Jared Renton Leadbetter *Curriculum Vita*

ACADEMIC BACKGROUND

University of Iowa	Postdoctoral	June 1998 - July 2000	Microbiology
Michigan State University	Postdoctoral	June 1997 - May 1998	Microbiology
Michigan State University	Ph.D.	Sept 1991 - May 1997	Microbiology
Woods Hole Oceanographic Institution	Guest Student	May 1991 - Aug 1991	Biology
Goucher College	Honors BA	Sept 1987 - May 1991	Biological Sciences
Marine Biological Laboratory	Student	June 1990 - July 1990	Microbial Diversity

PROFESSIONAL APPOINTMENTS

Professor of Environmental Microbiology — Nov. 2010 - *current*
Associate Professor of Environmental Microbiology — June 2006 - Oct. 2010
Assistant Professor of Environmental Microbiology — August 2000 - May 2006
Environmental Science & Engineering - Linde Center for Global Environmental Science
Divisions of Engineering & Applied Science and *Geological & Planetary Sciences*
California Institute of Technology - Pasadena

HONORS AND AWARDS

Chair - American Society for Microbiology "*Division K: Microbial Physiology & Metabolism*"	2013
Fellow - American Academy of Microbiology	2012
John Ingraham - Genentech Lecturer - West Coast Bacterial Physiologists Meeting - Asilomar	2002
NSF Postdoctoral Fellowship in the Biosciences Related to the Environment	1999
NIH NRSA Infectious Diseases Fellowship (Administered by the Univ. of Iowa)	1998
Leah Seidman-Shafer Microbiology Award (Goucher College - Baltimore)	1991
Bernard Davis Summer Fellowship (Marine Biological Laboratory - Woods Hole)	1990

PUBLICATIONS *(refereed)*

1. Choi H. M., Calvert C. R., Husain N., Huss D., Barsi J. C., Deverman B. E., Hunter R. C., Kato M., Lee S. M., Abelin A. C., Rosenthal A. Z., Akbari O. S., Li Y., Hay B. A., Sternberg P. W., Patterson P. H., Davidson E. H., Mazmanian S. K., Prober D. A., van de Rijn M., **Leadbetter J. R.**, Newman D. K., Readhead C., Bronner M.E., Wold B., Lansford R., Sauka-Spengler T., Fraser S. E., and N. A. Pierce (2016). Mapping a multiplexed zoo of mRNA expression. **Development** 143: 3632-3637 [doi: 10.1242/dev.140137].
2. Tocheva EI, E. G. Matson, S. N. Cheng, W. Chen, **J. R. Leadbetter**, and G. J. Jensen (2014). Structure and expression of propanediol utilization microcompartments in *Acetonema longum*. **J Bacteriol** 196:1651-1658 **[**doi: 10.1128/JB.00049-14].
3. Lucey, K. S. and **J. R. Leadbetter** (2014). Catechol 2,3-dioxygenase and other meta-cleavage catabolic pathway genes in the "anaerobic" termite gut spirochete *Treponema primitia*. **Mol Ecol** 23:1531-1543 [doi: 10.1111/mec.12598].
4. Matson, E. G., A. Z. Rosenthal, X. Zhang, and **J. R. Leadbetter** (2013). Genome-wide effects of selenium and translational uncoupling on transcription in the termite gut symbiont *Treponema primitia*. **mBio** 4(6) [doi: 10.1128/mBio.00869-13].
5. Rosenthal, A. Z., X. Zhang, K. S. Lucey, E. A. Ottesen, V. Trivedi, H. M. T. Choi, N. A. Pierce, and **J. R. Leadbetter** (2013). Localizing transcripts to single cells suggests an important role of uncultured deltaproteobacteria in the termite gut hydrogen economy. **Proc Natl Acad Sci USA** 110:16163-8 [doi: 10.1073/pnas.1307876110].
6. Zhang, X. and **J. R. Leadbetter** (2012). Evidence for cascades of perturbation and adaption in the metabolic genes of higher termite gut symbionts. **mBio** 3(4): [doi: 10.1128/mBio.00223-12].
7. Ballor, N. R. and **J. R. Leadbetter** (2012). Analysis of extensive [FeFe] hydrogenase gene diversity within the gut microbiota of insects representing five families of *Dictyoptera*. **Microb Ecol** 63: 586-595.

