthases to produce fuels and chemicals." *J. Antibiot. (Tokyo)* **69**(7):494-499.
363. M. M. Jessop-Fabre, T. Jakociunas, V. Stovicek, Z. Dia, M. K. Jensen, J. D. Keasling, and I. Borodina. 2016. "EasyClone-MarkerFree: A vector toolkit for marker-less integration of genes into *Saccharomyces cerevisiae* via CRISPR-Cas9." *Biotechnol. J.* **11**(8):1110-1117.
364. K. Zargar, R. Saville, R. M. Phelan, S. G. Tringe, C. J. Petzold, J. D. Keasling, and H. R. Beller. 2016. "In vitro characterization of phenylacetate decarboxylase, a novel enzyme catalyzing toluene biosynthesis in an anaerobic microbial community." *Sci. Rep.* **6**:31362. DOI: 10.1038/srep31362.
365. A. Eudes, N. Zhao, N. Sathitsuksanoh, E. E. Baidoo, J. Lao, G. Wang, S. Yogiswara, T. S. Lee, S. Singh, J. C. Mortimer, J. D. Keasling, B. A. Simmons, and D. Loque. 2016. "Expression of S-adenosylmethionine hydrolase in tissues synthesizing secondary cell walls alters specific methylated cell wall fractions and improves biomass digestibility." *Front Bioeng. Biotechnol.* **4**:58. DOI: 10.3389/fbioe.2016.00058.
366. A. Ghosh, D. Ando, J. Gin, W. Runguphan, C. Denby, G. Wang, E. E. K. Baidoo, C. Shymansky, J. D. Keasling and H. Garcia Martin. 2016. "¹³C metabolic flux analysis for systematic metabolic engineering of *S. cerevisiae* for overproduction of fatty acids." *Front. Bioeng. Biotechnol.* **4**:76. DOI: 10.3389/fbioe.2016.00076.
367. M. L. Skjoedt, T. Snoek, K. R. Kildegaard, D. Arsovska, M. Eichenberger, T. J. Goedecke, A. S. Rajkumar, J. Zhang, M. Kristensen, B. J. Lehka, S. Siedler, I. Borodina, M. K. Jensen, and J. D. Keasling. 2016. "Engineering prokaryotic transcriptional activators as metabolite biosensors in yeast." *Nat. Chem. Biol.* **12**(11):951-958. DOI: 10.1038/nchembio.2177.
368. S. Y. Choi, H. J. Lee, J. Choi, J. Kim, S. J. Sim, Y. Um, Y. Kim, T. S. Lee, J. D. Keasling, H. M. Woo. 2016. "Photosynthetic conversion of CO₂ to farnesyl diphosphate-derived phytochemicals (amorpha-4,11-diene and squalene) by engineered cyanobacteria." *Biotechnol Biofuels* **9**:202. DOI: 10.1186/s13068-016-0617-8.
369. A. Lechner, E. Brunk, and J. D. Keasling. 2016. "The need for integrated approaches in metabolic engineering." *Cold Spring Harb. Perspect. Biol.* **8**(11): a023903. DOI: 10.1101/cshperspect.a023903
370. W. D. Hollinshead, S. Rodriguez, H. Garcia Martin, G. Wang, E. E.K. Baidoo, K. L. Sale, J. D. Keasling, A. Mukhopadhyay, and Y. J. Tang. 2016. "Examining *Escherichia coli* glycolytic pathways, catabolite repression, and metabolite channeling using Δ *pfk* mutants." *Biotechnology for Biofuels* **9**:212. DOI: 10.1186/s13068-016-0630-y
371. A. S. Rajkumar, G. Liu, D. Bergenholm, D. Arsovska, M. Kristensen, J. Nielsen, M. K. Jensen, and J. D. Keasling. 2016. "Engineering of synthetic, stress-responsive promoters." *Nucl. Acids Res.* **44**(17):e136. DOI: 10.1093/nar/gkw533.
372. J. Zhang, N. Sonnenschein, T. P. Phil, K. R. Pedersen, M. K. Jensen, and J. D. Keasling. 2016. "Engineering an NADPH/NADP⁺ redox biosensor in yeast." *ACS Synth. Biol.* **5**(12):1546-1556.
373. L. Fang, T. Ishikawa, E. A. Rennie, G. M. Murawska, J. Lao, J. Yan, A. Y. Tsai, E. E. Baidoo, J. Xu, J. D. Keasling, T. Demura, M. Kawai-Yamada, H. V. Scheller, and J. C. Mortimer. 2016. "Loss of inositol phosphorvlyceramide sphingolipid mannosylation induces plant immune responses and reduces cellulose content in *Arabidopsis*." *Plant Cell* **28**(12):2991-3004. DOI: 10.1105/tpc.16.00186.
374. A. Eudes, M. Mouille, D. Robinson, V. T. Benites, G. Wang, L. Roux, A. Y.-L. Tsai, E. Baidoo, T.-Y. Chiu, J. Heazlewood, H. Scheller, A. Mukhopadhyay, J. D. Keasling, S. Deutsch, and D. Loque. 2016. "Exploiting members of the BAHD acyltransferase family to synthesize multiple hydroxycinnamate and benzoate conjugates in yeast." *Microbiol. Cell Fact.* **15**(1):198.
375. M. E. Brown, A. Mukhopadhyay, and J. D. Keasling. 2016. "Engineering bacteria to catabolize the carbonaceous component of sarin: teaching *E. coli* to eat isopentanol." *ACS Synth. Biol.* **5**(12):1485-1496. DOI: 10.1021/acssynbio.6b00115.

376. M. Frederix, F. Mingardon, M. Hu, N. Sun, T. Pray, S. Singh, B. A. Simmons, J. D. Keasling, and A. Mukhopadhyay. 2016. "Development of an *E. coli* strain for one-pot biofuel production from ionic liquid pretreated cellulose and switchgrass." *Green Chem.* **18**:4189-4197.
377. M. J. Liszka, A. Kang, N. V. S. N. Murthy Konda, K. Tran, J. M. Gladden, S. Singh, J. D. Keasling, C. D. Scown, T. S. Lee, B. A. Simmons, and K. L. Sale. 2016. "Switchable ionic liquids based on dicarboxylic acids for one-pot conversion of biomass to an advanced biofuel." *Green Chem.* **18**:4012-4021. DOI: 10.1039/C6GC00657D.
378. J. Kirby, K. L. Dietzel, G. Wichmann, R. Chan, E. Antipov, N. Moss, E. E. Baidoo, P. Jackson, S. P. Gaucher, S. Gottlieb, J. LaBarde, T. Mahatdeikul, K. M. Hawkins, S. Mulev, J. D. Newman, P. Liu, J. D. Keasling, and L. Zhao. 2016. "Engineering a functional 1-deoxy-D-xylulose 5-phosphate (DXP) pathway in *Saccharomyces cerevisiae*." *Metab. Eng.* **38**:494-503. DOI: 10.1016/j.ymben.2016.10.017.

2017

379. V. Chubukov, J. Desmarais, G. Wang, L. Chan, E. Baidoo, C. Petzold, J. D. Keasling, and A. Mukhopadhyay. 2017. "Engineering glucose metabolism of *Escherichia coli* under nitrogen starvation." *Syst. Biol. Appl.* **3**:16035. DOI:10.1038/npjbsa.2016.35.
380. J. L. Foo, A. V. Susanto, J. D. Keasling, S. S. Leong, and M. W. Chang. 2017. "Whole-cell biocatalytic and de novo production of alkanes from free fatty acids in *Saccharomyces cerevisiae*." *Biotechnol. Bioeng.* **114**(1):232-237. DOI: 10.1002/bit.25920.
381. L. He, Y. Xiu, J. A. Jones, E. E. Baidoo, J. D. Keasling, Y. J. Tang, and M. A. Koffas. 2017. "Deciphering flux adjustments of engineered *E. coli* cells during fermentation with changing growth conditions." *Metab. Eng.* **39**:247-256. DOI: 10.1016/j.ymben.2016.12.008.
382. A. Reider Apel, L. d'Espaux, M. Wehrs, D. Sachs, R. Li, G. Tong, M. Garber, O. Nnadi, W. Zhuang, N. Hillson, J. D. Keasling, A. Mukhopadhyay. 2017. "A Cas9-based toolkit to program gene expression in *Saccharomyces cerevisiae*." *Nucl. Acids Res.* **45**(1):496-508. DOI: 10.1093/nar/gkw1023.
383. R. M. Phelan, D. Sachs, S. J. Petkiewicz, J. F. Barajas, J. M. Blake-Hedges, M. G. Thompson, A. R. Apel, B. J. Rasor, L. Katz, and J. D. Keasling. 2017. "Development of next generation synthetic biology tools for use in *Streptomyces venezuelae*." *ACS Syn. Biol.* **6**(1):159-166. DOI: 10.1021/acssynbio.6b00202.
384. E. D. Jensen, R. Ferreira, T. Jakociunas, D. Arsovska, J. Zhang, L. Ding, J. D. Smith, F. David, J. Nielsen, M. K. Jensen, and J. D. Keasling. 2017. "Transcriptional reprogramming in yeast using dCas9 and combinatorial gRNA strategies." *Microb. Cell Fact.* **16**(1):46. DOI: 10.1186/s12934-0664-2.
385. J. Zhang, J. F. Barajas, M. Burdu, T. L. Ruegg, B. Dias, and J. D. Keasling. 2017. "Development of a transcription factor-based lactam biosensor." *ACS Synth. Biol.* **6**(3):439-455. DOI: 10.1021/acssynbio.6b00136.
386. S. Yuzawa, K. Deng, G. Wang, E. E. Baidoo, T. R. Northen, P. D. Adams, L. Katz, and J. D. Keasling. 2017. "Comprehensive in vitro analysis of acyltransferase domain exchanges in modular polyketide synthases and its application for short-chain ketone production." *ACS Syn. Biol.* **6**(1):139-147. DOI: 10.1021/acssynbio.6b00176.
387. G. Papa, J. Kirby, N. V. S. N. Murthy Konda, K. Tran, S. Singh, J. D. Keasling, G. F. Peter, and B. A. Simmons. 2017. "Development of an integrated approach for α -pinene recovery and sugar production from loblolly pine using ionic liquids." *Green Chem.* **19**:1117-1127.
388. G. Birkel, A. Ghosh, V. Satish Kumar, D. Weaver, D. Ando, A. Arkin, J. D. Keasling, and H. G. Martin. 2017. "The JBEI Quantitative Metabolic Modeling library (jQMM): a Python library for modeling microbial metabolism." *BMC Bioinformatics* **18**:205. DOI: 10.1186/s12859-017-1615-y.
389. D. Degreif, T. de Rond, A. Bertl, J. D. Keasling, and I. Budin. 2017. "Lipid engineering reveals regulatory roles for membrane fluidity in yeast flocculation and oxygen-limited growth." *Metab. Eng.* **41**:46-56. DOI: 10.1016/j.ymben.2017.03.002.
390. R. W. Haushalter, R. M. Phelan, K. M. Hoh, C. Su, G. Wang, E. E. Baidoo, and J. D. Keasling. 2017. "Production of odd-carbon dicarboxylic acids in *Escherichia coli* using an engineered biotin-fatty acid biosynthetic pathway." *J. Am. Chem. Soc.* **139**(10):4615-4618. DOI: 10.1021/jacs.6b11895.
391. A. Zargar, C. B. Bailey, R. W. Haushalter, C. B. Eiben, L. Katz, and J. D. Keasling. 2017. "Leveraging microbial biosynthetic pathways for the generation of 'drop-in' biofuels." *Curr. Opin. Biotechnol.* **45**:156-163. DOI: 10.1016/j.copbio.2017.03.004.
392. T. Jakociunas, M. K. Jensen, and J. D. Keasling. 2017. "System-level perturbations of cell metabolism using CRISPR/Cas9." *Curr. Opin. Biotechnol.* **46**:134-140. DOI: 10.1016/j.copbio.2017.03.014.

393. A. Kang, C. W. Meadows, N. Canu, J. D. Keasling, and T. S. Lee. 2017. "High-throughput enzyme screening platform for the IPP-bypass mevalonate pathway for isopentenol production." *Metab. Eng.* **41**:125-134. DOI: 10.1016/j.ymben.2017.03.010.
394. S. Yuzawa, J. D. Keasling, and L. Katz. 2016. "Bio-based production of fuels and industrial chemicals by repurposing antibiotic-producing type I modular polyketide synthases: opportunities and challenges." *J. Antibiot. (Tokyo)* **70**(4):378-38. DOI: 10.1038/ja.2016.136.
395. J. Zhang, J. F. Barajas, M. Burdu, G. Wang, E. E. K. Baidoo, and J. D. Keasling. 2017. "Application of an acyl-CoA ligase from *Streptomyces aizunensis* for lactam biosynthesis." *ACS Synth. Biol.* **6**(5):884-890. DOI: 10.1021/acssynbio.6b00372.
396. C. M. Shymansky, G. Wang, E. E. K. Baidoo, J. Gin, A. R. Apel, A. Mukhopadhyay, H. G. Martin, and J. D. Keasling. 2017. "Flux-enabled exploration of the role of Sip1 in galactose yeast metabolism." *Front. Bioeng. Biotechnol.* **5**:31. DOI: 10.3389/fbioe.2017.00031.
397. Y. Liang, S. M. Richardson, J. Yan, V. T. Benites, C. Cheng-Yue, T. Tran, J. Mortimer, A. Mukhopadhyay, J. D. Keasling, and D. Loque. 2017. "Endoribonuclease-based two-component repressor systems for tight gene expression control in plants." *ACS Synth. Biol.* **6**(5):806-816. DOI: 10.1021/acssynbio.6b00295.
398. N. Wan, L. M. DeLorenzo, L. He, L. You, C. M. Immethun, G. Wang, E. E. Baidoo, W. Hollinshead, J. D. Keasling, T. S. Moon, and Y. J. Tang. 2017. "Cyanobacterial carbon metabolism: fluxome plasticity and oxygen dependence." *Biotechnol. Bioeng.* **114**(7):1593-1602. DOI: 10.1002/bit.26287.
399. D. Mendez-Perez, J. Alonso-Gutierrez, Q. Hu, M. Molinas, E. E. Baidoo, G. Wang, L. J. Chan, P. D. Adams, C. J. Petzold, J. D. Keasling, and T. S. Lee. 2017. "Production of jet fuel precursor monoterpenoids from engineered *Escherichia coli*." *Biotechnol. Bioeng.* **114**(8):1703-1712. DOI: 10.1002/bit.26296.
400. L. d'Espaux, A. Ghosh, W. Rungtaphan, M. Wehrs, F. Xu, O. Konzock, I. Dev, M. Nhan, J. Gin, A. Reider Apel, C. J. Petzold, S. Singh, B. A. Simmons, A. Mukhopadhyay, H. García Martín, and J. D. Keasling. 2017. "Engineering high-level production of fatty alcohols by *Saccharomyces cerevisiae* from lignocellulosic feedstocks." *Metab. Eng.* **42**:115-125. doi: 10.1016/j.ymben.2017.06.004
401. M. de Raad, T. de Rond, O. Rubel, J. D. Keasling, T. Northen, and B. Bowen. 2017. "OpenMSI arrayed analysis toolkit: analyzing spatially defined samples using mass spectrometry imaging." *Anal. Chem.* **89**(11):5818-5823. doi: 10.1021/acs.analchem.6b05004.
402. V. Parisutham, S.P. Chandran, A. Mukhopadhyay, S. K. Lee, and J. D. Keasling. 2017. "Intracellular cellobiose metabolism and its applications in lignocellulose-based biorefineries." *Bioresour. Technol.* **239**:496-506. doi: 10.1016/j.biortech.2017.05.001.
403. T. de Rond, P. Stow, I. Eigl, R. E. Johnson, L. J. G. Chan, G. Goyal, E. E. K. Baidoo, N. J. Hillson, C. J. Petzold, R. Sarpong, and J. D. Keasling. 2017. "Oxidative cyclization of prodigiosin by an alkylglycerol monooxygenase-like enzyme." *Nat. Chem. Biol.* **13**(11):1155-1157.
404. E.-M. Kim, H. M. Woo, T. Tian, S. Yilmaz, P. Javidpour, J. D. Keasling, and T. S. Lee. 2017. "Autonomous control of metabolic state by a quorum sensing (QS)-mediated regulator for bisabolene production in *E. coli*." *Metab. Eng.* **44**:325-336.
405. J. Yaegashi, J. Kirby, M. Ito, J. Sun, T. Dutta, M. Mirsiaghi, E. R. Sundstrom, A. Rodriguez, E. Baidoo, D. Tanjore, T. Pray, K. Sale, S. Singh, J. D. Keasling, B. A. Simmons, S. W. Singer, J. K. Magnuson, A. P. Arkin, J. M. Skerker, and J. M. Gladden. 2017. "*Rhodospiridium toruloides*: a new platform organism for conversion of lignocellulose into terpene biofuels and bioproducts." *Biotechnol. Biofuels* **10**:241. doi: 10.1186/s13068-017-0927-5.
406. S. Yuzawa, C. B. Bailey, T. Fujii, R. Jovic, J. F. Barajas, V. T. Benites, E. E. K. Baidoo, Y. Chen, C. J. Petzold, L. Katz, and J. D. Keasling. 2017. "Heterologous gene expression of N-terminally truncated variants of LipPKS1 suggest a functionally critical structural motif in the N-terminus of modular polyketide synthase." *ACS Chem. Biol.* **12**(11):2725-2729. doi: 10.1021/acscchembio.7b00714.

In Press Refereed Journal Publications

- IP1. W. Morrell, G. Birkel, M. Forrer, T. Lopez, T. Backman, M. Dussault, C. J. Petzold, E. E. Baidoo, Z. Costello, D. Ando, J. Alonso Gutierrez, K. George, A. Mukhopadhyay, I. Vaino, J. Keasling, P. Adams, H. Hillson, and H. Garcia Martin. 2017. "The Experiment Data Depot: a web-based software tool for biological experimental data storage, sharing, and visualization." *ACS Synth. Biol.* **In press.**
- IP2. C. H. Eng, T. W. H. Backman, C. B. Bailey, C. Magnan, H. García Martín, L. Katz, P. Baldi, and J. D. Keasling. 2017. "ClusterCAD: a computational platform for type I modular polyketide synthase design." *Nucl. Acads Res.* **In press.**
- IP3. Z. Dossani, A. Reider-Apel, H. Szmids, S. Deutsch, N. Hillson, J. D. Keasling, and A. Mukhopadhyay. 2017. "A combinatorial approach to synthetic transcription factor-promoter combinations for yeast strain engineering." *Yeast* **In press.**

- IP4. W. C. Morrell, G. W. Birkel, M. Forrer, T. Lopez, T. W. H. Backman, M. Dussault, C. J. Petzold, E. E. K. Baidoo, Z. Costello, J. Alonso-Gutierrez, K. W. George, A. Mukhophadhyay, A. Vaino, J. D. Keasling, P. D. Adams, N. J. Hillson, H. Garcia Martin. 2017. "The experimental data depot: a web-based software tool for biological experimental data storage, sharing, and visualization." *ACS Synth. Biol.* **In press**.

Refereed Conference Proceedings

- CP1. S. T. Sharfstein and J. D. Keasling. 1994. "Polyphosphate metabolism in *Escherichia coli*." *Ann. N. Y. Acad. Sci.* **745**:77-92.
- CP2. J. D. Keasling. 1997. "Regulation of intracellular toxic metals and other cations by hydrolysis of polyphosphate." *Ann. N. Y. Acad. Sci.* **829**:242-249.
- CP3. D. G. Bolesch, R. B. Nielsen, and J. D. Keasling. 1997. "Complete reductive dechlorination of trichloroethene by a groundwater microbial consortium." *Ann. N. Y. Acad. Sci.* **829**:97-102.
- CP4. D. Szykowny and J. D. Keasling. 1997. "Kinetics of BTEX degradation by a nitrate-reducing mixed culture." *Ann. N. Y. Acad. Sci.* **829**:135-141.
- CP5. R. B. Nielsen and J. D. Keasling. 1998. "Anaerobic degradation of PCE and TCE DNAPLs by groundwater microorganisms." In *Bioremediation and Phytoremediation: Chlorinated and Recalcitrant Compounds*, G. B. Wickramanayake and R. E. Hinchee, eds. Battelle Press, Columbus, OH. pp. 97-102.
- CP6. J. D. Keasling, J. Benemann, J. Pramanik, T. A. Carrier, K. L. Jones, and S. J. Van Dien. 1998. "A toolkit for metabolic engineering of bacteria: application to hydrogen production." In *Biohydrogen*, O. Zaborsky, ed. pages 87-97. Plenum Publishing, New York, NY.
- CP7. S. W. Bang, D. S. Clark, and J. D. Keasling. 1999. "Heavy metal decontamination by engineered genetic cassettes." Proceedings of the World Congress of Korean Scientists and Engineers. Pgs. 449-455. The Korean Federation of Science and Technology Societies. Seoul, Korea.
- CP8. M. M. Maharbiz, R. T. Howe, J. D. Keasling. 2000. "Silicon microbial bioreactor arrays." Proceedings of the IEEE-EMBS Special Topic Conference on MicroTechnologies in Medicine and Biology, Paris, France, October 12-14, 2000. pp. 165-170.
- CP9. M.M. Maharbiz, W.J. Holtz, S. Sharifzadeh, J.D. Keasling and R.T. Howe. 2002. "A microfabricated electrochemical oxygen generator for high-density cell culture arrays." Solid-State Sensor, Actuator and Microsystems Workshop, Hilton Head Island, SC, June 2-6 2002. pp. 259-264.
- CP10. J.D. Keasling, 2005. "The promise of synthetic biology." *The Bridge* **35**(4):18-21. Presented at the National Academy of Engineering, U.S. Frontiers of Engineering meeting, GE Global Research Center, Niskayuna, NY, September 22-24.
- CP11. C. A. Voigt and J. D. Keasling. 2005. "Programming cellular function." *Nat. Chem. Biol.* **1**:304-307. Life Engineering Symposium, San Francisco, CA. August 19-20, 2005.

Refereed Book Chapters

- BC1. J. D. Keasling, T. A. Carrier, K. L. Jones, J. Pramanik, and S. J. Van Dien. 1999. "New tools for metabolic engineering of *Escherichia coli*." In *Metabolic Engineering*, S.-Y. Lee and E. T. Papoutsakis, eds. Marcel Dekker, New York, NY.
- BC2. C. D. Smolke, V. J.J. Martin, and J. D. Keasling. 2004. "Tools for Metabolic Engineering in *Escherichia coli*." In *Protein Expression Technologies: Current Status and Future Trends*, F. Baneyx, ed. Horizon Bioscience, Norfolk, UK. Pages 149-197.
- BC3. G. Y. Wang, R. D. Laidlaw, J. H. Marshall, and J. D. Keasling. 2004. "Metabolic engineering of fungal secondary metabolite pathways." In *Handbook of Industrial Mycology*, Z. An, ed. Marcel Dekker, New York, NY. Pages 635-666.
- BC4. S. K. Lee and J. D. Keasling. 2009. "Practical Pathway Engineering – Demonstration in Integrating Tools." In *The Metabolic Pathway Engineering Handbook*, C. D. Smolke, ed. CRC Press, Taylor & Francis Group, Boca Raton, FL. Section II, Chapter 12, pages 1-14.
- BC5. J. D. Keasling. 2009. "Application of emerging technologies to metabolic engineering." In *The Metabolic Pathway Engineering Handbook*, C. D. Smolke, ed. CRC Press, Taylor & Francis Group, Boca Raton, FL. Section III, pages 1-3.
- BC6. M. de la Pena Mattozzi, Y. Kang, J. D. Keasling. 2010. "Feast: Choking on Acetyl-CoA, the Glyoxylate Shunt, and Acetyl-CoA-Driven Metabolism." In *Handbook of Hydrocarbon and Lipid Microbiology*, K. N. Timmis, T. McGenity, J. R. van der Meer, and V. de Lorenzo, eds. Springer DE. Pages 1649-1660.

- BC7. J. D. Keasling. 2010. "Microbial production of isoprenoids." In *Handbook of Hydrocarbon and Lipid Microbiology*, K. N. Timmis, T. McGenity, J. R. van der Meer, and V. de Lorenzo, eds. Springer DE. Pages 2951-2966.
- BC8. S.R. Chhabra and J.D. Keasling. 2011. "The Biological Basis | Metabolic Design and Control for Production in Prokaryotes." In *Comprehensive Biotechnology, Second Edition*, Murray Moo-Young, ed. Elsevier. Volume 1, pages 243–255.
- BC9. J. A. Dietrich, J. L. Fortman, D. Juminaga, and J. D. Keasling. 2011. "Microbial production of plant-derived pharmaceutical natural products through metabolic engineering: artemisinin and beyond." In *Biocatalysis for Green Chemistry and Chemical Process Development*, J. Tao and R. Kazlauskas, ed. John Wiley. Chapter 7, pages 173-196.
- BC10. A. Mukhopadhyay, N. J. Hillson, and J. D. Keasling. 2011. "Control of stress tolerance in bacterial host organisms for bioproduction of fuels." In *Microbial Stress Tolerance for Biofuels*, Z. L. Liu, ed. Springer-Verlag. Pages 209-238.
- BC11. E. E. K. Baidoo, P. I Benke, and J. D. Keasling. 2012. "Mass spectrometry-based microbial metabolomics." In *Microbial Systems Biology: Methods and Protocols, Methods in Molecular Biology*, A. Navid, ed. Springer-Verlag. Vol. 881, Pages 215-278.
- BC12. T. S. Baath, J. D. Keasling, and C. J. Petzold. 2012. "Targeted proteomics for metabolic pathway optimization." In *Fungal Secondary Metabolism: Methods and Protocols, Methods in Molecular Biology*, N. P. Keller and G. Turner, eds. Springer-Verlag. Vol. 944, pages 237-249.
- BC13. G. Bokinsky, D. Groff, and J. D. Keasling. 2012. "Synthetic biology of microbial biofuel production: From enzymes to pathways to organisms." In *Synthetic Biology: Tools and Applications*, H. Zhao, ed. Elsevier. Pages 207-223.
- BC14. J. A. Goler, J. M. Carothers, and J. D. Keasling. 2014. "Dual-selection for evolution of in vivo functional aptazymes as riboswitch parts." In *Methods in Molecular Biology*, A. Ogawa, ed. Humana Press. Vol 1111, pages 221-235.
- BC15. E. E. K. Baidoo, Y. Xiao, K. Dehesh, and J. D. Keasling. 2014. "Metabolite profiling of plastidial deoxyxylulose-5-phosphate pathway intermediates by liquid chromatography and mass spectrometry." In *Methods in Molecular Biology*, M. Rodriguez-Concepcion, ed. Humana Press. Vol 1153, pages 57-76.

Patents

1. J. D. Keasling, D. G. Bolesch, T. Delfino. 2000. "Reductive dehalogenation of organic halides in contaminated groundwater." US Patent No. 6,150,157.
2. J. D. Keasling, V. Martin, D. Pitera, S.-W. Kim, S. T. Withers III, Y. Yoshikuni, J. D. Newman, A. V. Khlebnikov. 2007. "Biosynthesis of isopentenyl pyrophosphate." US Patent No. 7,172,886.
3. J. D. Keasling, J. D. Newman, D. J. Pitera. 2007. "Method for enhancing production of isoprenoid compounds." US Patent No. 7,183,089.
4. J. D. Keasling, V. Martin, D. Pitera, S. T. Withers III, J. Newman. 2007. "Biosynthesis of amorpha-4,11-diene." US Patent No. 7,192,751.
5. J. D. Keasling, V. J. J. Martin, D. J. Pitera, S.-W. Kim, S. T. Withers, Y. Yoshikuni, J. D. Newman, A. V. Khlebnikov. 2009. "Methods for synthesizing isopentenyl pyrophosphate." US Patent No. 7,622,282.
6. J. D. Keasling, V. J. J. Martin, D. J. Pitera, S.-W. Kim, S. T. Withers, Y. Yoshikuni, J. D. Newman, A. V. Khlebnikov. 2009. "Methods for synthesizing mevalonate." US Patent No. 7,622,283.
7. J. D. Keasling, V. J. J. Martin, D. J. Pitera, S.-W. Kim, S. T. Withers, Y. Yoshikuni, J. D. Newman, A. V. Khlebnikov. 2010. "Isolated mevalonate pathway enzyme nucleic acids." US Patent No. 7,667,017.
8. J. D. Keasling, J. D. Newman, D. J. Pitera. 2010. "Method for enhancing production of isoprenoid compounds." US Patent No. 7,670,825.
9. J. D. Keasling, V. J. J. Martin, D. J. Pitera, S.-W. Kim, S. T. Withers, Y. Yoshikuni, J. D. Newman, A. V. Khlebnikov. 2010. "Host cells for production of isoprenoid compounds." US Patent No. 7,736,882.
10. J. D. Newman, N. Renninger, V. J. J. Martin, J. D. Keasling, K. K. Reiling. 2010. "Method for identifying terpene synthase." US Patent No. 7,745,108.
11. J. D. Keasling, Y. Yoshikuni. 2011. "Methods of generating protein variants with altered function." US Patent No. 7,888,095.
12. J. D. Keasling, V. J. J. Martin, D. J. Pitera, S.-W. Kim, S. T. Withers, Y. Yoshikuni, J. Newman, A. V. Khlebnikov. 2011. "Host cells for production of isoprenoid compounds." US Patent No. 7,915,026.
13. J. D. Keasling, J. Newman, D. J. Pitera, S. T. Withers, K. K. Reiling, V. J. J. Martin. 2011. "Methods for identifying a biosynthetic pathway gene product." US Patent No. 7,927,794.
14. H. Chou, J. D. Keasling. 2011. "Host cells and methods for producing 3-methyl-2-buten-1-ol, 3-methyl-3-buten-1-ol, and 3-methyl-butan-1-ol." US Patent No. 7,985,567.

15. M. C.-Y. Chang, R. A. Krupa, D.-K. Ro, Y. Yoshikuni, J. D. Keasling. 2012. "Nucleic acids encoding modified cytochrome P450 enzymes and methods of use thereof." US Patent No. 8,097,438.
16. J. A. Dietrich, Y. Yoshikuni, J. D. Keasling, M. C. Y. Chang. 2012. "Artemisinic epoxide and methods for producing the same." US Patent No. 8,101,399.
17. D. J. Pitera, J. D. Newman, J. L. Kizer, J. D. Keasling, B. F. Pfleger. 2012. "Methods for increasing isoprenoid and isoprenoid precursor production by modulating fatty acid levels." US Patent No. 8,114,645.
18. J. D. Keasling, Y. Yoshikuni, J. A. Dietrich, F. F. Nowroozi, P. C. Babbitt. 2012. "Methods of generating protein variants." US Patent No. 8,158,383.
19. D.-K. Ro, K. Newman, E. M. Paradise, J. D. Keasling, M. Ouellet, R. Eachus, K. Ho, T. Ham. 2012. "Polynucleotides encoding isoprenoid modifying enzymes and methods of use thereof." US Patent No. 8,163,980.
20. J. D. Keasling, S. K. Lee. 2012. "Inducible expression vectors and methods of use thereof." US Patent No. 8,178,338.
21. J. D. Keasling, F. Nowroozi, D. J. Pitera, J. Anthony, J. D. Newman, L. Anthony. 2012. "Production of isoprenoids and isoprenoid precursors." US Patent No 8,257,957.
22. J. D. Keasling, V. J. J. Martin, D. J. Pitera, S.-W. Kim, S. T. Withers, Y. Yoshikuni, J. Newman, A. V. Khlebnikov. 2012. "Host cells for production of isoprenoid compounds." US Patent No 8,288,147.
23. L. Katz, J. L. Fortman, J. D. Keasling. 2013. "Producing biofuels using polyketide synthases." US Patent No 8,420,833.
24. F. F. Chen, J. D. Keasling, Y. J. Tang. 2013. "Bioremediation of nanomaterials." US Patent No 8,440,423.
25. S. B. del Cardayre, S. Brubaker, J. D. Keasling. 2013. "Modified microorganisms and uses therefor." US Patent No 8,535,916.
26. J. A. Dietrich, J. D. Keasling. 2013. "Transcription factor-based biosensor." US Patent No 8,552,169.
27. L. Katz, J. L. Fortman, J. D. Keasling. 2013. "Producing Dicarboxylic acids using polyketide synthases." US Patent 8,569,023.
28. J. A. Dietrich, J. D. Keasling. 2014. "Transcription factor-based biosensors for detecting dicarboxylic acids." US Patent No 8,652,804.
29. D.-K. Ro, K. Newman, E. M. Paradise, J. D. Keasling, M. Ouellet, R. Euchus, K. Ho, T. Ham. 2014. "Polynucleotides encoding isoprenoid modifying enzymes and methods of use thereof." US Patent No 8,759,632.
30. J. E. Dueber, J. D. Keasling, G. Wu, G. R. K. Malmirchegini. 2014. "Use of Synthetic Scaffolds for the Production of Biosynthetic Pathway Products." US Patent No 8,765,403.
31. J. D. Keasling, J. Kirby, E. M. Paradise. 2014. "Genetically modified host cells and use of same for producing isoprenoid compounds." US Patent No 8,828,684.
32. L. Katz, J. L. Fortman, J. D. Keasling. 2014. "Producing a trimethylpentanoic acid using hybrid polyketide synthases." US Patent No 8,852,902.
33. L. Katz, J. L. Fortman, J. D. Keasling. 2015. "Producing dicarboxylic acids using polyketide synthases." US Patent, 9,040,282.
34. G. Bokinsky, J. D. Keasling. 2015. "Microbial conversion of plant biomass to advanced biofuels." US Patent 9,096,859.
35. T. S. Lee, P. P. Peralta-Yahya, J. D. Keasling. 2015. "Isoprenoid based alternative diesel fuel." US Patent 9,109,175.
36. T. S. Lee, J. L. Fortman, J. D. Keasling. 2016. "Host cells and methods for producing isoprenyl alkanooates." US Patent 9,200,298.
37. J. L. Fortman, A. Hagen, L. Katz, J. D. Keasling, S. Poust, J. Zhang, S. Zotchev. 2016. "Hybrid polyketide synthases." US Patent 9,334,514.
38. P. P. Peralta-Yahya, J. D. Keasling. 2016. "Fusion proteins useful for producing pinene." US Patent 9,376,691.
39. J. Kirby, J. L. Fortman, M. Nichimoto, J. D. Keasling. 2016. "Host cells and methods for producing 1-deoxyxylulose 5-phosphate (DXP) and/or a DXP derived compound." US Patent 9,382,553.
40. M. J. Dunlop, J. D. Keasling, A. Mukhopadhyay. 2016. "Modified host cells with efflux pumps." US Patent 9,428,726.
41. D. Juminaga, J. D. Keasling. 2017. "Metabolic engineering of the shikimate pathway." US Patent 9,540,652.
42. US Patent 9,598,706.

43. H. Chou, J. D. Keasling. 2017. "Methods for increasing production of 3-methyl-2-butenol using fusion proteins." US Patent 9,631,210.
44. J. Kirby, J. L. Fortman, M. Nishimoto, J. D. Keasling. 2017. "Host cells and methods for producing 1-deoxyxylulose 5-phosphate (DXP) and/or a DXP derived compound." US Patent 9,637,766.
45. J. D. Keasling. 2017. "Genetically modified host cells and use of same for producing isoprenoid compounds." US Patent 9,809,829.

Invited Presentations

1. University of California at Davis, Department of Chemical Engineering, Davis, CA, May 1993
2. Genentech, South San Francisco, CA. January 1994.
3. Zeneca Bio-products, Billingham, England. November 1994.
4. University of California at Santa Barbara, Department of Chemical Engineering, Santa Barbara, CA. October 1994.
5. Chiron, Emeryville, CA. May 1996.
6. Stanford University, Department of Chemical Engineering, Stanford, CA. May 1997.
7. Society for Industrial Microbiology, National Meeting, Reno, NV. August 1997.
8. 7th Biochemical Engineering Conference, Seoul, Korea. September 1997.
9. California Water Environment Association, 1998 Annual CWAE Conference. April 1998.
10. Merck and Co., July 1998.
11. Institute for Biological Engineering, Annual Meeting, Orlando, FL. July 1998.
12. California Institute of Technology, Department of Environmental Engineering Science, Pasadena, CA. September 30, 1998.
13. University of Wisconsin, Department of Chemical Engineering, Madison, WI. October 1998.
14. University of Michigan, Department of Chemical Engineering, Ann Arbor, MI. October 1998.
15. University of Michigan, Department of Microbiology and Immunology, Ann Arbor, MI. October 1998.
16. University of Toledo, Department of Bioengineering, Toledo, OH. January 1999.
17. Chiron, Emeryville, CA. June 1999.
18. Merck and Co., Bioprocess Research and Development. June 1999.
19. Enzyme Engineering XV, Kona, HI. October 1999.
20. Massachusetts Institute of Technology, Department of Chemical Engineering. November 1999.
21. University of California at Irvine, Department of Chemical and Environmental Engineering. February 2000.
22. International Symposium on Modern Problems of Microbial Biochemistry and Biotechnology. Pushchino, Russia. June 2000.
23. International Society for Environmental Biotechnology Meeting. Kyoto, Japan. July 2000.
24. Biotechnology 2000, Berlin, Germany. August 2000.
25. Princeton University, Department of Chemical Engineering, September 2000.
26. Metabolic Engineering and Directed Evolution, British Biotechnology Research Council. London, England. November 2000.
27. University of Minnesota, Department of Chemical Engineering. December 2000.
28. Pacifichem, Honolulu, HI. December 2000.
29. World Congress on Enzyme Technologies. San Diego, CA. February 26, 2001.
30. American Society for Microbiology Annual Meeting, Orlando, FL. May 19, 2001.
31. Genomatica, San Diego, CA. October 26, 2001.
32. University College London, Department of Bioprocess Engineering. London, UK. October 22, 2001.
33. University of Wisconsin, Department of Chemical Engineering, Madison, WI. October 30, 2001.
34. Actinides 2001. Hayama, Japan. November 5, 2001.

35. Princeton University, Department of Chemical Engineering, Princeton, NJ. December 7, 2001.
36. Stanford University, Department of Civil and Environmental Engineering. Stanford, CA. February 8, 2002.
37. University of Maryland, Department of Chemical Engineering, College Park, Maryland. February 25, 2002.
38. Microbia, Cambridge, MA. February 27, 2002.
39. Diversa, San Diego, CA. March 13, 2002.
40. Kosan Biosciences, Hayward, CA. March 29, 2002.
41. University of Washington, Department of Chemical Engineering, Seattle, WA. April 22, 2002.
42. National Research Center, Biotechnology Research Institute, Montreal, Canada. June 3, 2002.
43. Sandia National Laboratory, August 27, 2002.
44. Tenth International Small Genomes Conference, Lake Arrowhead, CA. September 9, 2002.
45. City College of New York, Department of Chemical Engineering, New York, NY. September 30, 2002.
46. Polytechnic University, Department of Chemical Engineering, Brooklyn, NY. October 2, 2002.
47. University of Delaware, Department of Chemical Engineering (Allan P. Colburn Memorial Lecture), Newark, DE. November 2, 2002.
48. American Institute of Chemical Engineers National Meeting, Indianapolis, IN. November 5, 2002.
49. Firmenich, Geneva, Switzerland, November 7, 2002.
50. University of Michigan, Cellular Biotechnology Program, January 13, 2003.
51. Metabolic Engineering Working Group, National Science Foundation, Arlington, VA. January 31, 2003.
52. Synthetic Biology, SRI International, Menlo Park, CA. March 3-4, 2003.
53. University of California, San Diego, Department of Chemistry, La Jolla, CA. April 4, 2003.
54. Annual Meeting of the Society for Biochemistry and Molecular Biology (ASBMB), San Diego, CA. April 15, 2003.
55. Terpnet Meeting, University of Kentucky, Lexington, KY. May 15, 2003.
56. Johns Hopkins University, Department of Chemistry, Baltimore, MD. May 19, 2003.
57. Society of Industrial Microbiology Annual Meeting, Minneapolis, MN. August 10, 2003.
58. University of California, Berkeley, Department of Chemistry, Berkeley, CA. September 2, 2003.
59. University of Nebraska, Lincoln, Department of Chemistry, Lincoln, NE. September 12, 2003.
60. University of Illinois, Department of Chemical Engineering, Urbana-Champaign, IL. September 29, 2003.
61. Rice University, Department of Chemical Engineering, Houston, TX. October 9, 2003.
62. University of Colorado, Department of Chemical Engineering, Boulder, CO. October 14, 2003.
63. AIChE National Meeting, San Francisco, CA. November 17, 2003.
64. Thirteenth ISBA Meeting, Melbourne, Australia. December 1-5, 2003.
65. Eidgenossische Technische Hochschule, Department of Chemistry, Zurich, Switzerland. March 22, 2004.
66. PSI Protein Production and Crystallization Workshop, National Institute of General Medical Sciences, Natcher Conference Center, Bethesda, Maryland. March 29, 2004.
67. Illinois Institute of Technology, Department of Chemical Engineering, Chicago, IL. April 28, 2004.
68. Biotech Summit, Berkeley, CA. May 10, 2004.
69. Biological Input-Output Systems, DARPA, Boston MA. June 14, 2004.
70. Biotec 2004, Oviedo, Spain. July 19, 2004.

71. Society for Industrial Microbiology, Anaheim, CA. July 25, 2004.
72. American Chemical Society, Philadelphia, PA. August 22, 2004.
73. Cornell University, Department of Chemical Engineering, Ithaca, NY. September 13, 2004.
74. Purdue University, Department of Chemical Engineering, West Lafayette, IN. September 14, 2004.
75. Metabolic Engineering V, Lake Tahoe, CA. September 19, 2004.
76. Small Genomes Meeting, Lake Arrowhead, CA. September 26, 2004.
77. Council for the Advancement of Science Writing, Fayetteville, AK. November 8, 2004.
78. BioAgenda, Palm Springs, CA. December 7, 2004.
79. The Crossroads of Biotechnology 2005, Montreal, Canada. February 8, 2005.
80. USDA-ARS Commercial Strategic Rubber from Crop Plants and Bioreactors Third Annual Meeting, Albany, CA. February 17-18, 2005.
81. SynBio 2005 International Conference, Seoul, Korea. February 23, 2005.
82. 229th ACS National Meeting, San Diego, CA. March 12, 2005.
83. American Society for Microbiology 105th General Meeting, Atlanta, GA. June 9, 2005.
84. Gordon Research Conference "Plant Metabolic Engineering", Tilton, NH. July 13-15, 2005.
85. International Union of Microbiological Societies (IUMS), San Francisco, CA. July 27, 2005.
86. Manipulation of Biological Systems Conference, McLean, VA. July 28, 2005.
87. 2005 SIMS Annual Meeting, Chicago, IL. August 22-23, 2005.
88. 13th Annual International Conference on Microbial Genomes, Madison, WI. September 13-15, 2005.
89. National Academy of Engineering 11th Annual US Frontiers of Engineering Symposium, Niskayuna, NY. September 22-24, 2005.
90. University of California, Santa Barbara, Department of Chemical Engineering, Santa Barbara, CA. October 6, 2005.
91. ICSB 2005, Boston, MA. October 20-22, 2005.
92. IBM Academy of Technology Annual Meeting, Burlingame, CA. November 2, 2005.
93. University of Michigan, Department of Chemical Engineering, East Lansing, MI. November 8-12, 2005.
94. Pacifichem 2005, Honolulu, HI. December 16-18, 2005.
95. 2006 Institute of Biological Engineering Conference, Tucson, AZ. March 9-12, 2006.
96. University of Virginia, 2006 Symposium, Charlottesville, VA. April 10-11, 2006.
97. University of San Diego, San Diego, CA. April 13-14, 2006.
98. Stanford University, Stanford, CA. May 9, 2006.
99. DuPont Central Research and Development, Wilmington, DE. June 1-3, 2006.
100. CNN Future Summit "Of Man and Machine", Singapore. June 11-15, 2006.
101. IUCRP Fellows Seminar, UC San Diego, San Diego, CA. July 11, 2006.
102. SIMS 2006 Annual Meeting, Baltimore, MD. July 30-31, 2006.
103. California Commonwealth Club's INFORUM, San Francisco, CA. August 7, 2006.
104. Seminar, University of Minnesota, Dept. of Chemical Engineering and Material Sciences, Minneapolis, MN. Sept. 11-12, 2006.
105. Seminar, University of California, Irvine, Synthetic Biology Department, Irvine, CA. Sept. 14-15, 2006.
106. 14th Annual International Meeting on Microbial Genomics, Lake Arrowhead, CA, September 24-28, 2006.
107. IBOS Conference, Nunspeet, The Netherlands. September 27 – 30, 2006.
108. Metabolic Engineering VI: From recDNA towards Engineering Biological Systems, Noordwijkerhout, The Netherlands. October 1-5, 2006.
109. UC Berkeley Homecoming Seminar, Berkeley, CA. October 6, 2006.
110. Contra Costa College, San Pablo, CA. October 13, 2006.
111. Invited Presentation, 3rd International *E. coli* Alliance Conference, Jeju, South Korea. November 1-3, 2006.

112. Seminar, IBM Almaden Research Center, San Jose, CA. November 7, 2006.
113. Invited Presentation, William L. Brown Symposium, Missouri Botanical Garden, St. Louis, MO. November 10-11, 2006.
114. Seminar, University of California, San Francisco, Department of Biophysics and Chemistry, San Francisco, CA. November 16, 2006.
115. Invited Presentation, Keystone Symposium, Drugs Against Protozoan Parasites, Lake Tahoe, CA. January 28, 2007.
116. Keynote Address, Biotechnology and Biological Sciences Research Council, BBSRC Workshop in Synthetic Biology, Alexandra House, Wroughton, Swindon, UK. February 8, 2007.
117. Seminar, Stanford University, Department of Microbiology, Stanford, CA. February 16, 2007.
118. Keynote Address, The World Congress on Industrial Biotechnology & Bioprocessing, Biotechnology Industry Organization, Orlando, FL. March 23, 2007.
119. Keynote Address, Joint Genome Institute User's Meeting, Walnut Creek, CA. March 28, 2007.
120. Seminar, University of Missouri, Columbia, Department of Biochemistry, Columbia, MO. April 13, 2007.
121. Panelist, Burrill General Partners Meeting, San Francisco, CA. April 17, 2007.
122. Keynote Address, Recomb 2007, Oakland, CA. April 23, 2007.
123. Seminar, Harvard Malaria Symposium, Harvard University, Cambridge, MA. April 24, 2007.
124. Seminar, Georgia Tech University, Center for the Study of Systems Biology, Atlanta, GA. May 2, 2007.
125. Seminar, Georgia Tech University, Department of Chemical Engineering, Atlanta, GA, May 3, 2007.
126. Seminar, Northern California AIChE, Berkeley, CA. May 15, 2007.
127. Seminar, University of British Columbia, Michael Smith Laboratories, Vancouver, British Columbia, Canada. May 17, 2007.
128. Seminar, Congressional Biomedical Research Caucus, Washington, D.C., May 23, 2007.
129. Seminar, PARC Forum, Palo Alto Research Center, Palo Alto, CA. May 24, 2007.
130. Seminar, Harvard University, Department of Chemistry, Cambridge, MA, May 31, 2007.
131. Seminar, Kavli Futures Symposium, Ilulissat, Greenland. June 13, 2007.
132. Seminar, University of Manchester, Manchester Institute of Biotechnology, Manchester, UK. July 12, 2007.
133. Presentation, Biochemical Engineering XV, Quebec City, Canada. July 12, 2007.
134. Presentation, Natural Products Gordon Research Conference, Tilton, NH. July 25, 2007.
135. Presentation, Society for Industrial Microbiology Meeting, Denver, CO. July 29, 2007.
136. Presentation, Energy Modeling Forum, Workshop on Climate Impacts and Integrated Assessment, Snowmass, CO. August 1, 2007.
137. Keynote Address, 10th Functional Genomics Meeting on Synthetic Biology, Goteborg, Sweden. August 28, 2007.
138. Presentation, KI International Symposium Future Design, Korean Advanced Institute for Science and Technology, Daejeon, Korea. September 6, 2007.
139. Keynote Address, Enzyme Engineering XIX, Harrison Hot Springs, British Columbia, Canada. September 23, 2007.
140. Presentation, Metabolic Engineering Meeting, Mathematical Biosciences Institute, Ohio State University, Columbus, OH. September 24, 2007.
141. Keynote Address, Frontiers in Transgenesis, Danforth Center, St. Louis, OH. September 28, 2007.
142. Seminar, Rice University, Department of Bioengineering, Houston, TX. October 10, 2007.
143. Presentation, Malaria Forum, Bill & Melinda Gates Foundation, Seattle, WA. October 17, 2007.
144. Presentation, Pop!Tech, Camden, ME. October 20, 2007.
145. Presentation, Energy Roundtable, Stanford University, Hoover Institute, Stanford, CA. November 20, 2007.

146. Presentation, Biological and Environmental Research Advisory Committee (BERAC), Washington, DC. November 29, 2007.
147. Harry S. Truman Award Lecture, Sandia National Laboratories, Albuquerque, NM. December 5, 2007.
148. Presentation, International Conference on Cellular & Molecular Bioengineering, Nanyang Technological University, Singapore. December 10, 2007.
149. Presentation, Symposium on Future Directions in Research at the Intersection of the Physical and Life Sciences (RIPLS), National Academy of Science, Washington, D.C., December 19, 2007.
150. Keynote Address, Technology Innovation Conference, Novozymes, Copenhagen, Denmark. January 13, 2008.
151. Presentation, US-EC Workshop on Bioenergy, San Francisco, CA. February 22, 2008.
152. Keynote Address, 6th TLL Life Sciences Symposium, Temasec Life Sciences Laboratories, Singapore National University, Singapore. January 25, 2008.
153. Presentation, Orinda Intermediate School, Orinda, CA. January 30, 2008.
154. Keynote Address, 12th Netherlands Biotechnology Conference, Ede, The Netherlands. March 14, 2008.
155. Presentation, Symposium on Synthetic Biology, University of Arizona, Tucson, AZ. March 19, 2008.
156. Seminar, Duke University, Department of Biochemistry, Durham, NC. March 21, 2008.
157. Seminar, Reliance Life Sciences, Mumbai, India. March 28, 2008.
158. Seminar, Council of Scientific and Industrial Research, New Dehli, India. March 30, 2008.
159. Seminar, University of Nevada, Department of Chemical Engineering, Reno, NV. April 7, 2008.
160. Seminar, University of California, Berkeley, Department of Mechanical Engineering, Berkeley, CA, March 10, 2008.
161. Presentation, Targeting and Tinkering with Interaction Networks, Barcelona, Spain. April 15, 2008.
162. Presentation, Institute for Systems Biology, Seattle, WA. April 21, 2008.
163. Seminar, University of Washington, Department of Bioengineering, Seattle, WA. April 22, 2008.
164. Seminar, Sangamo Biosciences, Richmond, CA. April 25, 2008.
165. Presentation, Fifth Annual World Congress on Industrial Biotechnology & Bioprocessing, Chicago, IL. April 28, 2008.
166. Seminar, California Institute of Technology, Department of Bioengineering, Pasadena, CA. May 5, 2008.
167. Seminar, Scripps Research Institute, Department of Chemistry, La Jolla, CA. May 7, 2008.
168. Presentation, Khosla Ventures CEO Summit, Carmel, CA. May 8, 2008.
169. Seminar, Novozymes, Davis, CA. May 12, 2008.
170. Seminar, *Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs*, Harvard University Medical School, Department of Microbiology, Cambridge, MA. May 27, 2008.
171. Presentation, *Engineering Microorganisms for the Production of Drugs and Fuels*, Royal Society, London, UK. June 2, 2008.
172. Presentation, Burrill & Company, San Francisco, CA. June 10, 2008.
173. Presentation, *Engineering Microbial Metabolism for Production of Advanced Biofuels*, 4th European Plant Science Organization Conference, Cote d'Azur, France. June 26, 2008.
174. Presentation, *Metabolic Pathway Engineering for Drugs and Fuels*, Gordon Research Conference on Enzymes, Coenzymes, and Metabolic Pathways, Biddeford, ME. July 14, 2008.
175. Presentation, *Microbial Synthesis of Advanced Biofuels*, Protein Society Symposium, San Diego, CA. July 21, 2008.
176. Presentation, *Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs*, Cadence, Berkeley, CA. August 18, 2008.

177. Presentation, *BioEnergy Research in the USA*, Solar & BioEnergy Symposium, University of Glasgow, Scotland. August 31, 2008.
178. Seminar, *Synthetic Biology: From Bugs to Drugs and Fuels*, University of Michigan, Detroit, MI. Sept. 3, 2008.
179. Presentation, *Synthetic Biology for Advanced Biofuels*, Society for General Microbiology, Trinity College, Dublin, Ireland. September 9, 2008.
180. Presentation, *Synthetic Biology for Synthetic Chemistry*, Patten Distinguished Seminar, University of Colorado, Boulder, CO. Sept. 11, 2008.
181. Presentation, *Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs*, 13th Annual Human Genome Meeting: Genomics and the Future of Medicine, Hyderabad, India. September 27, 2008.
182. Presentation, *Fuel and Drug Production SB4.0: The Fourth International Conference on Synthetic Biology*, Kowloon, Hong Kong, China. October 11, 2008.
183. Presentation, *Life 2.0: From Bugs to Drugs and Fuels*, Fisher Center for Real Estate & Urban Economics, Pebble Beach, CA. October 15, 2008.
184. Presentation, *Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs*, Frontier in Multi-Scale Systems Biology, Atlanta, GA. October 18, 2008.
185. Presentation, *Synthetic Biology for Synthetic Chemistry*, 2008 Britton Chance Distinguished Lecture, University of Pennsylvania, Philadelphia, PA. October 22, 2008
186. Presentation, VWR Stock Room Presentation, Emeryville, CA. October 24, 2008.
187. Seminar, *Synthetic Biology for Synthetic Chemistry*, University of Wisconsin, Madison, WI. November 17, 2008.
188. Professional Progress Award Lecture, *Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs*, AIChE Centennial Meeting. Philadelphia, PA. November 18, 2008.
189. Seminar, *Synthetic Biology for Synthetic Chemistry*, National University of Singapore, Singapore. Jan. 7, 2009.
190. Presentation, *Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs*, SBE's 2nd International Conference on Biomolecular Engineering, Santa Barbara, CA. January 19, 2009.
191. Presentation, *Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs*, AAAS Annual Meeting, Chicago, IL. February 13, 2009.
192. Seminar, *Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs* Vanderbilt Institute of Chemical Biology, Nashville, TN. February 18, 2009.
193. Merck Lecture, *Synthetic Biology for Synthetic Chemistry*, University of Virginia, Charlottesville, VA. February 19, 2008.
194. Presentation, *SynBio: From Bugs to Drugs to Fuels*, Hertz Foundation, Santa Clara, CA. March 20, 2009.
195. Seminar, *Synthetic Biology in Pursuit of Low-Cost, Effective Anti-Malarial Drugs* University of Austin, Austin, TX. March 24, 2009.
196. Presentation, *Engineering Microbial Metabolism for Production of Advanced Biofuels*, Keystone Symposia, Snowbird, UT. April 5, 2009.
197. New England Biolabs, *Engineering Microbial Metabolism for Synthesis of a Low-Cost, Effective, Anti-Malarial Drug*, Ipswich, MA. April 14, 2009.
198. Lecture, *Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs*, Boston University, Boston, MA. April 14, 2009.
199. Seminar, *Engineering Microbial Metabolism for Production of Anti-Malarial Drugs*, Boston College, Chestnut Hill, MA. April 15, 2009.
200. Seminar, *From Bugs to Biofuels*, Boston College, Boston, Chestnut Hill, MA. April 16, 2008
201. Seminar, *Synthetic Biology: A New Discipline in Biological Engineering*, Boston College, Chestnut Hill, Boston, MA. April 17, 2009.
202. Seminar, *Engineering Microorganisms for Production of Advanced Biofuels*, Bollum Symposium, University of Minnesota, Minneapolis, MN. May 6, 2009.
203. Keynote Address, *Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs*, EPSRC Centre for Synthetic Biology and Innovation, Imperial College, London, UK. May 12, 2009.
204. Seminar, *Engineering Microorganisms for Production of Drugs and Fuels*, University of California, Irvine, CA, May 21, 2009.

205. Keynote Address, 8th International Workshop on Advanced Genomics Expansion of Genome Science, *Synthetic Biology in Pursuit of Low-Cost Effective, Anti-Malarial Drugs*, Tokyo, Japan. June 16, 2009.
206. Presentation, *Synthetic Biology for Synthetic Chemistry*, Firmenich SA, Geneva, Switzerland. July 7, 2009
207. Presentation, *Synthetic Biology for Synthetic Chemistry*, Givaudan SA, Dubendorf, Switzerland, July 8, 2009
208. Presentation, *Synthetic Biology for Synthetic Chemistry*, BioTrans 2009, Berne, Switzerland. July 9, 2009
209. Presentation, *Advances in Metabolic Engineering*, Scientific Advisory Board Meeting, Genomatica, San Diego, CA. July 13, 2009
210. Presentation, *Synthetic Biology for Synthetic Fuels*, Synthetic Genes to Synthetic Life, 33rd Steenbock Symposium, University of Wisconsin, Madison, WI. August 1, 2009
211. Presentation, *Synthetic Biology for Synthetic Drugs and Fuels*, Swedish-American Life Summit, Stockholm, Sweden. August 21, 2009
212. Presentation, *Synthetic Biology for Synthetic Chemistry: From Bugs to Drugs and Fuels*, Danckwerts Lecture, World Congress on Chemical Engineering, Montreal, Canada. August 26, 2009
213. Presentation, *Metabolic Engineering of Microorganisms*, Second Tiselius Symposium on Horizons in Biochemistry, Uppsala, Sweden. September 5, 2009
214. Presentation, *Engineering Microbial Metabolism for Production of Advanced Biofuels*, Society for General Microbiology, Edinburgh, Scotland. September 7, 2009
215. Seminar, *Engineering Microbial Metabolism for Production of Artemisinin*, University of Edinburgh, Edinburgh, Scotland. September 8, 2009
216. Presentation, *Engineering Micro-Organisms for Production of Drugs and Fuels*, Society for General Microbiology, Edinburgh, Scotland. September 8, 2009
217. Seminar, *Engineering Microbial Metabolism for Drugs and Fuels*, Forefront of Genomics, UC Davis, Davis, CA. September 18, 2009
218. Presentation, *Bio-Bricks to Bio-Businesses: Building Synthetic Biology Companies*, City Campus, University of Nebraska, Lincoln, NE. September 25, 2009
219. Presentation, *Bio-Bricks to Bio-Businesses: Building Synthetic Biology Companies*, East Campus, University of Nebraska, Lincoln, NE. September 25, 2009
220. Presentation, *Engineering Microbial Metabolism for Production of Advanced Biofuels*, Symposium on Synthetic Biology, CSIR Science Centre, Delhi, India. October 19, 2009.
221. Presentation, *Synthetic Biology for Synthetic Chemistry*, International Center for Genetic Engineering & Biotechnology, Delhi, India. October 20, 2009
222. Presentation, *Synthetic Biology for Synthetic Chemistry*, 2009 3rd International Symposium on Bio-Inspired Engineering, Taipei, Taiwan. October 22, 2009
223. Seminar, *Synthetic Biology for Synthetic Chemistry: From Bugs to Drugs and Fuels*, Cox Lecture, Washington University, St. Louis, MO. October 30, 2009
224. Seminar, *Engineering Microbial Metabolism for Low-Cost, Effective, Anti-Malarial Drugs*, University of Kentucky, Lexington, KY. November 6, 2009
225. Seminar, *Synthetic Biology for Synthetic Fuels*, University of Kentucky, Lexington, KY. November 6, 2009
226. Presentation, *Engineering Microbial Metabolism for Production of Advanced Biofuels*, 2009 AIChE Annual Meeting, Nashville, TN. Nov. 10, 2009
227. Presentation, *Engineering Biology for Drugs and Fuels*, American Philosophical Society, Philadelphia, PA. November 13, 2009
228. Presentation, *The Joint BioEnergy Institute*, USDA/DOE Biomass Advisory Group, Washington, DC. December 1, 2009
229. Presentation, *Overview of Synthetic Biology*, National Science Advisory Board for Biosecurity Meeting, Bethesda, MD. December 3, 2009
230. Presentation, *Synthetic Biology in Pursuit of Low-Cost, Effective, Anti-Malarial Drugs*, Stanford University, Stanford, CA. January 26, 2010
231. Presentation, *Synthetic Biology for Synthetic Chemistry*, Chemical Sciences Roundtable, Washington, DC. February 3, 2010
232. Presentation, *Engineering Microbial Metabolism for Production of Low-Cost, Effective, Anti-Malarial Drugs*, John Hopkins University, Baltimore, MD. March 18, 2010

233. Presentation, *Engineering Microbial Metabolism for Production of the Anti-Malarial Drug Artemisinin*, 239th ACS Meeting, San Francisco, CA. March 23, 2010
234. Presentation, *Life 2.0: Synthetic Biology*, Arizona State University, Tempe, AZ. March 25, 2010
235. Presentation, *Synthetic Biology for Synthetic Chemistry*, Arizona State University, Tempe, AZ. March 26, 2010
236. Presentation, *Synthetic Biology for Synthetic Chemistry: From Bugs to Drugs and Fuels*, University of Toronto, Toronto, Ontario, Canada. April 7, 2010
237. Presentation, *Synthetic Biology for Synthetic Chemistry: From Bugs to Drugs and Fuels*, Ohio State University, Columbus, OH. April 13, 2010
238. Presentation, *Synthetic Biology for Synthetic Chemistry*, Yale University, New Haven, CT. April 14, 2010
239. Presentation, *Engineering Microbial Metabolism for Production of the Anti-Malarial Drug Artemisinin*, Institute for Systems Biology Symposium, Seattle, WA. April 19, 2010
240. Seminar, *Synthetic Biology for Synthetic Chemistry: From Bugs to Drugs and Fuels*, Nanyang Technological University, Singapore. April 30, 2010
241. Seminar, *Synthetic Biology for Synthetic Chemistry*, Carnegie Mellon, Pittsburgh, Pennsylvania. May 6, 2010
242. Seminar, *Synthetic Biology for Advanced Biofuels*, University of Alberta, Edmonton, Alberta, Canada. May 21, 2010
243. Seminar, *Synthetic Biology for Advanced Biofuels*, Stanford, Palo Alto, California. May 24, 2010
244. Presentation, *Synthetic Biology for Synthetic Chemistry*, ASM Meeting, San Diego, California. May 25, 2010
245. Seminar, *Synthetic Biology for Synthetic Chemistry*, Closs Lecture, University of Chicago, Chicago, Illinois. May 28, 2010
246. Presentation, *Engineering Microorganisms with Plant-Derived Genes to Produce Drugs and Fuels*, IAPB 2010 Congress, St. Louis, Missouri. June 9, 2010
247. Presentation, *Synthetic Biology for Synthetic Fuels*, Metabolic Engineering Conference VIII, Jeju Island, Korea. June 14, 2010
248. Presentation, *Biofuels*, World Council on Industrial Biotechnology, Jeju Island, Korea. June 18, 2010
249. Presentation, *Synthetic Biology for Synthetic Chemistry*, BOSS XII, Namur, Belgium. July 15, 2010
250. Presentation, *Synthetic Biology for Synthetic Fuels*, Conference on Cellular & Molecular Bioengineering, Singapore. August 4, 2010
251. Presentation, *Synthetic Biology for Synthetic Chemistry*, Institute of Bioengineering and Nanotechnology, Singapore, August 5, 2010.
252. Presentation, *Engineering Microbial Metabolism for Production of Advanced Biofuels*, Gothenburg Life Science Conference, Gothenburg, Sweden. August 20, 2010
253. Presentation, *Engineering Microbial Metabolism for Production of the Anti-Malarial Drug Artemisinin*, American Chemical Society Meeting, Boston, MA. August 23, 2010
254. Presentation, *Medicinal Drug Production in Microbes*, Synthetic Biology International Workshop, University of Copenhagen, Denmark. August 25, 2010
255. Seminar, *Synthetic Biology for Synthetic Chemistry*, Chinese University of Hong Kong, Hong Kong. October 16, 2010
256. Presentation, *Synthetic Biology for Synthetic Chemistry*, International Symposium on Synthetic Biology, Singapore. October 19, 2010
257. Presentation, *Synthetic Biology: From Bugs to Drugs & Fuels*, ION Beams in Biology and Medicine Workshop, Claremont Hotel, Oakland, California. October 28, 2010
258. Presentation, *Joint BioEnergy Institute: Start-up for Advanced Biofuels*, Ministry of Trade and Industry, Singapore. November 10, 2010
259. Seminar, *Synthetic Biology for Synthetic Fuels*, A*STAR Scientific Conference, Singapore. November 10, 2010
260. Presentation, *Synthetic Biology for Advanced Agri-Products*, Farm Credit Counsel, San Francisco, California. January 24, 2011
261. Panel Discussion, *The Future of Fuel: Local Solution to Global Energy Challenges*, Science at the Leshner, Walnut Creek, California. January 18, 2011

262. Presentation, *Next Generation Biofuels through Synthetic Biology*, Keystone/A*Star Symposium on Biofuels, Singapore. March 2, 2011
263. Presentation, *Synthetic Biology for Synthetic Chemistry*, Burrill, Palo Alto, California. March 10, 2011
264. Presentation, *Engineering Microbial Metabolism for Production of Anti-Malarial Drugs*, IOMs Forum on Microbial Threats Public Workshop, Washington, DC. March 15, 2011
265. Distinguished Speaker Seminar, *Synthetic Biology for Synthetic Chemistry*, John Hopkins University/NIH, Bethesda, Maryland. March 16, 2011
266. Keynote, *Sustainable Production of Advanced Biofuels*, ACS/BIOT, Anaheim, California. March 29, 2011
267. Presentation, *Synthetic Biology for Synthetic Fuels*, ExxonMobil, Galveston, Texas. April 6, 2011
268. Director's Special Colloquium Lecture, *Synthetic Biology for Synthetic Fuels*, Argonne National Laboratory, Argonne, Illinois. April 14, 2011
269. Keynote, *Synthetic Biology for Synthetic Chemistry*, Duke University, Durham, North Carolina. April 16, 2011
270. Keynote, *Synthetic Biology for Synthetic Chemistry*, Synthetic Biology for Learning and DOIng Conference, Paris, France. May 4, 2011
271. Presentation, *Synthetic Biology for Synthetic Chemistry*, Firmenich Biotech Symposium, Le Grand-Saconnex, Switzerland. May 5, 2011
272. Keynote, *Synthetic Biology for Synthetic Chemistry*, Biology by Design Symposium, Northwestern University, Evanston, Illinois. May 11, 2011
273. Seminar, *Synthetic Biology for Synthetic Chemistry*, University of California, San Francisco, California. May 24, 2011
274. Presentation, *Introduction to Synthetic Biology*, VTT, Espoo, Finland. June 9, 2011
275. Presentation, *Synthetic Biology Applications in Fuels and Chemicals Production*, VTT, Espoo, Finland. June 10, 2011
276. Presentation, *Synthetic Biology for Synthetic Chemistry*, Mexico Bio 2011, Guanajuato, Mexico. June 20, 2011
277. Presentation, *Synthetic Biology of Synthetic Fuels*, XIV Congreso Nacional de Biotecnologías y Bioingeniería, Queretaro, Mexico. June 21, 2011
278. Presentation, *Engineering Microorganisms for Production of Advanced Biofuels*, Biochemical and Molecular Engineering XVII, Seattle, Washington. June 27, 2011
279. Presentation, *Synthetic Biology for Synthetic Fuels*, Aspen Ideas Festival, Aspen, Colorado. June 28, 2011
280. Presentation, *Synthetic Biology for Synthetic Chemistry*, NASA Ames Research Center, Moffett Field, California. July 12, 2011
281. Keynote, *Sustainable, Biological Production of Hydrocarbons*, Synthetic Biology Biobased Future, Berkeley, CA. August 31, 2011
282. Presentation, *Synthetic Biology for Synthetic Fuels*, Poptech!, New York, NY. September 8, 2011
283. Keynote, *Sustainable, Microbial Production of Chemical and Fuels*, Dow Innovation Student Challenge Awards, Berkeley, CA. October 5, 2011
284. Presentation, *Synthetic Biology: From Bugs to Drugs and Fuels*, Siebel Scholars Conference, Chantilly, VA. October 15, 2011
285. Seminar, *Sustainable, Biological Production of Hydrocarbons*, University of Washington, Seattle, WA. October 19, 2011
286. Keynote, *Synthetic Biology for Synthetic Chemistry: Biological Production of Hydrocarbons*, SystemsX Conference, Basel, Switzerland. October 25, 2011
287. Keynote, *Synthetic Biology for Synthetic Chemistry*, Cold Spring Harbor – Asia Symposium, Suzhou, China. November 7, 2011
288. Seminar, *Synthetic Biology for Synthetic Chemistry*, Stanford University, Palo Alto, CA. February 3, 2012
289. Seminar, *Synthetic Biology for Synthetic Chemistry*, Gladstone Institute of Virology and Immunology, San Francisco, CA. March 22, 2012
290. Seminar, *Engineering Microbial Hydrocarbon Metabolism for Production of Advanced Fuels*, Genetics Department, Yale University, New Haven, CT. April 3, 2012
291. Tetelman Award Lecture, *Life 2.0: Engineering Biology to Change the World*, Yale University, New Haven, CT. April 4, 2012

292. Seminar, *Synthetic Biology for Synthetic Chemistry*, Virginia Commonwealth University, Richmond, VA. April 17, 2012
293. Keynote, *Microbial Production of Artemisinin*, Bay Area World Malaria Day Symposium, San Francisco, CA. April 25, 2012
294. Seminar, *Engineering Hydrocarbon Biochemistry in Microbes*, University of Calgary, Calgary, Alberta, Canada. May 1, 2012
295. Katz Ward Lecture 1, *Life 2.0: Engineering Biology for Sustainable Development*, Katz Lecture, University of Michigan, Ann Arbor, MI. May 3, 2012
296. Katz Award Lecture 2, *Engineering Microbial Hydrocarbon Metabolism for Production of Advanced Fuels*, Katz Lecture, University of Michigan, Ann Arbor, MI. May 4, 2012
297. Heuermann Award Lecture, *The Bold Future of Alternative Energy*, University of Nebraska, Lincoln, NE. May 8, 2012
298. Seminar, *Synthetic Biology for Synthetic Fuels*, Concordia University, Montreal, Quebec, Canada. May 21, 2012
299. Lecture, *Synthetic Biology towards Biofuels*, Molecular Frontiers Symposium, Stockholm, Sweden. May 30, 2012
300. Award Lecture, *Advanced Feedstocks to Advanced Fuels: An Integrated Approach*, Metabolic Engineering IX, Biarritz, France. June 6, 2012
301. Lecture, *Advanced Fuels from Advanced Feedstocks*, enGENEious Conference, University of Oxford, Oxford, UK. June 26, 2012
302. Lecture, *Synthetic Biology: From Bugs to Drugs and Fuels*, KingsLinks Colloquium, University of Edinburgh, Edinburgh, UK. June 27, 2012
303. Keynote, *Opportunities and Challenges for Synthetic Biology in Biocatalysis*, GRC Biocatalysis Conference, Smithfield, RI. July 8, 2012
304. Lecture, *Synthetic Biology for Synthetic Fuels*, CAS Conference on Synthetic Biology, Martinsried, Germany. July 25, 2012
305. Lecture, *Synthetic Biology for Synthetic Chemistry*, Ajinomoto-Genetika Research Institute, Moscow, Russia. July 27, 2012
306. Keynote, *Synthetic Biology for Synthetic Fuels*, Society for Industrial Microbiology Annual Meeting, Washington, DC. August 12, 2012
307. Keynote, *Synthetic Biology for Synthetic Fuels*, Pacific Northwest National Laboratory, Richland, WA. August 14, 2012
308. Keynote, *Metabolic Engineering of Hydrocarbon Production*, University of Western Ontario, London, Ontario, Canada. August 24, 2012
309. Seminar, *Synthetic Biology for Synthetic Chemistry*, National University of Singapore, Singapore. September 11, 2012
310. Seminar, *Advanced Fuels from Advanced Plants*, University of Washington, Seattle, Washington. September 18, 2012
311. Seminar, *Advanced Fuels from Advanced Plants*, Cornell University, Ithaca, NY. September 20, 2012
312. Guest lecturer in several classes, Masters Week, University of Nebraska, Lincoln, Nebraska. November 9, 2012
313. Seminar, *Biofuels for the Future*, Chalmers University of Technology, Gothenburg, Sweden. November 17, 2012
314. Lecture, *Synthetic Biology for Synthetic Chemistry*, American Society for Cell Biology Annual Meeting, San Francisco, CA. December 18, 2012
315. Lecture, *Managing an Energy Hub*, Joint Center for Energy Storage Research, Oakland, CA. December 18, 2012
316. Panel, *The Role of the Research Labs in our Regional Economy*, CCUSA 2013, Concord, CA. January 24, 2013
317. Seminar, *Metabolic Engineering of Hydrocarbon Production*, Georgia Institute of Technology, Atlanta, GA. March 5, 2013
318. Panel, *Programming Life, The Revolutionary Potential of Synthetic Biology*, SynBERC & Discover Event, UC Berkeley, Berkeley, CA. March 25, 2013
319. Award Talk, *Metabolic Engineering of Microbial Metabolism for Hydrocarbon Production*, ACS National Meeting and Exposition. New Orleans, LA. April 9, 2013
320. Panel, *How will Synthetic Biology and Conservation Shape the Future of Nature?* Wildlife Conservation Meeting, Clare College, Cambridge, England. April 10, 2013

321. Seminar, *Synthetic Biology for Synthetic Chemistry*, Nanyang Technological University, Singapore. April 18, 2013
322. Seminar, *Life 2.0: Engineering Biology for Sustainable Development*, University of St. Thomas, St. Paul, MN. May 1, 2013
323. Seminar, *Advanced Fuels from Advanced Plants*, University of St. Thomas, St. Paul, MN. May 3, 2013
324. Lecture, *Engineering Microbial Metabolism for Production of Advanced Hydrocarbons*, Cell Factories and Biosustainability Conference, Hillerod, Denmark. May 6, 2013.
325. Promega Biotechnology Research Award Lecture, *Advanced Plants to Advanced Fuels*, 2013 ASM General Meeting, Denver, CO. May 19, 2013
326. Lecture, *Synthetic Biology for Synthetic Chemistry*, Biochemical and Biomolecular Engineering XVIII Conference, Beijing, China. June 16, 2013
327. George Washington Carver Award acceptance speech, 10th Annual BIO World Congress on Industrial Biotechnology, Montreal, Quebec, Canada. June 18, 2013
328. Lecture, *Synthetic Biology for Synthetic Chemistry*, SB6.0, London, England. July 11, 2013
329. Seminar, *Engineering Biology for Sustainable Development*, University of Pittsburgh, Pittsburgh, PA. July 25, 2013
330. Seminar, *Engineering Microbial Hydrocarbon Metabolism for Production of Advanced Fuels*, University of Pittsburgh, Pittsburgh, PA. July 26, 2013
331. Lecture, *Engineering Microorganisms for Production of Hydrocarbons*, International Conference on Systems Biology (ICSB), Copenhagen, Denmark. September 3, 2013.
332. Panel, *New Biology: New World?*, Science at the Theater, Berkeley, California. September 23, 2013
333. Keynote, *Advanced Fuels from Advanced Plants*, Advanced Biofuels Leadership Conference, San Francisco, CA. October 10, 2013
334. Seminar, *Engineering Microbial Metabolism for Production of Hydrocarbons*, Carnegie Institution for Science, Stanford, CA. October 11, 2013
335. Lecture, *The Challenges and Opportunities in Biofuels*, Agro Nexus Summit, Herzliya, Israel. October 20, 2013
336. Seminar, *Advanced Fuels from Advanced Plants*, Weizmann Institute, Rehovot, Israel. October 22, 2013
337. Award Lecture, *Synthetic Biology for Synthetic Fuels*, AIChE Awards, San Francisco, CA. November 5, 2013
338. Lecture, *Synthetic Biology at Berkeley Lab*, Berkeley Lab Community Advisory Group Meeting, Berkeley, CA. January 13, 2014
339. Lecture, *Synthetic Biology for Synthetic Chemistry*, Is a Ph.D. for Me? Synberc Symposium, Atlanta, GA. February 1, 2014
340. Lecture, *Microbial Engineering for Biofuel Production*, Environmental Defense Fund Science Day, Sausalito, CA. February 5, 2014
341. Lecture, *Engineering Hydrocarbon Production*, American Association for the Advancement of Science (AAAS) Annual Meeting, Chicago, IL. February 15, 2014
342. Seminar, *Synthetic Biology for Synthetic Chemistry*, Cold Spring Harbor Laboratory, Cold Spring, NY. March 6, 2014
343. Seminar, *Synthetic Biology for Synthetic Chemistry*, National University of Singapore, Singapore. March 18, 2014
344. Lecture, *Synthetic Biology for Synthetic Chemistry*, International Singapore Lipid Symposium (iSLS5), Singapore. March 19, 2014
345. Lecture, *The Path Forward for Biobased Fuels and Chemicals*, TOTAL Annual R&D Meeting, Paris, France. April 3, 2014
346. Seminar, *Synthetic Biology for Synthetic Chemistry*, University of Chicago, Chicago, IL. April 14, 2014
347. Panel, *Better, Faster, Cheaper: The Technologies and Resources Changing the Game of Manufacturing*, DOE's Clean Energy Manufacturing Initiative Summit (CEMI), San Francisco, CA. April 17, 2014
348. Lecture, *Engineering Microbial Production of Artemisinin: Lessons for Biomanufacturing*, Novartis, Emeryville, CA. April 25, 2014
349. Seminar, *Synthetic Biology for Synthetic Chemistry*, Columbia University, New York, NY. April 28, 2014

350. Lecture, *Synthetic Biology for Synthetic Chemistry*, BASF, Ludwigshafen, Germany. May 6, 2014
351. Lecture, *Synthetic Biology for Synthetic Fuels*, Synmikro Microbial Formation of Biofuels and Platform Chemicals Symposium, Marburg, Germany. May 7, 2014
352. Seminar, *Life 2.0 Engineering Biology for Sustainable Development*, Ohio State University, Columbus, OH. May 28, 2014
353. Seminar, *Engineering Microbial Hydrocarbon Metabolism for Production of Advanced Fuels and Chemicals*, Ohio State University, Columbus, OH. May 29, 2014.
354. Talk, *Production of Advanced Fuels from Sugars Using Engineered Microorganisms*, 2014 DOE-BER Bioenergy Workshop, Washington, DC. June 23, 2014
355. Keynote, *Synthetic Biology for Synthetic Chemistry*, 16th European Congress on Biotechnology, Edinburgh, UK. July 13, 2014
356. Seminar, *Metabolic Engineering of Yeast for Production of Fuels and Chemicals*, Cold Spring Harbor Laboratory, Cold Spring, NY. August 4, 2014
357. Talk, *Synthetic Biology for Advanced Biofuels*, ACS National Meeting, San Francisco, CA. August 12, 2014
358. Seminar, *Synthetic Biology for Synthetic Chemistry*, University of Virginia, Charlottesville, VA. October 2, 2014
359. Talk, *Engineering Microbes for Chemicals and Fuels*, Synbio Conference, Berkeley, CA. November 10, 2014
360. Talk, *Advanced Plants to Advanced Fuels*, Secretaria de Energia de Mexico, Mexico, D.F., Mexico. November 24, 2014
361. Talk, *Engineering Microbes for Chemicals and Fuels*, Mexican Petroleum Institute, Mexico, D.F., Mexico. November 24, 2014
362. Panel, *Biomanufacturing in California and Israel*, Globes International Economic Conference, Tel Aviv, Israel. December 7, 2014
363. Presentation, *Advanced Plants to Advanced Fuels*, Eilat-Eilat Renewable and Green Energy Conference, Eilat, Israel. December 8, 2014
364. Panel, *Translating Academic Innovation to Biotechnology Development*, Center for Emerging and Neglected Diseases, University of California, Berkeley, CA. January 9, 2015
365. Talk, *Engineering Microbes to Produce our Stuff*, UC Emeritus Association, Berkeley, CA. January 24, 2015
366. Talk, *Engineering Microbes for Production of Chemicals and Fuels*, National University of Singapore, Singapore. January 27, 2015
367. Talk, *Reengineering Life*, Stanford University School of Medicine, Stanford, CA. February 23, 2015
368. Talk, *Engineering Microbes to Solve Global Challenges*, Miller Institute for Basic Science in Research, Berkeley, CA. March 9, 2015
369. Earl Bakken Lecture, *Engineering Microbes to Solve Global Challenges*, American Institute for Medical and Biological Engineering (AIMBE) 2015 Annual Event, Arlington, VA. March 15, 2015
370. Keynote, *Engineering Microbes for Production of Chemicals and Fuels*, Directing Biosynthesis IV, Norwich, United Kingdom. March 27, 2015
371. Talk, *Synthetic Biology for Synthetic Chemistry, Is a PhD for Me?*, University of California, Berkeley, Berkeley, CA. April 12, 2015
372. Talk, *Microbial Production of Artemisinin*, Universities Allied for Essential Medicines, University of California Berkeley, Berkeley, CA. April 13, 2015
373. Abbott Lecture, *Life 2.0: Engineering Biology for Sustainable Development*, Rensselaer Polytechnic Institute, Troy, NY. April 15, 2015
374. Abbott Lecture, *Advanced Fuels from Advanced Plants*, Rensselaer Polytechnic Institute, Troy, NY. April 16, 2015
375. Honorary Doctorate Talk, *Engineering Microbes to Solve Global Challenges*, Chalmers University of Technology, Gothenburg, Sweden. May 8, 2015
376. Legislative Committee Presentation, *Carbon-neutral Transportation Fuels from Plant Biomass*, State Capitol, Sacramento, CA. June 17, 2015
377. Lecture, *Engineering Microbial Metabolism for Production of Chemicals*, Enabling Technologies for Eukaryotic Synthetic Biology Conference, Heidelberg, Germany. June 23, 2015
378. Lecture, *Synthetic Biology for Synthetic Chemistry*, RWTH-ERS Synthetic Biology Workshop, Aachen, Germany. June 24, 2015

379. Lecture, *Engineering Microbial Metabolism for Synthesis of Advanced Biofuels*, Tailor-Made Fuels from Biomass Conference, RWTH - Aachen University, Aachen, Germany. June 25, 2015
380. Lecture, *Engineering Microbes for Production of Drugs, Fuels, and Chemicals*, GRC Conference on Synthetic Biology, Newry, ME. July 1, 2015
381. Lecture, *Engineered Polyketide Synthases for Production of Commodity and Specialty Chemicals*, ECI Biochemical Engineering Conference, Puerto Vallarta, Mexico. July 13, 2015.
382. Seminar, *Engineering Microbes for Production of Chemicals and Fuels*, National University of Singapore, Singapore. September 29, 2015
383. Seminar, *Life 2.0: Engineering Biology for Sustainable Development*, SynCTI Symposium, National University of Singapore, Singapore. September 30, 2015
384. Seminar, *Engineering Microbes for Production of Chemicals and Fuels*, University of California, Davis, Davis, CA. October 12, 2015
385. Seminar, *Engineering Biology to Solve Global Challenges*, Lamar University, Beaumont, TX. October 14, 2015
386. Lecture, *Engineering Biology to Solve Global Challenges*, Young President's Organization, Haas School of Business, University of California, Berkeley, Berkeley, CA. November 5, 2015
387. Panel, *Path Finders in Synthetic Biology*, SynBioBeta Conference, San Francisco, CA. November 5, 2015
388. Moderator, *Engineering of Cellular Processes*, Design Principles for Engineering Biology Workshop, National Science Foundation, Tyson's Corner, VA. November 12, 2015
389. Lecture, *California Perspective on Biofuels and Energy*, Biomass Research and Development Technical Advisory Committee, Berkeley, CA. November 19, 2015
390. Discussion Leader, *Manufacturing Reimagined*, World Economic Forum, Davos, Switzerland. January 20, 2016
391. Lecture, *Energy Disruptor: Biotechnology at the Cutting Edge*, World Economic Forum, Davos, Switzerland. January 21, 2016
392. Presentation, *Biomanufacturing to Solve Global Challenges*, Google[x], Mountain View, CA. February 9, 2016
393. Seminar, *Biomanufacturing and the Future of Biological Engineering*, National University of Singapore, Singapore. February 16, 2016.
394. Seminar, *Biomanufacturing to Solve Global Challenges*, University of San Diego, La Jolla, CA. March 11, 2016
395. Presentation, *Engineering Microbes for Production of Chemicals and Fuels*, American Chemical Society National Meeting, San Diego, CA. March 14, 2016
396. Virtual Talk, *Engineering Microbes for Production of Chemicals and Fuels*, Indo-US Workshop on Cell Factories. March 19, 2016.
397. Katz Lecture, *Engineering Biology for Sustainable Development*, City College of New York, New York, NY. April 11, 2016
398. Seminar, *Engineering Microbial Metabolism for Production of Chemicals and Fuels*, Rutgers, The State University of New Jersey, Piscataway, NJ. April 12, 2016
399. Panel, *Agent of Change: The California-Israel Global Innovation Partnership*, Milken Institute, Beverly Hills, CA. May 4, 2016
400. Talk, *Engineering Microbial Metabolism for Production of Chemicals and Fuels*, 7th Life Science Symposium, Delft, The Netherlands. May 10, 2016
401. Seminar, *Engineering Microbial Metabolism for Production of Chemicals and Fuels*, Delft University of Technology, Delft, The Netherlands. May 11, 2016
402. Seminar, *Engineering Microbial Metabolism for Production of Chemicals and Fuels*, California Institute of Technology, Pasadena, CA. May 24, 2016
403. Talk, *Emerging Technologies, Synthetic Biology*, MLS LP Meeting, Berkeley, CA. May 24, 2016
404. Panel, *OUT in Science*, 3rd Annual OUT in Science, University of San Francisco, San Francisco, CA. May 26, 2016
405. Board Discussion, *Interconnection Between Agriculture and Technology*, California State Board of Food and Agriculture, Amyris, Emeryville, CA. May 31, 2016

406. Talk, *Engineered Polyketide Synthases for Production of Commodity and Specialty Chemicals*, Metabolic Engineering 11, Kobe, Japan. June 28, 2016.
407. Panel, *Advanced Molecular and Cellular Technologies*, SEAB Task Force on Biomedical Sciences, Berkeley, CA. July 18, 2016
408. Talk, *Engineered Polyketide Synthases for Production of Commodity and Specialty Chemicals*, SEED Conference, Chicago, IL. July 19, 2016
409. Panel, *Advancing U.S. Biosciences - Technology*, U.S. Council on Competitiveness, Washington, DC. July 27, 2016
410. Seminar, *Engineering Microbial Metabolism for Production of Chemicals and Fuels*, Harvard University, Cambridge, MA. September 8, 2016
411. Seminar, *Engineering Microbial Metabolism for Production of Chemicals and Fuels*, Boston University, Boston, MA. September 9, 2016
412. Class II - Biological Sciences Speaker, *Biology as Technology*, Induction Ceremony, American Academy of Arts and Sciences. Cambridge, MA. October 8, 2016
413. Talk, *Biomanufacturing and the Future of Biological Engineering*, Global Cre8 Summit, Shenzhen, China. October 15, 2016
414. Talk, *Engineering Microbes for Production of Chemicals and Fuels*, 3rd Synthetic Biology Congress, London, United Kingdom. October 20, 2016
415. Seminar, *Engineering Microbial Metabolism for Production of Chemicals and Fuels*, Ecole Polytechnique Federale de Lausanne (EPFL), Lausanne, Switzerland. October 24, 2016
416. Talk, *Ten Years of Public-Private Partnership*, Singapore Consortium for Synthetic Biology (SINERGY), Singapore. November 8, 2016
417. Talk, *Advances in Metabolic Engineering*, American Institute of Chemical Engineers (AIChE) Annual Meeting, San Francisco, CA. November 15, 2016
418. Talk, *Engineered Polyketide Synthases for Production of Chemicals and Fuels*, Novozymes Prize Symposium, Hellerup, Denmark. November 21, 2016
419. Talk, *Life 2.0: Engineering Biology for Sustainable Development*, TechCracker 2016, Whistler, Canada. December 3, 2016
420. Talk, *Biomanufacturing to Solve Global Challenges*, International Society for Pharmaceutical Engineering (ISPE), San Francisco, CA. December 6, 2016
421. Talk, *Biomanufacturing to Solve Global Challenges*, IET/SynbiCITE Engineering Biology Conference, London, England, United Kingdom. December 13, 2016
422. Talk, *Using Biology to Solve the Nation's Energy and Environmental Challenges*, California Energy Commission, Berkeley, CA. January 9, 2017
423. Talk, *The Joint BioEnergy Institute, EBI-Royal Shell Workshop*, Emeryville, CA. January 13, 2017
424. Talk, *Engineered Polyketide Synthases for Production of Commodity and Specialty Chemicals*, Synthetic Biology for Natural Products Conference, Cancun, Mexico. March 7, 2017
425. Talk, *Engineering Microbial Metabolism for Production of Chemicals and Fuels*, University of Dundee, Perthshire, Scotland. March 17, 2017
426. Talk, *Synthetic Biology for Synthetic Chemistry*, University of Michigan, Ann Arbor, MI. March 21, 2017
427. Keynote, *Synthetic Biology for Synthetic Chemistry*, Microbiology Retreat, University of California, Berkeley, Berkeley, CA. March 23, 2017
428. Talk, *Kicking the Habit: Building Biology to Replace the Entire Oil Barrel*, The Novo Nordisk Foundation Center for Biosustainability, Lyngby, Denmark. March 27, 2017
429. Talk, *Advanced Fuels from Advanced Plants*, Nebraska EPSCoR NRIC on Predictive Crop Design: Genome to Phenome Conference, Lincoln, NE. April 7, 2017
430. Panel Leader, *Renewables and Biofuels Session*, National Lab Day, Fayetteville, Arkansas. April 18, 2017
431. Talk, *Synthetic Biology for Synthetic Chemistry*, Northwestern University. Evanston, IL. April 25, 2017
432. Talk, *Engineering Biology to Solve Global Challenges*, UC Berkeley Executive Education, Berkeley, CA. May 23, 2017

433. Talk, *Engineering Microbial Metabolism for Production of Chemicals and Fuels*, International Consortium of Applied Bioeconomy Research (ICABR), Berkeley, CA. June 1, 2017
434. Talk, *Engineering Biology to Solve Grand Challenges*, Cheung Kong Graduate School of Business, Emeryville, CA. July 13, 2017
435. Talk, *Engineering Biology for Sustainable Development*, Synthetic & Systems Biology Summer School, Cambridge, UK. July 17, 2017
436. Talk, *Synthetic Biology for Synthetic Chemistry*, Synthetic & Systems Biology Summer School, Cambridge, UK. July 17, 2017
437. Amgen Award Lecture, *Engineered Polyketide Synthases: Molecular Foundries for Commodity Chemicals, Specialty Chemicals, and Biofuels*, Biochemical and Molecular Engineering XX, Newport Beach, CA. July 19, 2017
438. Panel, *U.S. Bioscience and Biomanufacturing*, Council on Competitiveness, Washington, DC. July 25, 2017
439. Talk, *Engineered Polyketide Synthases for Production of Commodity and Specialty Chemicals*, GRC Natural Products & Bioactive Compounds, Andover, NH. August 1, 2017
440. Talk, *Engineered Polyketide Synthases: Molecular Foundries for Commodity Chemicals, Specialty Chemicals, and Biofuels*, Institute on Molecular and Cell Biology, Singapore. August 22, 2017
441. Keynote, *Biomanufacturing and the Future of Biological Engineering*, Shenzhen Institutes of Advanced Technology (SIAT), Shenzhen, China. August 24, 2017

Workshops, Panels, and Short Courses

1. Massachusetts Institute of Technology, Department of Chemical Engineering. August 10-14, 1998. "Metabolic Engineering Short Course."
2. AIChE workshop on Bioinformatics. Houston, TX. March 13-14, 1999.
3. Massachusetts Institute of Technology, Department of Chemical Engineering. August 10-14, 1999. "Metabolic Engineering Short Course."
4. DARPA workshop on Metabolic Engineering. Washington, D.C. March 24 – 26, 2000.
5. Lawrence Berkeley National Laboratory Workshop "Solar to Fuel – Future Challenges and Solutions", Berkeley, CA. March 28-29, 2005.
6. 2005 Genomes to Life Program Workshop, Washington, DC. February 6-14, 2005.
7. Intercollegiate Genetically Engineered Machine Competition (iGEM) 2005 Teacher's Workshop, Boston, MA. May 14-15, 2005.
8. European Science Foundation Exploration Workshop, "Synthetic Biology: Constructing and Deconstructing Life" Arila, Spain. October 13-16, 2005.
9. The National Science Foundation workshop, "Design Principles for Engineering Biology", Tysons Corner, VA. November 11-12, 2015.

Presentations at National or International Meetings

1. J. D. Keasling, A. Joshi, and B. O. Palsson. 1987. "Towards rational design and exploitation of recombinant prokaryotic cells." *194th ACS National Meeting*, New Orleans, LA.
2. J. D. Keasling and B. O. Palsson. 1988. "Dynamics and control of vector replication." *196th ACS National Meeting*, Los Angeles, CA.
3. J. D. Keasling and B. O. Palsson. 1989. "Design in bacterial plasmids." *National AIChE Meeting*, San Francisco, CA.
4. J. D. Keasling, B. O. Palsson, and S. Cooper. 1990. "Cell-cycle-specific F'/lac plasmid replication: regulation by cell size control of initiation." *European Molecular Biology Organization Meeting on the Bacterial Cell Cycle*, Collonges-La Rouge, France.
5. J. D. Keasling, S. Cooper, and B. O. Palsson. 1990. "Dynamics and control of plasmid replication." *AIChE National Meeting*, Chicago, IL.
6. S. Cooper and J. D. Keasling. 1991. "F plasmid replication: cell-cycle specificity, regulation by cell size control of initiation, and the relationship of different origins of replication to plasmid synthesis." *Human Frontier Science Program Workshop on Regulatory Mechanisms of DNA Replication*, Les Arcs, France.

7. J. D. Keasling and S. Cooper. 1991. "Cell-cycle-specificity, regulation by cell-size control of initiation, and the relationship of different origins of replication to plasmid synthesis." *American Society for Microbiology*, Dallas, TX.
8. S. Cooper and J. D. Keasling. 1991. "Synthesis and regulation of cytoplasm, DNA, cell surface, and plasmid during the bacterial division cycle." *Cold Spring Harbor Symposium on Quantitative Biology*, Cold Spring Harbor, NY.
9. S. Cooper and J. D. Keasling. 1991. "Cell-cycle-specific F plasmid replication during the *Escherichia coli* division cycle: regulation of replication by cell size control of initiation." *Gordon Conference on Extrachromosomal Elements*.
10. J. D. Keasling, S. Cooper, and B. O. Palsson. 1991. "Dynamics and Control of Bacterial Plasmid Replication." *AIChE National Meeting*, Los Angeles, CA.
11. J. D. Keasling, B. O. Palsson, and S. Cooper. 1992. "Plasmid Replication during the Cell Cycle." *Keystone Symposium on Molecular Mechanisms in DNA Replication and Recombination*, Taos, NM.
12. J. D. Keasling, L. Bertsch, and A. Kornberg. 1993. "Guanosine pentaphosphate phosphohydrolase of *Escherichia coli* is a long-chain polyphosphatase." *205th ACS National Meeting*, Denver, CO.
13. J. D. Keasling, S. T. Sharfstein, B. Deaton, and G. Hupf. 1993. "Engineering and phosphate and energy metabolism in micro-organisms." *Biochemical Engineering VIII*, Princeton, NJ.
14. D. G. Bolesch and J. D. Keasling. 1993. "Anaerobic bioremediation of TCE contamination in groundwater." *Zeneca Process Technology Conference*, Leeds, UK.
15. S. T. Sharfstein, B. Deaton, J. D. Keasling. 1993 (1994). "Engineering and phosphate and energy metabolism in micro-organisms." *207th American Chemical Society National Meeting*, San Diego, CA
16. J. D. Keasling, H. Kuo, and G. Vahanian. 1994. "A probabilistic representation of the *Escherichia coli* cell cycle." *AIChE National Meeting*, San Francisco, CA.
17. S. T. Sharfstein, S. J. Van Dien and J. D. Keasling. 1994. "Engineering and phosphate and energy metabolism in micro-organisms." *AIChE National Meeting*, San Francisco, CA.
18. G. A. Hupf, N. Shapiro and J. D. Keasling. 1994. "Manipulation of phosphate and energy metabolism to improve heavy metal resistance and uptake." *AIChE National Meeting*, San Francisco, CA.
19. J. Pramanik and J. D. Keasling. 1994. "Mathematical analysis of fluxes through the metabolic pathways of *Escherichia coli*." *AIChE National Meeting*, San Francisco, CA.
20. R. Pape, P. Jorjani, and J. D. Keasling. 1994. "Design and construction of low-copy plasmids for metabolic engineering of *Escherichia coli*." *AIChE National Meeting*, San Francisco, CA.
21. D. Bolesch and J. D. Keasling. 1994. "Anaerobic bioremediation of chlorinated alkanes." *AIChE National Meeting*, San Francisco, CA.
22. D. Bolesch and J. D. Keasling. 1995. "Anaerobic bioremediation of chlorinated hydrocarbons." *In Situ and On-Site Bioreclamation*, San Diego, CA.
23. G. Hupf and J. D. Keasling. 1995. "Manipulation of phosphate and energy metabolism to improve heavy metal resistance and uptake." *In Situ and On-Site Bioreclamation*, San Diego, CA.
24. J. D. Keasling, S. Van Dien, S. Keyhani, and S. Sharfstein. 1995. "Engineering polyphosphate metabolism in bacteria." *Biochemical Engineering VIII*, Davos, Switzerland.
25. P. C. Michels, J. A. Baross, J. D. Keasling, and D. S. Clark. 1995. "Bioremediation potential of newly isolated, metal-tolerant archaea." *Biochemical Engineering VIII*, Davos, Switzerland.
26. J. D. Keasling, S. Van Dien, S. Keyhani, D. Bolesch, and S. Sharfstein. 1995. "Redirection of phosphate and energy metabolism through polyphosphate pathways." *AIChE National Meeting*, Miami Beach, FL.
27. J. D. Keasling, D. Szykowny, and J. Elmen. 1995. "Degradation of aromatic hydrocarbons under denitrifying conditions." *AIChE National Meeting*, Miami Beach, FL.
28. R. Brent Nielsen and J. D. Keasling. 1996. "Anaerobic bioremediation of chlorinated hydrocarbons." Engineering Foundation meeting. *Bioremediation of Surface and Subsurface Contamination* in Palm Coast, FL.
29. J. Elmen, D. Szykowny, and J. D. Keasling. 1996. "Degradation of aromatic hydrocarbons under denitrifying conditions." Engineering Foundation meeting, *Bioremediation of Surface and Subsurface Contamination* in Palm Coast, FL.

30. J. D. Keasling. 1996. "Metabolic engineering of polyphosphate metabolism in bacteria for phosphate and heavy metal bioremediation." Engineering Foundation meeting, *Bioremediation of Surface and Subsurface Contamination* in Palm Coast, FL.
31. Jaya Pramanik and J. D. Keasling. 1996. "A flux-based model of metabolism: effect of biomass requirements and redirected pathways on central metabolism." *211th American Chemical Society National Meeting* in New Orleans, LA.
32. J. D. Keasling. 1996. "Metabolic engineering for bioremediation of inorganic pollutants" *Metabolic Engineering*, Danvers, MA.
33. R. B. Nielsen and J. D. Keasling. 1996. "Kinetic parameter evaluation and modeling of the anaerobic conversion of trichloroethene to ethene." *AIChE National Meeting*, Chicago, IL.
34. N. Eliashberg and J. D. Keasling. 1996. "Simulation of bacterial growth and substrate utilization in a polluted groundwater environment." *AIChE National Meeting*, Chicago, IL.
35. J. Pramanik and J. D. Keasling. 1996. "A flux-based metabolic model for bacteria: study of metabolic regulation and its sensitivity to biomass composition." *AIChE National Meeting*, Chicago, IL.
36. S. J. Van Dien and J. D. Keasling. 1996. "Engineering the polyphosphate levels in *Escherichia coli* and the effects on the phosphate-starvation response." *AIChE National Meeting*, Chicago, IL.
37. J. Pramanik, P. L. Trelstad, and J. D. Keasling. 1996. "Analysis of bioremediation processes using a flux-based metabolic model." *AIChE National Meeting*, Chicago, IL.
38. S. J. Van Dien and J. D. Keasling. 1997. "Engineering the polyphosphate levels in *Escherichia coli*: Effects of energy and phosphate starvation." *ACS National Meeting*, San Francisco, CA.
39. R. B. Nielsen and J. D. Keasling. 1996. "Anaerobic biodegradation of chlorinated hydrocarbons by groundwater microorganisms." *ACS National Meeting*, San Francisco, CA.
40. J. Pramanik, P. L. Trelstad, and J. D. Keasling. 1996. "Analysis of the metabolism of enhanced biological phosphorus removal using a fluxed-based metabolic model." *ACS National Meeting*, San Francisco, CA.
41. J. D. Keasling. 1997. "*In situ* bioremediation of chlorinated and aromatic hydrocarbons in groundwater: application of modern molecular and mathematical tools." *Biochemical Engineering X*, Kananaskis, Canada.
42. J. D. Keasling. 1997. "Development of tools for the metabolic engineering of bacteria." *Biochemical Engineering X*, Kananaskis, Canada.
43. J. D. Keasling, J. Pramanik, and J. Benemann. 1997. "Metabolic engineering for hydrogen fermentations." *Biohydrogen '97*, Kona, Hawaii.
44. N. Eliashberg and J. D. Keasling. 1997. "Simulation of spacial heterogeneity development in a mutualistic mixed species biofilm." *AIChE National Meeting*, Los Angeles, CA.
45. R. B. Nielsen and J. D. Keasling. 1997. "Kinetics of anaerobic biodegradation of chlorinated ethenes." *AIChE National Meeting*, Los Angeles, CA.
46. T. A. Carrier and J. D. Keasling. 1997. "Mechanistic modelling of prokaryotic mRNA decay." *AIChE National Meeting*, Los Angeles, CA.
47. S. J. Van Dien and J. D. Keasling. 1997. "Engineering polyphosphate metabolism in *Escherichia coli*." *AIChE National Meeting*, Los Angeles, CA.
48. K. L. Jones and J. D. Keasling. 1997. "Construction, stability, and expression of low-copy vectors derived from the *E. coli* F plasmid." *AIChE National Meeting*, Los Angeles, CA.
49. T. A. Carrier, K. L. Jones, and J. D. Keasling. 1997. "mRNA stability and plasmid copy number effects on gene expression from an inducible promoter system." *AIChE National Meeting*, Los Angeles, CA.
50. R. B. Nielsen and J. D. Keasling. 1998. "Anaerobic degradation of PCE and TCE DNAPLs by groundwater microorganisms." *Remediation of Chlorinated and Recalcitrant Compounds*, Monterey, CA.
51. E. Gilbert, A. Khlebnikov, W. Meyer-Ilse and J.D. Keasling. 1998. "Use of soft X-ray microscopy for analysis of early stage biofilm formation." *Microbial Ecology of Biofilms: Concepts, Tools and Applications. International Association on Water Quality (IAWQ)*, Lake Bluff, IL.
52. K. L. Jones, T. A. Carrier, and J. D. Keasling. 1998. "Plasmid vehicles for long-term, variable gene expression in *Escherichia coli*." *AIChE National Meeting*, Miami Beach, FL.

53. P. L. Trelstad and J. D. Keasling. 1998. "Polyphosphate Metabolism in *Acinetobacter calcoaceticus*: Implications for Enhanced Biological Phosphorus Removal." *AIChE National Meeting*, Miami Beach, FL.
54. R. Brent Nielsen and J. D. Keasling. 1998. "Anaerobic Dechlorination of PCE and TCE DNAPLs by Groundwater Microorganisms." *AIChE National Meeting*, Miami Beach, FL.
55. C. Wang, A. M. Lum, S. C. Ozuna, D. S. Clark, and J. D. Keasling. 1999. Cadmium precipitation by *Escherichia coli* producing cysteine desulphydrase." *ACS National Meeting*, Anaheim, CA.
56. R. Brent Nielsen and J. D. Keasling, 1999. "Identification of organisms present in a TCE-degrading consortium." *ACS National Meeting*, Anaheim, CA.
57. A. Khlebnikov, O. Risa, and J. D. Keasling. 1999. "Gene expression in a decoupled autocatalytic system under control of inducible promoters." *American Society for Microbiology General Meeting*, Chicago, IL.
58. E. Gilbert, A. Khlebnikov, and J. D. Keasling. 1999. "Dual-GFP labeling of cells in biofilms." *American Society for Microbiology General Meeting*, Chicago, IL.
59. S-W. Bang, D. S. Clark, and J. D. Keasling. 1999. "Precipitation of heavy metals by expression of thiosulfate reductase." *American Society for Microbiology General Meeting*, Chicago, IL.
60. C. Wang, S. C. Ozuna, D. S. Clark, and J. D. Keasling. 1999. "Metabolic engineering of microorganisms to precipitate cadmium wastes." *AIChE National Meeting*, Dallas, TX.
61. A. W. Walker and J. D. Keasling. 1999. "Metabolic engineering of bacteria for the environment: the controlled degradation of parathion." *AIChE National Meeting*, Dallas, TX.
62. P. L. Trelstad, D. Hong, and J. D. Keasling. 1999. "Understanding of the metabolism of enhanced biological phosphorus removal." *AIChE National Meeting*, Dallas, TX.
63. C. D. Smolke, T. A. Carrier, and J. D. Keasling. 1999. "Engineering single and multiple gene expression through mRNA stability control." *AIChE National Meeting*, Dallas, TX.
64. S. Reichmuth, J. D. Keasling, and H. W. Blanch. 1999. "Biodesulfurization of dibenzothiophene in *Escherichia coli* is enhanced by expression of a *Vibrio harveyi* oxidoreductase gene." *AIChE National Meeting*, Dallas, TX.
65. S.W. Kim, K.L. Jones, and J. D. Keasling. 2000. "Expression of 1-deoxy-D-xylulose-5-phosphate synthase in *Escherichia coli* Enhances Lycopene Production." *American Society for Microbiology General Meeting*, Los Angeles, CA.
66. S. E. Cowan, E. S. Gilbert, A. Khlebnikov and J. D. Keasling. 1999. "Dual labeling with green fluorescent proteins for confocal microscopy." *IAWQ/IWA Conference on Biofilm Systems, International Association on Water Quality*, New York, NY.
67. K. D. McMahon, M. A. Dojka, N. R. Pace, J. D. Keasling, and D. Jenkins. 1999. "Microbial community structure of laboratory activated sludge performing enhanced biological phosphorus removal." *American Society for Microbiology General Meeting*. Chicago, IL.
68. E. S. Gilbert and J. D. Keasling. 2000. "Degradation of parathion by a dual-species biofilm consortium." *American Society for Microbiology General Meeting*. Los Angeles, CA.
69. A. Khlebnikov, T. Skaug and J. D. Keasling. 2000. "Elimination of all-or-none gene expression by independent expression of the arabinose transport gene." *American Society for Microbiology General Meeting*, Los Angeles, CA.
70. C. D. Smolke and J. D. Keasling. 2000. "Coordinated, differential expression of multiple genes through directed mRNA cleavage and stabilization by secondary structures." *American Society for Microbiology General Meeting*, Los Angeles, CA.
71. I. Aldor and J. D. Keasling. 2000. "Metabolic engineering of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) production in recombinant *Salmonella typhimurium*." *American Chemical Society National Meeting*, San Francisco, CA.
72. E. S. Gilbert and J. D. Keasling. 2000. "Degradation of parathion by a dual-species biofilm consortium." *American Chemical Society National Meeting*. San Francisco, CA.
73. A. Khlebnikov, T. Skaug and J. D. Keasling. 2000. "A regulatable arabinose-inducible gene expression system with consistent control in all cells of a culture." *American Chemical Society National Meeting*, San Francisco, CA.
74. E. S. Gilbert and J. D. Keasling. 2000. "Degradation of parathion by a dual-species biofilm consortium." *Biofilms 2000, American Society of Microbiology*, Big Sky, MT.

75. C. D. Smolke and J. D. Keasling. 2000. "Engineering mRNA stabilizing elements to achieve coordinated, differential expression of two genes." *FASEB Summer Conference in Post-Transcriptional Control of Gene Expression*, Copper Mountain, CO.
76. I. Aldor and J. D. Keasling. 2000. "Metabolic engineering of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) production in recombinant *Salmonella typhimurium*." *International Symposium on Biological Polyesters*, Cambridge, MA.
77. K. D. McMahon, N. R. Pace, J. D. Keasling, and D. Jenkins. 2000. "Microbial community structure of activated sludge performing enhanced biological phosphorus removal." *California Water Environment Association Annual Conference*, Sacramento, CA.
78. C. D. Smolke and J. D. Keasling. 2000. "Engineering mRNA stabilizing /destabilizing elements to achieve coordinated differential expression of two genes." *AIChE Annual Meeting*, Los Angeles, CA.
79. A. W. Walker, S. K. Tehara and J. D. Keasling. 2000. "Metabolic Engineering of Bacteria for the Environment: The Degradation of Parathion." *American Institute of Chemical Engineers*, Los Angeles, CA.
80. D.S. Reichmuth, H.W. Blanch and J. D. Keasling. 2000. "Biodesulfurization of dibenzothiophene in *Escherichia coli* is enhanced by expression of a *Vibrio harveyi* Oxidoreductase Gene." *California Catalysis Society Annual Meeting*, Richmond, CA.
81. A. W. Walker, S. K. Tehara and J. D. Keasling. 2001. "Metabolic Engineering of Bacteria for the Environment: The Degradation of Parathion and Paraoxon." *Bioengineering XII*, Sonoma, CA.
82. S.K. Tehara and J.D. Keasling. 2001. "Isolation of a Novel Phosphodiesterase for Biodegradation of Organophosphates." *American Chemical Society*, San Diego, CA.
83. D. S. Reichmuth, J. L. Hittle, H. W. Blanch, and J. D. Keasling. 2001. "Metabolic engineering of the dibenzothiophene biodesulfurization process." *Biochemical Engineering XII*, Sonoma, CA.
84. G. Y. Wang and J. D. Keasling. 2001. "Isolation and characterization of two key regulatory genes involved in isoprenoid biosynthesis of *Aspergillus nidulans*." *Twenty-First Fungal Genetics Conference*, Pacific Grove, CA.
85. N. L. Goeden, J. D. Keasling, and S. J. Muller. 2001. "Bacterial Expression of a Self-Assembling Amphiphilic Protein Polymer." *AIChE National Meeting*, Reno, NV.
86. N. L. Goeden, J. D. Keasling, and S. J. Muller. 2001. "Bacterial expression of a poly(L-leucylglutamic acid) fusion protein for use in studying structure-property relationships of disordered copolymers." *ACS National Meeting*, San Diego, CA.
87. C. D. Smolke and J. D. Keasling. 2001. "Effects of gene copy number and steady-state mRNA levels on the relative expression levels of two genes in a novel operon." *American Chemical Society National Meeting*, San Diego, CA.
88. C. D. Smolke and J. D. Keasling. 2001. "Effects of gene copy number and steady-state mRNA levels on the relative expression levels of two genes in a novel operon." *American Society for Microbiology General Meeting*, Orlando, FL.
89. V. J. J. Martin, Y. Yoshikuni, and J. D. Keasling. 2001. "A study of the *in vivo* synthesis of plant sesquiterpenes by *Escherichia coli*." *Society for Industrial Microbiology Annual Meeting*, St. Louis, Missouri.
90. K. D. McMahon, D. Jenkins, J. D. Keasling. 2001. "Polyphosphate kinase genes from activated sludge carrying out enhanced biological phosphorus removal." *Water Environment Federation 74th Annual Conference and Exposition (WEFTEC)*, Atlanta, GA.
91. K. D. McMahon, J. D. Keasling, D. Jenkins. 2001. "Polyphosphate kinase genes from activated sludge carrying out enhanced biological phosphorus removal." *International Association for Water Quality 3rd International Specialized Conference on Microorganisms in Activated Sludge and Biofilm Processes*. Rome, Italy.
92. K. D. McMahon, D. Jenkins, J. D. Keasling. 2001. "Polyphosphate kinase genes from activated sludge carrying out enhanced biological phosphorus removal." *101st General Meeting of the American Society for Microbiology*, Orlando, FL.
93. C. D. Smolke and J. D. Keasling. 2001. "Effects of gene copy number and steady-state mRNA levels on the relative expression levels of two genes in a novel operon." *Biochemical Engineering XII*, Rohnert Park, CA.

94. C. D. Smolke, B. Pflieger, and J. D. Keasling, J. D. 2001. "Rational and random design strategies for controlling heterologous protein production from novel operon systems in *E. coli*." *American Institute of Chemical Engineers Annual Meeting*, Reno, NV.
95. N. L. Goeden, J. D. Keasling, and S. J. Muller. 2002. "Microbial Production of a Self-Assembling Amphiphilic Protein Polymer." *American Chemical Society National Meeting*, Orlando, FL.
96. Brian Pflieger, Christina Smolke, and Jay Keasling. 2002. "Engineering mRNA Stability." *Annual Meeting of the Society for Industrial Microbiology*. Philadelphia, PA.
97. G. Y. Wang and J. D. Keasling. 2002. "Metabolic engineering of isoprenoid production in *Aspergillus nidulans*." *Annual Meeting of the Society for Industrial Microbiology*, Philadelphia, PA.
98. G. Y. Wang, M. H. Chai, and J. D. Keasling. 2002. "Potential use of a novel geranylgeranyl diphosphate synthase gene from *Aspergillus nidulans* in metabolic engineering of isoprenoid production." *American Society for Microbiology General Meeting*, Salt Lake City, UT.
99. G. Y. Wang, M. H. Chai, D. J. Pitera, and J. D. Keasling. 2002. "Functional characterization of genes involved in isoprenoid biosynthesis from *Aspergillus nidulans*." *102nd General Meeting of the American Society for Microbiology*, Salt Lake City, UT.
100. S.K. Tehara and J.D. Keasling. 2002. "Purification and Characterization of a Phosphodiesterase from *Delftia acidovorans*." *American Society for Microbiology*, Salt Lake City, UT.
101. V. J. J. Martin, D. Pitera, and J. D. Keasling. 2002. "Metabolic engineering of isoprenoid biosynthesis." *American Society for Microbiology General Meeting*, Salt Lake City, Utah.
102. D. Pitera, V. J. J. Martin, and J. D. Keasling. 2002. "Isoprenoid biosynthesis: Expression and engineering of the mevalonate pathway in *Escherichia coli*." *Society for Industrial Microbiology Annual Meeting*, Philadelphia, PA.
103. K. D. McMahon, D. Jenkins, J. D. Keasling. 2002. "Polyphosphate kinase from activated sludge carrying out enhanced biological phosphorus removal." *Society for Industrial Microbiology Annual Meeting*, Philadelphia, PA.
104. V. J. J. Martin, D. Pitera, S. Withers, Y. Yoshikuni, J. Newman, J., and J. D. Keasling. 2002. "Eau-de-*E. coli*: Production of flavor and fragrance terpenes in *Escherichia coli*." *Metabolic Engineering IV*, Barga, Italy.
105. V. J. J. Martin, D. Pitera, S. Withers, J. Newman, and J. D. Keasling. 2002. "Expression of the yeast mevalonate-dependent isoprenoid biochemical pathway for the production of sesquiterpenes in *Escherichia coli*." *Metabolic Engineering IV*, Barga, Italy.
106. V. J. J. Martin, D. Pitera, S. Withers, J. Newman, and J. D. Keasling. 2002. "Expression of the yeast mevalonate-dependent isoprenoid biochemical pathway for the production of sesquiterpenes in *Escherichia coli*." *Seventh Conference on the Biotechnology of Microbial Products*, Honolulu, Hawaii.
107. S. Withers, V. J. J. Martin, and J. D. Keasling. 2002. "Production of sesquiterpenes in *Escherichia coli*." *Seventh Conference on the Biotechnology of Microbial Products*, Honolulu, Hawaii.
108. Jack D. Newman and Jay D. Keasling. 2002. "Directing the Evolution of a Shunt Pathway for the Production of Propionate in *S. enterica*." *Seventh Conference on the Biotechnology of Microbial Products*. Honolulu, Hawaii.
109. N. L. Goeden-Wood, J. D. Keasling, and S. J. Muller. 2002. "Enhanced Production of Self-Assembling Amphiphilic Protein Polymer from Recombinant *Pichia pastoris*." *American Institute of Chemical Engineers National Meeting*, Indianapolis, IN
110. S.K. Tehara and J.D. Keasling. 2002. "Metabolic Engineering of Bacteria for the Degradation of Paraoxon." *American Institute of Chemical Engineers*, Indianapolis, IN.
111. Y. Yoshikuni, V. J. J. Martin, and J. D. Keasling. 2003. "Metabolic Engineering of Terpene Production in *Escherichia coli*." *American Society for Microbiology*, Salt Lake City, UT.
112. M. M. Maharbiz, W. J. Holtz, R. T. Howe, J. D. Keasling. 2003. "Microbioreactor arrays with parametric control for high-throughput experimentation." *Biochemical Engineering XIII*, Boulder, CO.
113. K. K. Reiling, Y. Yoshikuni, J. Newman, V. J. J. Martin, J. D. Keasling. 2003. "Mono and diterpene production in *Escherichia coli*: construction of flux improved geranyl and geranylgeranyl diphosphate biosynthetic pathways." *Terpnet*, Lexington, KY.

114. S. T. Withers, V. J. J. Martin, D. J. Pitera, J. D. Keasling. 2003. "Engineering of terpene synthases for improved *in vivo* production of epi-cedrol in *Escherichia coli*." *Terpnet*, Lexington, KY.
115. D. J. Pitera, V. J. J. Pitera, S. T. Withers, J. D. Newman, J. D. Keasling. 2003. "Production of terpenes in *Escherichia coli* via an engineered mevalonate pathway." *Terpnet*, Lexington, KY.
116. W. D. Marner II, N. L. Goeden-Wood, J. D. Keasling, and S. J. Muller. 2003. "Expression and Characterization of self-Assembling peptides with varied molecular weights." *ACS National Meeting*, New Orleans, LA.
117. H. Murata, J. D. Keasling, S. J. Muller. 2003. "Preparation and characterization of nanoscale-patterned mixed-SAMs." *ACS National Meeting*, New Orleans, LA.
118. C. Gong, J. D. Keasling, H. Nitsche. 2003. "Characterization of *Deinococcus radiodurans* for actinide bioprecipitation." *ACS National Meeting*, New Orleans, LA.
119. C. Gong, J. D. Keasling, H. Nitsche. 2003. "Characterization of *Deinococcus radiodurans* for actinide bioprecipitation." *AICHE National Meeting*, San Francisco, CA.
120. D. Laidlaw and J. D. Keasling. 2003. "Targeted Illegitimate Recombination in *A. nidulans*." *Twenty-second Fungal Genetics Conference at Asilomar*. Monterey CA.
121. D. Lubertozzi and J. D. Keasling. 2003. "Analysis of heterologous expression from *Aspergillus nidulans* *gpdA* and *alcA* promoters." *Twenty-second Fungal Genetics Conference at Asilomar*. Monterey CA.
122. J. H. Marshall, H. W. Blanch, and J. D. Keasling. 2003. "Metabolic modeling of precursor flow to polyketides in *Aspergillus nidulans*." *Twenty-second Fungal Genetics Conference at Asilomar*. Monterey CA.
123. E. M. Paradise, G. Y. Wang, and J. D. Keasling. 2003. "Metabolic engineering of *Saccharomyces cerevisiae* for the production of isoprenoids." *ACS National Meeting*, New Orleans, LA.
124. K. Wang, S. J. Muller, and J. D. Keasling. 2003. "Role of hydrophobic amino acid residues in self-assembly of artificial peptides." *AICHE National Meeting*, San Francisco, CA.
125. J. H. Marshall, H. W. Blanch, and J. D. Keasling. 2003. "Characterization of acetyl coenzyme A flux to polyketides in *Aspergillus nidulans* mutant strains." *AICHE National Meeting*, San Francisco, CA.
126. S. T. Withers, V. J. J. Martin, D. J. Pitera, and J. D. Keasling. 2003. "The engineering of terpene synthases for production in *Escherichia coli*." *AICHE National Meeting*, San Francisco, CA.
127. D. J. Pitera, V. J. J. Martin, S. T. Withers, J. D. Newman, and J. D. Keasling. 2003. "Production of terpenes in *Escherichia coli* via an engineered mevalonate pathway." *AICHE National Meeting*, San Francisco, CA.
128. B. M. T. Da Costa, J. D. Keasling, and K. Cornish. 2003. "The role of metal cofactors in the regulation of natural rubber production in *Hevea brasiliensis* and *Parthenium argentatum*." *AICHE National Meeting*, San Francisco, CA.
129. B. F. Pfleger and J. D. Keasling. 2003. "Shuffling of intercistronic regions: a method for optimizing messenger RNA stability in *Escherichia coli*." *AICHE National Meeting*, San Francisco, CA.
130. W. D. Marner II, N. L. Goeden-Wood, J. D. Keasling, and S. J. Muller 2003. "Biological synthesis and characterization of novel, self-assembling protein polymers." *AICHE National Meeting*, San Francisco, CA.
131. C. M. S. Gong, H. Nitsche, and J. D. Keasling. 2003. "Characterization of *Deinococcus radiodurans* for actinide precipitation." *AICHE National Meeting*, San Francisco, CA.
132. D. Lubertozzi and J. D. Keasling. 2003. "Analysis of heterologous expression from *Aspergillus nidulans* *gpdA* and *alcA* promoters." *AICHE National Meeting*, San Francisco, CA.
133. E. M. Paradise, S. T. Withers, J. Kirby, G. Y. Wang, and J. D. Keasling. 2003. "Metabolic engineering of *Saccharomyces cerevisiae* for the production of isoprenoids." *AICHE National Meeting*, San Francisco, CA.
134. D. Lubertozzi and J. D. Keasling. 2003. "Analysis of heterologous expression from *Aspergillus nidulans* *gpdA* and *alcA* promoters." *22nd Fungal Genetics Conference*, Asilomar, CA. (Poster)
135. W. J. Holtz, A. S. Shaikh, J. D. Keasling, R. T. Howe. 2003. "In Vitro Complex Silica Structure Formation Using a Microfabricated Artificial Silica Deposition Vesicle." *North American Diatom Symposium*, FL. (Poster)

136. W.D. Marner II, N.L. Goeden-Wood, S.J. Muller, and J.D. Keasling. 2003. "Effect of molecular weight on the expression and characterization of a self-assembling peptide." *American Chemical Society, Annual Meeting*. (Poster)
137. K. Wang, J. D. Keasling and S. J. Muller. 2004. "Sequence of Hydrophobic Amino Acid Residues Affects Self-assembly of Amphiphilic Artificial Peptides." *Berkeley Microbiology Symposium*, Berkeley, CA.
138. M. Mattozzi, S. Tehara and J. D. Keasling. 2004. "Complete degradation of paraoxon by *Pseudomonas putida*." *Berkeley Microbiology Symposium*, Berkeley, CA. (Poster)
139. A. M. Redding, A. Mukhopadhyay, V. Martin, and J. D. Keasling. 2004. "Proteomics of Oxygen Stress Response in *Desulfovibrio vulgaris* (Hildenborough)." *ASM IMAGE (Integrating Metabolism and Genome) Conference*, Montreal, Quebec.
140. L. Fontaine-Bodin, D. M. Wolf, A. P. Arkin and J. D. Keasling. 2004. "Temporal Analysis of the Stress Response Commitment Genes in *Bacillus subtilis*: From a Diversity Point of View." *Genome 2004*. Cambridge, United Kingdom.
141. S. Yilmaz, D. Jenkins, and J.D. Keasling. 2004. "Bioprospecting for Novel PHA Synthases in a Mixed Culture Performing Enhanced Biological Phosphorus Removal." *European Symposium on Environmental Biotechnology*, Oostende, Belgium.
142. K. Wang, J. D. Keasling and S. J. Muller. 2004. "Sequence of Hydrophobic Amino Acid Residues Affects Self-assembly of Amphiphilic Artificial Peptides." *Berkeley Nanotechnology Forum*, Berkeley, CA.
143. S. Yilmaz, D. Jenkins, and J.D. Keasling. 2004. "Retrieval of a Novel PHA Synthase from Activated Sludge Performing Enhanced Biological Phosphorus Removal." *104th ASM General Meeting*, New Orleans, LA. (Poster)
144. M. Mattozzi, S. Tehara and J. D. Keasling. 2004. "Complete degradation of paraoxon by *Pseudomonas putida*." *American Society for Microbiology General Meeting*, New Orleans, LA. (Poster)
145. L. Fontaine-Bodin, D. M. Wolf, A. P. Arkin and J. D. Keasling. 2004. "Temporal Analysis of the Stress Response Commitment Genes in *Bacillus subtilis*: From a Diversity Point of View." *ASM 104th General Meeting*, New Orleans, LA.
146. D.J. Pitera, J.D. Newman, and J.D. Keasling. 2004. "Optimizing a Heterologous Mevalonate Pathway for the Production of Terpenoids in *Escherichia coli*." *American Society for Microbiology 104th General Meeting*, New Orleans, LA. (Poster)
147. E.M. Paradise, J. Kirby, S.T. Withers, J.D. Keasling. 2004. "Metabolic Engineering of *Saccharomyces cerevisiae* for the increased production of isoprenoids." *Yeast Genetics and Molecular Biology Meeting*. (Poster)
148. D.J. Pitera, and J.D. Keasling. 2004. "Metabolic Engineering of Microbes for Production of Terpenoid Drugs." *Metabolic Engineering V: Genome to Product*. Olympic Valley, CA. (Poster)
149. K. Wang, J. D. Keasling and S. J. Muller. 2004. "Sequence of Hydrophobic Amino Acid Residues Affects Self-assembly of Amphiphilic Artificial Peptides." *Society of Biological Engineering Conference on Bioengineering and Nanotechnology*. Singapore.
150. J. Kirby, D. W. Romanini, and J. D. Keasling. 2004. "Production of isoprenoids in *Saccharomyces cerevisiae*." *2004 Yeast Genetics and Molecular Biology Meeting*, Seattle, WA. (Poster)
151. K. Wang, J. D. Keasling and S. J. Muller. 2004. "Sequence of Hydrophobic Amino Acid Residues Affects Self-assembly of Amphiphilic Artificial Peptides." *Society of Biological Engineering Conference on Bioengineering and Nanotechnology*, Singapore.
152. A. Shaikh and J. D. Keasling. 2004. "Towards Production of Recombinant Silaffins." *American Institute of Chemical Engineering, Annual Meeting*, Austin, TX.
153. D.J. Pitera, J.D. Newman, and J.D. Keasling. 2004. "Optimizing a Heterologous Mevalonate Pathway for the Production of Terpenoids in *Escherichia coli*." *American Institute of Chemical Engineering, Annual Meeting 2004*, Austin TX. (Poster)
154. W.D. Marner II, N.L. Goeden-Wood, S.J. Muller, and J.D. Keasling. 2004. "Self-assembled Protein Polymers for the development of Nanostructured Biomaterials." *American Institute of Chemical Engineers, Annual Meeting*, Austin, TX. (Poster)
155. B.M.T. da Costa, J.D. Keasling, and K. Cornish. 2005. "Magnesium regulation of in vitro rubber synthesis by *Hevea brasiliensis* and *Parthenium argentatum*," *2005 ACS Rubber Division Meeting*, San Antonio, TX.

156. K. Newman, D. Ro, R. Eachus, K. Ho, D. Ng, J. C. Detter, P. M. Richardson, E. A. Lindquist, J. Keasling. 2005. "Elucidating the Artemisinin Biosynthetic Pathway." *TERPNET 2005*, Wageningen, The Netherlands (Poster).
157. D.J. Pitera, J.D. Newman, and J.D. Keasling. 2005. "Optimizing a Heterologous Mevalonate Pathway for the Production of Terpenoids in *Escherichia coli*." *Terpnet 2005*. Wageningen, The Netherlands. (Poster)
158. E.M. Paradise, J. Kirby, S.T. Withers, and J.D. Keasling. "Metabolic Engineering of *Saccharomyces cerevisiae* for the increased production of isoprenoids." *Terpnet Conference 2005*, Wageningen, The Netherlands (Poster).
159. M. Mattozzi, S. Tehara and J. D. Keasling. 2005. "Complete degradation of paraoxon by *Pseudomonas putida*." *Berkeley Microbiology Symposium*, Berkeley, CA.
160. E. E. Baidoo, M. Witt, C. Neusüß, M. Pelzing, S. Villa, G. Kruppa, F. Pingitore, J. A. Leary, and J. D. Keasling. 2005. "High Resolution Mass Spectrometry in combination with Capillary Electrophoresis as a tool for Metabolome Research" *2005 American Society for Mass Spectrometry conference (ASMS)*, San Antonio, TX. (Poster)
161. M. d. Mattozzi and J. D. Keasling. 2005."Complete degradation of the pesticide paraoxon by genetically engineered *Pseudomonas putida*." *International Union of Microbiological Societies*, San Francisco, CA (poster)
162. L. Fontaine-Bodin, A. Mukhopadhyay, D. M. Wolf, A. P. Arkin, and J. D. Keasling. 2005. "Temporal Analysis of the Stress Response Commitment Genes in *Bacillus subtilis*: From a Diversity Point of View." *IUMS*, San Francisco, CA.
163. S. Yilmaz, D. Jenkins, and J.D. Keasling. 2005. "Identification of a Novel PHA Synthase from a Performing Enhanced Biological Phosphorus Removal." *Gordon Research Conference on Applied and Environmental Microbiology*, New London, CT.
164. S. Yilmaz, D. Jenkins, and J.D. Keasling. 2005. "Identification of a Novel PHA Synthase from a Performing Enhanced Biological Phosphorus Removal". *4th Activated Sludge Population Dynamics Specialist Conference*, Gold Coast, Australia. (Poster)
165. D. Lubertozzi and J.D. Keasling. 2005. "Developing *Aspergillus nidulans* as a Host for Heterologous Expression." *Society for Industrial Microbiology Annual Meeting*, Chicago, IL. (Poster)
166. S. K. Lee and Jay D. Keasling. 2005. "A propionate-inducible expression system for *E. coli*." *Society for Industrial Microbiologists Annual Meeting*, Chicago, IL. (Poster)
167. Y. Shiba, E. M. Paradise, J. Kirby, and J. D. Keasling. 2005. "Metabolic engineering of *Saccharomyces cerevisiae* for high-level production of isoprenoids." *SIMS Annual Meeting 2005*, Chicago, IL. (Poster)
168. M. d. Mattozzi and J. D. Keasling. 2005. "Complete degradation of the pesticide paraoxon by genetically engineered *Pseudomonas putida*." *Society for Industrial Microbiology*, Chicago, IL. (poster)
169. M. d. Mattozzi and J. D. Keasling. 2005. "Mineralization of the pesticide paraoxon by genetically engineered *Pseudomonas putida*." *Society for Industrial Microbiology*, Chicago, IL.
170. B.M.T. da Costa, J.D. Keasling, and K. Cornish. 2005. "Magnesium regulation of in vitro rubber synthesis by *Parthenium argentatum*." *2005 Annual Meeting AAIC (Association for the Advancement of Industrial Crops)*, *International Conference on Industrial Crops and Rural Development*, Murcia, Spain.
171. D. Ro, and J.D. Keasling. 2006. "A Comparative Genomics of Compositae - Identification of an Essential Gene for Artemisinin Biosynthesis." *Plant & Animal Genome XIV Mtg.*, San Diego, CA.
172. M. Chang, and J.D. Keasling. 2006. "Engineering *E. coli* to produce anti-malarial drugs." *Gordon Research Conference*, Ventura, CA.
173. J. Goler, and J.D. Keasling. 2006. "Towards a Bacterial Internet: Addressable cell-cell communication." *Institute of Biological Engineering Conference*, Tucson, Arizona.
174. Y. Yoshikuni, and J.D. Keasling. 2006. "Designed divergent evolution of enzyme function." *Japan Society for Bioscience Biotechnology and Agriculture conference*, Kyoto, Japan.
175. Y. Tang, A. Mukhopadhyay, A. Meadows, R. Huang, T. Hazen, and J.D. Keasling. 2006. "Investigation of the Central Metabolic Pathways of *Desulfovibrio vulgaris* Hildenborough Using a Minimal Medium with ¹³C Labeled Lactate" *American Society for Microbiology Meeting*, Orlando, Florida.

176. A. Mukhopadhyay, Z. He, E. Alm, A. Arkin, E. Baidoo, S. Borglin, W. Chen, T. Hazen, Q. He, H-Y. Holman, K. Huang, D. Joyner, M. Keller, P. Oeller, A. Redding, J. Sun, J. Wall, J. Wei, H-C. Yen, J. Zhou, and J. Keasling. 2006. "Salt stress in *Desulfovibrio vulgaris* Hildenborough: An integrated genomics approach. *American Society for Microbiology Meeting*, Orlando, Florida.
177. A. Redding, A. Mukhopadhyay, D. Joyner, T. Hazen, and J. Keasling. 2006 "Quantitative Proteomic Analysis of Nitrate Stress in *Desulfovibrio vulgaris*." *American Society for Microbiology Meeting*, Orlando, Florida.
178. E. E. K. Baidoo, F. Pingitore, P. I. Benke, A. Mukhopadhyay, and J. D. Keasling. 2006. "Detection and Identification of Metabolites in *Desulfovibrio vulgaris* Hildenborough by Capillary Electrophoresis-Electrospray Ionization-Time of Flight-Mass Spectrometry." *American Society for Microbiology Meeting*, Orlando, Florida.
179. M. Mattozzi, J.R. Su, and J.D. Keasling. 2006. "Mineralization of paraoxon and use as a sole C and P source by a rationally designed catabolism in *Pseudomonas putida*". *Berkeley Microbiology Symposium*, Berkeley, California.
180. C. J. Petzold, L. Kizer, W. Shui, W. Marner, R. Dahl, D. Garcia, and J. D. Keasling. 2006. "A Quantitative Proteomic Study of *Escherichia coli* Expressing an Exogenous Pathway for Amorphadiene Production", *54th Annual American Society for Mass Spectrometry Conference on Mass Spectrometry and Allied Topics*, Seattle, WA.
181. Z. Li, J. D. Keasling and K. K. Niyogi. 2006. "Overlapping photoprotective function of vitamin E and carotenoid in *Chlamydomonas*." *12th International conference on the cell and molecular biology of Chlamydomonas*. Portland, Oregon.
182. F. Pingitore, Y. Tang, G. Kruppa, A. Mukhopadhyay and J. D. Keasling. 2006. "Investigation of Metabolic Pathways in *Desulfovibrio v.* by ESI FT-ICR" *54th ASMS Conference on Mass Spectrometry*, Seattle, WA.
183. Y. Yoshikuni, and J.D. Keasling. 2006. "Designed divergent evolution of enzyme function." *Society of Industrial Microbiology meeting*, Baltimore, MD.
184. S.K. Lee and J. D. Keasling. 2006. "Tight, regulatable control of expression systems having both P_BAD and lac promoters in *Escherichia coli*." SIMS, Baltimore, MD.
185. M. Mattozzi, and J. D. Keasling. 2006. "Mineralization of paraoxon and use as a sole C and P source by a rationally designed catabolism in *Pseudomonas putida*." *Federation of European Microbiological Societies*, Madrid, Spain.
186. Y. Yoshikuni, and J.D. Keasling 2006. "Designed divergent evolution of enzyme function." *American Chemical Society meeting*, San Francisco, CA.
187. W. Marner, and J.D. Keasling 2006. "Usefulness of RNase III Cleavage Sites for Tuning Relative Gene Expression." *American Chemical Society meeting*, San Francisco, CA.
188. Y. Kang, and J.D. Keasling. 2006. "Increasing mevalonate production by engineering the metabolism of *Escherichia coli*." *14th Annual International Meeting on Microbial Genomics*, Lake Arrowhead, CA.
189. J. Kizer, and J.D. Keasling. 2006. "Assessing the Impact of a Synthetic Biochemical Pathway on Host Metabolism: A Systems Biology Approach." *14th Annual International Meeting on Microbial Genomics*, Lake Arrowhead, CA.
190. A. M. Redding, A. Mukhopadhyay, C. J. Petzold, A. Gilman, D. Joyner, T. C. Hazen, and J. D. Keasling. "Study of Stress Response in *Desulfovibrio vulgaris* Hildenborough: A Proteomics Approach" *7th Siena Meeting, From Genome to Proteome: Back to the Future*. Siena, Italy.
191. Y. Kang and J. D. Keasling. 2006. "Increasing mevalonate production by engineering the metabolism of *Escherichia coli*." *Lake Arrowhead Conference*, Lake Arrowhead, CA, September 2006.
192. L. Kizer and J. D. Keasling. 2006. "Assessing the Impact of a Synthetic Biochemical Pathway on Host Metabolism: A Systems Biology Approach." *Lake Arrowhead Conference*, Lake Arrowhead, CA, September 2006.
193. Y. Tang and J. D. Keasling. 2006. "Flux analysis of anaerobic carbon metabolic pathways in *Shewanella oneidensis* MR-1 using isotopic metabolite labeling." *American Chemical Society 232nd National Meeting*, San Francisco, CA.
194. R. Dahl, C. Kang, and J. D. Keasling. 2006. "Transcriptomic studies of an amorphadiene producing *E. coli* strain in an *ackA/pta/poxB* deletion background." *AICHE annual conference*, San Francisco, CA.

195. L. Kizer and J. D. Keasling. 2006. "Transcriptional response to Heterologous Pathway Expression in *E. coli*." *AIChE annual conference*, San Francisco, CA
196. W. Marner, and J. Keasling. 2006. "Self-Assembled Protein Polymers for the Development of Nanostructured Biomaterials" (presentation) and "Usefulness of RNase III Cleavage Sites for Tuning Relative Gene Expression." *AIChE annual conference*, San Francisco, CA.
197. J. A. Dietrich, Y. Yoshikuni, K. Fisher, and J. D. Keasling. 2007. "Production of Artemisinic-11,12-Epoxy by Engineered Cytochrome P450 BM3." *SBE Conference*, San Diego, CA.
198. W. Marner and J. Keasling. 2007. "Self-Assembled Protein Polymers for the Development of Nanostructured Biomaterials" *ICBE Conference*, San Diego, CA.
199. Y. Yoshikuni and J.D. Keasling. 2007. "Designed Divergent Evolution of Enzyme Function" *SBE Conference*, San Diego, CA.
200. T. C. Hazen, D. Elias, H. Y. Holman, J. D. Keasling, A. Mukhopadhyay, S. Chhabra, T. Torok, J. Wall and M. D. Biggin. 2007. "Protein Complex Analysis Project (PCAP): High Throughput Identification and Structural Characterization of Multi-Protein Complexes During Stress Response in *Desulfovibrio vulgaris*: Microbiology Subproject" *Joint Genomics: GTL Awardee Workshop V and Metabolic Engineering and USDA-DOE Plant Feedstock Genomics for Bioenergy Awardee Workshop*, Washington, DC..
201. S.R. Chhabra, G. Butland, D. Elias, A. Mukhopadhyay, J.M. Chandonia, J. Wall and J. D. Keasling. 2007. "Protein Complex Analysis Project (PCAP): High Throughput Strategies For Tagged-Strain Generation In *Desulfovibrio vulgaris*." *Joint Genomics: GTL Awardee Workshop V and Metabolic Engineering and USDA-DOE Plant Feedstock Genomics for Bioenergy Awardee Workshop*, Washington, DC., Feb. 2007.
202. Y. Tang, P. S. Dehal, A. Deutschbauer, H. Sun, A. P. Arkin, and J.D. Keasling. 2007. "Metabolic Flux Analysis of Evolutionary, Genetic and Environmental Robustness in *Shewanella oneidensis* MR-1 Central Carbon Metabolism." *American Society of Microbiology Annual Meeting*. Toronto, Canada.
203. S. R. Chhabra, A. Mukhopadhyay, G. Zane, A. Zhou, M. P. Joachimiak, C. Hemme, J. Zhou, J. Wall, T. Hazen, A. Arkin and J. D. Keasling. 2007. "Functional characterization of the *Desulfovibrio vulgaris* Hildenborough megaplasmid" *American Society for Microbiology, 107th General Meeting*, Toronto, Canada.
204. W. Marner, and J. D. Keasling. 2007. "Self-Assembled Protein Polymers for the Development of Nanostructured Biomaterials" *ASM General Meeting*, Toronto, ON.
205. F. Pingitore, P. Benke, E. Baidoo, A. Mukhopadhyay F. Nowroozi and J. D. Keasling. 2007. "High Resolution Mass Spectrometry in stress response for metabolomics research." *55th Annual American Society for Mass Spectrometry Conference on Mass Spectrometry and Allied Topics*, Indianapolis, IN.
206. S. Villa, P. Benke, E. E. Baidoo, C. J. Petzold, A. Mukhopadhyay, J. A. Leary, and J. D. Keasling 2007. "Analysis of Tricarboxylic Acid Cycle Intermediates from *Shewanella Oneidensis* MR-1 using Capillary Electrophoresis Time of Flight Mass Spectrometry." *55th Annual American Society for Mass Spectrometry Conference on Mass Spectrometry and Allied Topics*, Indianapolis, IN.
207. C. J. Petzold, L. Kizer, R. Dahl, F. Nowroozi, D. Pitera, W. Shui, D. Garcia, and J. D. Keasling 2007. "An Integrated Systems Biology Study of Factors Influencing Amorphadiene Production from Metabolically Engineered *Escherichia coli*." *55th Annual American Society for Mass Spectrometry Conference on Mass Spectrometry and Allied Topics*, Indianapolis, IN.
208. A. Mukhopadhyay, A. M. Redding, M. Joachimiak, A. P. Arkin, S. Borglin, P. Dehal, R. Chakraborty, J. T. Geller, T. C. Hazen, Q. He, D. C. Joyner, J. D. Wall, Z. Yang, J. Zhou, and J. D. Keasling. 2007. "Comparison of *Desulfovibrio vulgaris* Hildenborough response to microaerobic and aerobic exposure." *American Society for Microbiology*, Toronto, ON.
209. E. E. Baidoo, P. I. Benke, S. Villa, A. Mukhopadhyay, and J. D. Keasling. 2007. "Study of selected amino acid biosynthetic pathways in the sulfate reducing bacterium *Desulfovibrio vulgaris* Hildenborough." *American Society for Microbiology*, Toronto, ON.
210. Y. J. Tang, D. Chen, J. Chu, M. Ashcroft, C. Larabell, J. D. Keasling, and F. F. Chen. 2007. "Charge-associated effects of fullerene derivatives on microbial structural integrity and central metabolism." *American Society of Microbiology Annual Meeting*, Toronto, Canada.

211. S. R. Chhabra, A. Mukhopadhyay, G. Zane, A. Zhou, M.P. Joachimiak, C. Hemme, J. Zhou, J. Wall, T. Hazen, A. Arkin and J. D. Keasling. 2007. "Functional characterization of the *Desulfovibrio vulgaris* Hildenborough megaplasmid" *American Society for Microbiology, 107th General Meeting*, Toronto, Canada.
212. D.A. Elias, G.D. Butland, S.R. Chhabra, GM Zane, IB Hilton, TC Hazen, M.D. Biggin, J. D. Keasling and J.D. Wall. 2007. "High-throughput identification of multi-protein complexes via TAP tagging in *Desulfovibrio vulgaris*." *American Society for Microbiology, 107th General Meeting*, Toronto, Canada.
213. A. S. Shaikh, C. J. Petzold, and J. D. Keasling. 2007. "Towards production of recombinant silica-precipitating peptides by understanding biosilicification in diatoms". *American Society for Microbiology, 107th General Meeting*, Toronto, Canada.
214. A. M. Redding, A. Mukhopadhyay, S. Gaucher, M. Joachimiak, D. C. Joyner, J. Zhou, T. C. Hazen, and J. D. Keasling. 2007. "An Investigation of Predicted Pathways in *Desulfovibrio vulgaris* Hildenborough." *55th Annual American Society for Mass Spectrometry Conference on Mass Spectrometry and Allied Topics*, Indianapolis, IN.
215. Y.E. Tang, E. Paradise, S. Rodriguez, M. Ouellet, S. Myers, H. Burd, R. Chan, and J.D. Keasling. 2007. "Targeting pathways for genetic manipulations in *Saccharomyces cerevisiae* for improving amorphadiene/artemisinic acid production " *Society of Industrial Microbiology Annual Meeting*, Denver, CO.
216. L. Prach, J. Kirby, J. D. Keasling, and T. Alber. 2007. "Structural and functional studies of a novel lipid virulence factor in *Mycobacterium tuberculosis*." *Gordon Research Conference on Tuberculosis Drug Development. Magdalen College*, Oxford, United Kingdom.
217. J. A. Goler, J. C. Anderson, J. A. Dueber, and J. D. Keasling. 2007. "BBQuick and BioBricks Extreme." *3rd International Conference on Synthetic Biology*, Zurich Switzerland.
218. S. Chhabra, G. Butland, Dwayne Elias, V. Fok, B. Gold, J. Jin, A. Mukhopadhyay, R. Prathapam, W. Yang, J.-M. Chandonia, J. Wall, T. Hazen, and J. D. Keasling. 2008. "High throughput strategies For tagged-strain generation in *Desulfovibrio vulgaris*." *Annual Genomics:GTL Grantee workshop*, Bethesda, MD, February 10-13, 2008.
219. M. Mattozzi, and J.D. Keasling. 2008. "Mineralization of p-nitrophenol by *E. coli* by a rationally redesigned catabolic pathway." *American Society for Microbiology annual meeting*, Boston, MA.
220. M. N. Price, Y. J. Tang, P. I. Benke, E. E., Baidoo, S. R. Chhabra, V. Fok, S. Myers, C. J. Petzold, P. S. Dehal, A. Mukhopadhyay, G. M. Zane, J. D. Wall, J. D. Keasling and A. P. Arkin 2008. "Identification of amino acid synthesis pathways in *Desulfovibrio vulgaris* by isotopic labeling, metabolite analysis, and genome sequence analysis." *American Society for Microbiology annual meeting*, Boston, MA.
221. H. Chou and J. D. Keasling. 2008. "Biocatalysis of Biomass into Bioenergy." *Gordon Research Conference (GRC) - Graduate Research Seminar (GRS) - Photosynthesis and Biofuels*, South Hadley, MA, June 21-27, 2008.
222. M. Mattozzi and J. D. Keasling. 2008. "Mineralization of p-nitrophenol by *E. coli* by a rationally redesigned catabolic pathway." *Society of Industrial Microbiology (SIM) annual conference*, San Diego, CA, August 10-14, 2008.
223. T. S. Lee, A. Juminaga, S. K. Lee, and J. D. Keasling. 2008. "Studies for the production of benzylisoquinoline alkaloids (BIA) in metabolically engineered *Escherichia coli* strains. *Society of Industrial Microbiology (SIM) annual conference*, San Diego, CA.
224. Josh Gilmore and J. D. Keasling. 2008. "Site-specific, orthogonal phage recombinases: new functions for old tools." *SB4.0*, Hong Kong.
225. F. Nowroozi, E. Baidoo, D. Garcia, and J. D. Keasling. 2009. "Production of Isoprenoids in Bacterial Host." *DOE Genomics:GTL. Systems Biology for Energy and Environment. Joint Meeting Genomics:GTL Awardee Workshop VII*, Bethesda, MD.
226. A. E. McKee, J. Haliburton, V. Fok, M. Ouellette, J. D. Keasling, & S. Chhabra. 2009. "Harnessing genomic recombination to improve microbial metabolic phenotypes." 2009. *DOE Genomics:GTL. Systems Biology for Energy and Environment. Joint Meeting Genomics:GTL Awardee Workshop VII*, Bethesda, MD.
227. R. Dahl, H. Chou, B. Rutherford, A. Mukhopadhyay, and J. D. Keasling. 2009. "Cell wide studies of isoprenyl diphosphate and isopentenol toxicity in *E. coli*." *DOE Genomics:GTL. Systems*

- Biology for Energy and Environment. Joint Meeting Genomics:GTL Awardee Workshop VII*, Bethesda, MD.
228. H. H. Chou and J. D. Keasling. 2009. "A de novo synthetic metabolic pathway for producing 5C alcohols." *DOE Genomics:GTL. Systems Biology for Energy and Environment. Joint Meeting Genomics:GTL Awardee Workshop VII*, Bethesda, MD.
229. E. J. Steen, R. Chan, N. Prasad, C. J. Petzold, A. Redding, M. Ouellet, and J. D. Keasling. 2009. "Engineering *Saccharomyces cerevisiae* for the production of n-butanol." *DOE Genomics:GTL. Systems Biology for Energy and Environment. Joint Meeting Genomics:GTL Awardee Workshop VII*, Bethesda, MD.
230. R. Dahl, A. Mukhopadhyay, B. Rutherford, H. Chou, and J. D. Keasling. 2009. "Transcriptional response to biofuel toxicity in *E. coli*." *Keystone Symposia: The Future of Biofuels*.
231. E. J. Steen, R. Chan, N. Prasad, S. Myers, A. Redding, C. Petzold, M. Ouellet, and J. D. Keasling. 2009. "Metabolic engineering of *S. cerevisiae* for production of n-butanol," *SIM 31st Symposium on Biotechnology for Fuels and Chemicals*, San Francisco, CA.
232. M.J. Dunlop, M. Hadi, P. Adams, J. D. Keasling, and A. Mukhopadhyay. 2009. "Role of Efflux Pumps in *E. coli* Solvent Tolerance" *SIM Conference*, San Francisco, CA.
233. J. A. Dietrich, D. L. Shih, A. Chan, and J. D. Keasling. 2009. "Design of transcription factor-based in vivo biosensors for improved butanol production in *E. coli*." *SIM 31st Symposium on Biotechnology for Fuels and Chemicals*, San Francisco, CA.
234. P. Peralta-Yahya and J. D. Keasling. 2009. "Microbial production of isoprenoid based biofuels." *31st Symposium on Biotechnology for Fuels and Chemicals*, San Francisco, CA.
235. E.-B. Goh, J. D. Keasling, and H. R. Beller. 2009. "Whole-genome transcriptional analysis of the alkene-producing bacterium *Micrococcus luteus*." *109th General Meeting of the American Society for Microbiology*, Philadelphia, PA.
236. C. J. Joshua, P. I. Benke and J. D. Keasling. 2009. "Simultaneous utilization of glucose and xylose by *Sulfolobus acidocaldarius* as exclusive sources of carbon and energy." *American Society for Microbiology*, Philadelphia, PA, CA, May 17-21, 2009.
237. M.J. Dunlop, M. Hadi, J. D. Keasling, and A. Mukhopadhyay. 2009. "Using Efflux Pumps to Improve Biofuel Production." *Gordon Research Conference, Mechanisms of Membrane Transport*, Waterville, ME.
238. P. Peralta-Yahya and J. D. Keasling. 2009. "A microbial platform for the combinatorial production of oxidized terpenes." *Gordon Research Conference: Plant Metabolic Engineering*, Waterville, NH.
239. J. Kirby, F. Nowroozi, S. T. Withers, J. G. Park, M. Nishimoto, D. Behrendt, E. J. Garcia Rutledge, J. L. Fortman, H. E. Johnson, J. V. Anderson, and J. D. Keasling. 2009. "An Exploration of Diterpene Biosynthesis in the Euphorbiaceae." *American Society of Plant Biologists*, Honolulu, HI.
240. C. J. Joshua, P. I. Benke and J. D. Keasling. 2009. "Simultaneous Utilization of Glucose and Xylose by *Sulfolobus acidocaldarius* as Exclusive Sources of Carbon and Energy." *Gordon Research conference*, Waterville, NH.
241. L. Prach, J. Kirby, R. Warren, P. van Helden, J. Keasling and T. Alber. 2009. "Diterpene Production in Mycobacterium." *Gordon Research Conference on Tuberculosis Drug Development*, Magdalen College, Oxford, United Kingdom.
242. J. A. Dietrich and J. D. Keasling. 2009. "Design of transcription factor-based in vivo biosensors for improved butanol production in *E. coli*." *ACS National Meeting*, Washington D.C.
243. J. Gilmore and J. D. Keasling. 2009. "Engineered Support Systems for Biofuel Producing Organisms." *Society for Industrial Microbiology*, Toronto, Ontario, CA.
244. L. Prach, J. Kirby, R. Warren, P. van Helden, J.D. Keasling, and T. Alber. 2009. "Diterpene production in *M. tuberculosis*." *Keystone Symposium on Overcoming the TB and HIV Crisis*, Arusha, Tanzania.
245. J.M. Gilmore, A. Lee, R. Lam, B. Wong, J.D. Keasling. 2009. "Determining the Orthogonality of Site Selective Recombinases." *National Academies Keck Futures Initiative*, Irvine, CA.
246. N.J. Hillson, J.W. Thorne, M.Z. Hadi, and J.D. Keasling. 2010. "Towards Automated-assembly of Biological Parts." *Genomic Sciences (GTL) Workshop*, Arlington, VA.

247. T. S. Lee, R. Krupa, A. Hajimorad, N. Prasad, S. K. Lee, J.D. Keasling. 2010. "Biobrick vectors and datasheets; a synthetic biology platform for metabolic engineering." *DOE Genomics:GtL Workshop*, Crystal City, Virginia.
248. E.B. Goh, J.D. Keasling, and H. R. Beller. 2010. "Identification of genes essential to long-chain alkene biosynthesis in *Micrococcus luteus*." *DOE Genomics:GtL Workshop*, Crystal City, Virginia.
249. E. J. Steen, Y. Kang, G. Bokinsky, M. Ouellet, H. Burd, H. Szmids, H. Beller, N. Hilson, J. Thorne, J. Keasling. 2010. "Engineering *E. coli* for production of biodiesel." *DOE GTL meeting*. Crystal City, VA.
250. N. J. Hillson and J. D. Keasling. 2010. "Integration of BioCAD tools, Parts Registries, and Automated-assembly." *Genomic Sciences (GTL) Workshop*, Feb. 9, 2010, Arlington, VA.
251. E. J. Steen and J. D. Keasling. "Engineering *E. coli* for production of biodiesel." *IBE meeting*. Cambridge, MA.
252. E. J. Steen, Y. Kang, G. Bokinsky, M. Ouellet, H. Burd, H. Szmids, H. Beller, N. Hilson, J. Thorne, and J. D. Keasling. 2010. "Engineering *E. coli* for production of biodiesel." *ACS National Meeting*. San Francisco, CA.
253. J.L. Fortman, E. Baidoo, V. Fok, L. Katz and J. D Keasling. 2010. "Production of Diacids by an Engineered Strain of *E. coli*." *ACS National Meeting*. San Francisco, CA.
254. J. A Dietrich, D. L Shis, and J. D Keasling. 2010. "Design and characterization of a butanol responsive, transcription factor-based biosensor." *American Chemical Society National Meeting*. San Francisco, CA.
255. T. S. Lee, R. Krupa, A. Hajimorad, N. Prasad, S. K. Lee, and J. D. Keasling. 2010. "Biobrick vectors and datasheets; a synthetic biology platform for metabolic engineering." *American Chemical Society National Meeting*. San Francisco, CA.
256. T. S. Lee, R. Chan, and J. D. Keasling. 2010. "Metabolic engineering of mevalonate pathway." *American Chemical Society National Meeting*. San Francisco, CA.
257. J. M. Carothers, J. A. Goler, D. Juminaga, and J. D. Keasling. 2010. "Designing RNA-based genetic regulators to control heterologous pathway expression in *E. coli*." *Society for Industrial Microbiology Annual Meeting*, San Francisco, CA.
258. J. M. Carothers, J. A. Goler, D. Juminaga, and J. D. Keasling. 2011. "Design-driven approaches for engineering RNA-regulated pathway controls." *American Chemical Society Annual Meeting*, Anaheim, CA.
259. B. J. Rutherford, R. D. Rosengarten, R. H. Dahl, P. I. Benke, N. J. Hillson, A. Mukhopadhyay, and J. D. Keasling. 2011. "Combinatorial Expression of n-Butanol Responsive Genes to Explore Resistant Phenotypes in *Escherichia coli*." *American Society of Mass Spectrometry*, Denver CO.
260. C. J. Joshua, R. H. Dahl, P. I. Benke and J. D. Keasling. 2011. "Absence of glucose-induced diauxie in *Sulfolobus acidocaldarius*." *Gordon Research Conference (GRC) on Archaea: Ecology, metabolism and molecular biology*, Waterville, NH.
261. W. Kim, S. Yuzawa, S. Poust, J. Fortman, L. Katz, and J. D. Keasling. 2011. "Production of precursors of isooctane in *E. coli* by type I polyketide synthase." *Society for Industrial Microbiology Annual Meeting*, New Orleans.
262. L. Weaver, J. D. Keasling, and N. Hillson. 2011. "Towards Heterologous formation of microcompartments in *E. coli*." *International Conference on Systems Biology*.
263. J. Kirby, M. Nishimoto, J. L. Fortman, and J. D. Keasling. 2011. "Novel pathways from plant sugars to isoprenoid-based fuels." *1st Brazilian BioEnergy Science and Technology Conference*, Campos do Jordao, Brazil.
264. A. E. McKee, B. J. Rutherford, D. Juminaga, E. E. Baidoo, D. C. Chivian, P. I. Benke, J. A. Dietrich, S. M. Ma, A. A. Arkin, C. J. Petzold, J. D. Keasling, and S. Chhabra. 2011. "Manipulation of the Carbon Storage Regulator System for Metabolite Remodeling and Biofuel Production in *Escherichia coli*." *International Conference of Systems Biology*, Heidelberg, Germany.
265. J. Kirby, M. Nishimoto, J. G. Park, J. L. Fortman, and J. D. Keasling. 2011. "Diterpene Biosynthesis in *Ricinus Communis* –Modification of Casbene by a Cytochrome P450 Monooxygenase." *Phytochemical Society of North America*, Hawaii.
266. L. Katz, J. Fortman, A. Hagen, S. Yuzawa, W. Kim, S. Zotchev, O. Sekurova, J. Zhang, and J. Keasling. 2011. "Biosynthesis of Fuels and Chemicals Using Polyketide Synthases." *2011 16th International Symposium on the biology of Actinomycetes*, Puerto Vallarta, Mexico.

267. T. S. Ham, H. A. Plahar, Z. Dmytriv, J. Chen, D. Densmore, R. D. Rosengarten, N. Elsbree, G. Linshiz, J. D. Keasling, and N. J. Hillson. 2012. "Synthetic Biology design automation tool suite." *Genomic Science Contractors-Grantees Meeting*, Bethesda, MD.
268. Goh, E.-B., Keasling, J. D., and Beller, H.R. 2012. "Engineering of bacterial methyl ketone synthesis for biofuels." *Genomic Science Contractors-Grantees Meeting*, Bethesda, MD February 27-29, 2012.
269. T. S. Lee, K. W. George, R. Rosengarten, N. Hillson, D. Garcia, S. Ma, S. Chhabra, A. Redding-Johanson, T. Batth, C. Petzold, P. Adams, and J. D. Keasling. 2012. "Metabolic engineering of Mevalonate pathway in *E. coli* for isoprenoid fuel production." *Genomic Science Contractors-Grantees Meeting*, Bethesda, MD.
270. G. Linshiz, N. Stawski, N. Elsbree, J. D. Keasling and N. Hillson. 2012. "Development of Biology Friendly Tools for Lab Automation and DNA Construction." *International Workshop on BioDesign Automation*, San Francisco, CA, June 3-4, 2012
271. H. M. Woo, E. Kim, J. D. Keasling, and T. S. Lee. 2012. "Quorum sensing-based IPTG-free system for production of bisabolene as a precursor of advanced biofuels in engineered *E. coli*." *Metabolic Engineering IX*, Biarritz, France.
272. E. E. K. Baidoo, S. Yilmaz, J. Geller, T. C. Hazen, A. K. Singh and J. D. Keasling. 2012. "Differential analysis of metabolic intermediates from *Desulfovibrio vulgaris* Hildenborough and *Methanococcus maripaludis* under syntrophic growth conditions." *American Society for Microbiology Annual Meeting*, San Francisco, CA.
273. G. Bokinsky, E. Baidoo, H. Burd, H. Juminaga, and J. D. Keasling. 2012. The off switch of *E. coli*: Physiology of persister cells determined by post-translational regulatory cascade." *American Society for Microbiology Annual Meeting*, San Francisco, CA.
274. J. Alonso-Gutierrez, T. Batth, R. Chan, H. Garcia-Martin, C. Petzold, P. Adams, J. D. Keasling and Taek Soon Lee. 2012. "Microbial Limonene Production: Proteomics-Production correlation analysis as a tool to direct metabolic engineering of heterologous pathways." *American Society for Microbiology Annual Meeting*, San Francisco, CA.
275. K.W. George, R. Rosengarten, P. Singh, T. Batth, I. Vaino, P. Adams, J. Keasling, N. Hillson, C. Petzold, and T. Lee. 2012. "Combinatorial assembly and targeted analysis of mevalonate pathway variants." *American Society for Microbiology Annual Meeting*, San Francisco, CA..
276. T. de Rond, P. Peralta-Yahya, J. D. Keasling. 2012. "Expanding the Scope of a High-Throughput Enzyme Activity Assay." *Biocatalysis Gordon Research Conference*.
277. G. Linshiz, N. Stawski, S. Poust, C. Bi, J. D. Keasling, and N. J. Hillson. 2013. "PaR-PaR Laboratory Automation platform." *Inaugural Early Investigators Biosciences Retreat*.
278. G. Bokinsky, P. Peralta-Yahya, A. George, B. M. Holmes, E. Steen, J. Dietrich, T. S. Lee, D. Tullman-Ercek, C. Voigt, B. A. Simmons, and J. D. Keasling. 2013. "Engineering *E. coli* to convert plant biomass into Fuels" *DOE Genomic Sciences Contractor-Grantee Meeting XI*, Bethesda, MD.
279. K. W. George, G. Murray, S. Yang, A. Jain, J. Alonso-Gutiérrez, E. Baidoo, T.S. Batth, C.J. Petzold, P.D. Adams, J.D. Keasling, and T.S. Lee. 2013. "High-titer production of isopentenol through rational pathway engineering" *DOE Genomic Sciences Contractor-Grantee Meeting XI*, Bethesda, MD.
280. G. Linshiz, N. Stawski, S. Poust, C. Bi, J. D. Keasling, and N. J. Hillson. 2013. "PR-PR Programming a Robot – Laboratory Automation Platform." *DOE Genomic Sciences Contractor-Grantee Meeting XI*, Bethesda, MD.
281. H. R. Beller, E.-B. Goh, P. Javidpour, F. Zhang, and J. D. Keasling. 2013. "New developments in fatty acid-derived fuels at JBEI." *DOE Genomic Sciences Contractor-Grantee Meeting XI*, Bethesda, MD.
282. K. George, H. Chou, J. D. Keasling, and T. S. Lee. 2013. "Microbial production of advanced biofuels - C5 alcohols". 245th ACS National Meeting & Exposition, New Orleans, LA.
283. M. Nhan, J. Kirby, C. Paddon, J. D. Keasling, and K. Monroe. 2013. "Microbial Production of Artemisinin Through Synthetic Biology". *Bay Area World Malaria Day Symposium*, Berkeley, CA.
284. J. Alonso-Gutierrez, T. Batth, R. Chan, H. Garcia Martin, C. Petzold, P. Adams, J. D. Keasling, and T. S. Lee. 2013. "Microbial limonene production: Proteomics-production correlation analysis as a tool to direct metabolic engineering of heterologous pathways". 245th ACS National Meeting & Exposition, New Orleans, LA.

285. S. Yuzawa, W. Kim, L. Katz and J. D. Keasling. 2013. "Repurposing antibiotic-producing polyketide synthases to produce biofuels." *35th Symposium on Biotechnology for Fuels and Chemicals*, Portland, OR.
286. T. de Rond & J. D. Keasling. 2013. "Directed evolution of a cytochrome P450 using PECAN". *Gordon Research Conference on Enzymes, Cofactors and Metabolic Pathways*, Waterville, NH.
287. G. Linshiz, N. Stawski, S. Poust, C. Bi, J. D. Keasling, and N. J. Hillson. 2013. "PR-PR Laboratory Automation Platform." *Synthetic Biology 6.0*, London, UK
288. H. A. Plahar, J. Chen, T. Ham, Z. Dmytriv, J. D. Keasling, and N. J. Hillson. 2013. "JBEI-ICE: A Distributed and Interconnected Biological Part Registry." *Synthetic Biology 6.0*, London, UK, July 9-11, 2013
289. J. Chen, R. Rosengarten, D. Densmore, T. Ham, J. D. Keasling, and N. Hillson. 2013. "j5 and DeviceEditor: DNA assembly design automation." *IWBDA 2013: Fifth International Conference on BioDesign Automation*, London, UK, July 12-13, 2013.
290. Linshiz, G., Stawski, N., Poust, S., Bi, C., Keasling, J.D., and Hillson, N.J. "PR-PR Laboratory Automation Platform", Poster, IWBDA, London, UK, July 12-13, 2013.
291. H. Plahar, T. S. Ham, Z. Dmytriv, J. Chen, N. J. Hillson and J. D. Keasling. 2013. "Web of Registries: A distributed cyberinfrastructure for synthetic biology". *Biobricks Foundation SB6: Sixth International Meeting on Synthetic Biology*, Imperial College, London.
292. H. A. Plahar, J. Chen, T. Ham, Z. Dmytriv, J. D. Keasling, and N. J. Hillson. 2013. "JBEI-ICE: A Distributed and Interconnected Biological Part Registry." *IWBDA 2013: Fifth International Conference on BioDesign Automation*, London, UK.
293. H. Plahar, T. Ham, J. Chen, J. D. Keasling and N. Hillson. 2013. "JBEI-ICE: An Open Source Biological Part Registry". *IWBDA 2013: Fifth International Conference on BioDesign Automation*, London, UK.
294. I. Budin and J. D. Keasling. 2014. "Engineering lipid composition in cells." *Biophysical Society Meeting*, San Francisco, CA February 2014.
295. L. d'Espaux, A. Reider Apel, M. Wehrs, A. Ghosh, R. A. Li, D. Sachs, M. Garber, W. Zhuang, J. Gin, L. J. G. Chan, O. Nnadi, C. J. Petzold, N. Hillson, and J. D. Keasling. 2014. "A Cas9-Based Toolkit to Program Gene Expression in *Saccharomyces cerevisiae*." *Metabolic Engineering 10*, Poster, Vancouver, Canada.
296. R. M. Phelan, P. J. Kelly, S. Poust, S. Deutsch, C. Petzold, L. Katz, and J. D. Keasling. 2014. "Production of Diverse, Highly-Reduced Compounds Using Polyketide Synthases." *Gordon Bioorganic Research Conference*, Andover, NH, June 2014.
297. T. de Rond and J. D. Keasling. 2014. "High-throughput mass-spectrometric enzyme activity determination with PECAN." *Gordon Research Conference, Bioorganic Chemistry*, Andover, NH July 2014.
298. C. Denby, S. Rodriguez and J. D. Keasling. 2014. "Increasing flux to acetyl-CoA derived products in *S. cerevisiae*." *Metabolic Engineering 10*, Vancouver, Canada.
299. A. Lechner, N. Koutsoubelis, A. Löchner, S. Yuzawa, C. Petzold, L. Katz and J. D. Keasling. 2014. "Bioengineering polyketide precursor supply in native and heterologous hosts" *Society for Industrial Microbiology and Biotechnology Annual Meeting*, St. Louis, MO.
300. T. de Rond, and J. D. Keasling, 2014. "High-throughput mass-spectrometric enzyme activity determination with PECAN", *Society for Industrial Microbiology and Biotechnology Annual Meeting*, St. Louis, MO.
301. A. Lechner, B. S. Moore, L. Katz and J.D. Keasling. 2014. "Bioengineering polyketide precursor supply in native and heterologous hosts". *5th EUCHEMS Chemistry Congress*, Istanbul, Turkey.
302. T. de Rond and J. D. Keasling. 2014. "High-throughput mass-spectrometric enzyme activity determination with PECAN." *Synthetic Biology Meets Organic Synthesis*, Berkeley, CA.
303. R. M. Phelan, P. J. Kelly, S. Poust, J. F. Barajas, S. Petkiewicz, S. Deutsch, C. Petzold, L. Katz, J. Keasling. 2015. "Production of Diverse, Highly-Reduced Compounds Using Polyketide Synthases." *Society for Industrial Microbiology: Natural Product Discovery in the Post Genomic Era*, San Diego, CA, January 2015.
304. S. Yuzawa, L. Katz, G. Wang, E. Baidoo, and J. D. Keasling. 2015. "Production of structurally diverse ketones by engineered polyketide synthases." *Society for Industrial Microbiology: Natural Product Discovery in the Post Genomic Era*, San Diego, CA.

305. A Lechner, S. Yuzawa, N. Koutsoubelis, E. Brunk, M. Guell, G. Church, B. Palsson, L. Katz and J. Keasling. 2015. "A Diverse Polyketide Engineering and Production Platform in *S. cerevisiae*." *Natural Products Discovery & Development in the Post Genomic Era*, San Diego, CA.
306. T. de Rond and J. D. Keasling. 2015. "High-throughput mass-spectrometric enzyme activity determination with PECAN." *Natural Product Discovery & Development in the Post Genomic Era*, San Diego, CA.
307. C. H. Eng, S. Yuzawa, L. Katz, J. D. Keasling. 2015. "In vitro enzyme analysis guides production of a natural product analog." *Natural Product Discovery and Development in the Post Genomic Era*, San Diego, CA, January 2015.
308. E. E. K. Baidoo, G. Wang and J. D. Keasling. 2015. "Overcoming the analytical challenge of analyzing Intermediates of Isoprenoid Biosynthesis in *Escherichia coli*." *Metabolomics Society conference*, Burlingame, CA.
309. I. Budin, D. Degreif, and J. D. Keasling. 2015. "Genetic engineering of lipid composition in budding yeast." *EMBL Symposium on Eukaryotic Synthetic Biology*, Heidelberg, Germany.
310. S. Yuzawa, K. Deng, T. Northen, P. D. Adams, L. Katz, and J.D. Keasling. 2015. "An improved design for acyltransferase domain replacements in modular polyketide syntheses." *Annual Meeting of Society for Actinomycetes*, Japan.
311. J. Wong, C. Dreischer, T. Dezulian, S. J. Schultheiss, J. Gu, R. Lam, R. Hall, N. Sisneros, S. Mark, and J. D. Keasling. 2016. "PacBio de novo assembly of the *Homalanthus nutans* genome provides insight into prostratin biosynthesis." *Plant and Animal Genome Conference*, San Diego, CA.
312. L. d'Espaux, A. Reider Apel, M. Wehrs, A. Ghosh, R. A. Li, D. Sachs, M. Garber, W. Zhuang, J. Gin, L. J. G. Chan, O. Nnadi, C. J. Petzold, N. Hillson, H. Garcia Martin, A. Mukhopadhyay, and J. D. Keasling. 2016. "A Cas9-based toolkit to program gene expression in *Saccharomyces cerevisiae*." *5th Int'l Conf on Biomolecular Engineering*, Austin TX.
313. R. A. Li, Y. Yoshikuni, J. D. Keasling. 2016. "Characterization of the *Eucalyptus grandis* terpenome using engineered yeast strains." *JGI User Meeting*, Walnut Creek Walnut Creek, CA.
314. T. de Rond, J. D. Keasling, J. Blake-Hedges, and C. Delbeek. 2016. "Profiling The Isoprenoid diversity of Soft Corals." *Gordon Research Conference, Marine Natural Products*, Ventura, CA.
315. R. A. Li, Y. Yoshikuni, and J. D. Keasling. 2016. "Characterization of the *Eucalyptus grandis* terpenome using engineered yeast strains." *Metabolic Engineering 11*, Awaji, Japan.
316. L. d'Espaux, A. Reider Apel, M. Wehrs, A. Ghosh, R. A. Li, D. Sachs, M. Garber, W. Zhuang, J. Gin, L. J. G. Chan, O. Nnadi, C. J. Petzold, N. Hillson, H. Garcia Martin, A. Mukhopadhyay, and J. D. Keasling. 2016. "A Cas9-based toolkit to program gene expression in *Saccharomyces cerevisiae*." *Metabolic Engineering 11*, Kobe, Japan.
317. J. Wong, L. d'Espaux, L. Rios, G. Tong, and J. D. Keasling. 2016. "Engineering *Saccharomyces cerevisiae* for prostratin production." *Metabolic Engineering 11*, Awaji, Japan.