8. Ballor, N. R. and **J. R. Leadbetter** (2012). Patterns of [FeFe] hydrogenase diversity in the gut microbial communities of lignocellulose-feeding higher termites. **Appl Environ Microbiol** 78: 5368-5374.
9. Ballor, N. R., I. Paulsen, and **J. R. Leadbetter** (2012). Genomic analysis reveals multiple [FeFe] hydrogenases and hydrogen sensors encoded by treponemes from the H_2-rich termite gut. **Microb Ecol** 63: 282-294.
10. Tocheva, E. I., E. G. Matson, D. M. Morris, F. Moussavi, **J. R. Leadbetter**, and G. J. Jensen (2011). Peptidoglycan remodeling and conversion of an inner membrane into an outer membrane during sporulation. **Cell** 146:799-812.
11. Tadmor, A. D., E. A. Ottesen, **J. R. Leadbetter**, and R. Phillips (2011). Probing individual environmental bacteria for viruses by using microfluidic digital PCR. **Science** 333:58-62.
12. Chen, S., M. Beeby, G. E. Murphy, **J. R. Leadbetter**, D. R. Hendrixson, A. Briegel, Z. Li, J. Shi, E. I. Tocheva, A. Muller, M. J. Dobro, and G. J. Jensen (2011). Structural diversity of bacterial flagellar motors. **EMBO J.** 30:2972-2981.
13. Matson, E. G., K. G. Gora, and **J. R. Leadbetter** (2011). Anaerobic carbon monoxide dehydrogenase diversity in the homoacetogenic hindgut microbial communities of lower termites and the wood roach. **PLoS One** 6:*e19316*.
14. Ottesen, E. A., and **J. R. Leadbetter** (2011). Formyltetrahydrofolate synthetase gene diversity in the guts of higher termites with different diets and lifestyles. **Appl Environ Microbiol** 77:3461-7.
15. Rosenthal, A. Z., E. G. Matson, A. Eldar, and **J. R. Leadbetter** (2011). RNA-seq reveals cooperative metabolic interactions between two termite-gut spirochete species in co-culture. **ISME J** 5:1133-42.
16. Zhang, X., E. G. Matson, and **J. R. Leadbetter** (2011). Genes for selenium dependent and independent formate dehydrogenase in the gut microbial communities of three lower, wood-feeding termites and a wood-feeding roach. **Environ Microbiol** 13:307-23.
17. Han, J.-I., H. K. Choi, S. W. Lee, P. M. Orwin, J. Kim, S. L. Laroe, T. G. Kim, J. O'Neil, **J. R. Leadbetter**, S. Y. Lee, C. G. Hur, J. C. Spain, G. Ovchinnikova, L. Goodwin, and C. Han (2011). Complete genome sequence of the metabolically versatile plant growth-promoting endophyte *Variovorax paradoxus* S110. **J Bacteriol** 193:1183-90.
18. Ottesen, E. A., and **J. R. Leadbetter** (2010). Diversity of formyltetrahydrofolate synthetases in the guts of the wood-feeding cockroach *Cryptocercus punctulatus* and the omnivorous cockroach *Periplaneta americana*. **Appl Environ Microbiol** 76**:**4909-13.
19. Matson, E. G., X. Zhang, and **J. R. Leadbetter** (2010). Selenium controls transcription of paralogous formate dehydrogenase genes in the termite gut acetogen, *Treponema primitia*. **Environ Microbiol** 12:2245-2258.
20. Murphy, G. E., E. G. Matson, **J. R. Leadbetter**, H. C. Berg, and G. J. Jensen (2008). Novel ultrastructures of *Treponema primitia* and their implications for motility. **Mol Microbiol** 67:1184-95.
21. Warnecke, F., P. Luginbuhl, N. Ivanova, M. Ghassemian, T. H. Richardson, J. T. Stege, M. Cayouette, A. C. McHardy, G. Djordjevic, N. Aboushadi, R. Sorek, S. G. Tringe, M. Podar, H. G. Martin, V. Kunin, D. Dalevi, J. Madejska, E. Kirton, D. Platt, E. Szeto, A. Salamov, K. Barry, N. Mikhailova, N. C. Kyrpides, E. G. Matson, E. A. Ottesen, X. Zhang, M. Hernandez, C. Murillo, L. G. Acosta, I. Rigoutsos, G. Tamayo, B. D. Green, C. Chang, E. M. Rubin, E. J. Mathur, D. E. Robertson, P. Hugenholtz, and **J. R. Leadbetter** (2007). Metagenomic and functional analysis of hindgut microbiota of a wood-feeding higher termite. **Nature** 450:560-5.
22. Hawkins, A. C., F. H. Arnold, R. Stuermer, B. Hauer, and **J. R. Leadbetter** (2007). Directed evolution of *Vibrio fischeri* LuxR for improved response to butanoyl-homoserine lactone. **Appl Environ Microbiol** 73: 5775-5781.
23. Ottesen, E. A., J. W. Hong, S. R. Quake, and **J. R. Leadbetter** (2006). Microfluidic digital PCR enables multigene analysis of individual environmental bacteria. **Science** 314:1464-7.
24. Murphy, G. E., **J. R. Leadbetter**, and G. J. Jensen (2006). *In situ* structure of the complete *Treponema primitia* flagellar motor. **Nature** 442:1062-4.
25. Collins, C. H., **J. R. Leadbetter**, and F. H. Arnold (2006). Dual selection enhances the signaling specificity of a variant of the quorum-sensing transcriptional activator LuxR. **Nat Biotechnol** 24:708-12.
26. Flagan, S. F., and **J. R. Leadbetter** (2006). Utilization of capsaicin and vanillylamine as growth substrates by *Capsicum* (hot pepper)-associated bacteria. **Environ Microbiol** 8:560-5.

27. Huang, J. J., A. Petersen, M. Whiteley, and **J. R. Leadbetter** (2006). Identification of QuiP, the product of gene PA1032, as the second acyl-homoserine lactone acylase of *Pseudomonas aeruginosa* PAO1. **Appl Environ Microbiol** 72:1190-7.
28. Salmassi, T. M., J. J. Walker, D. K. Newman, **J. R. Leadbetter**, N. R. Pace, and J. G. Hering (2006). Community and cultivation analysis of arsenite oxidizing biofilms at Hot Creek. **Environ Microbiol** 8:50-9.
29. Yang, W. W., J.-I. Han, and **J. R. Leadbetter** (2006). Utilization of homoserine lactone as a sole source of carbon and energy by soil *Arthrobacter* and *Burkholderia* species. **Arch Microbiol** 185:47-54.
30. Wang, Y.-J., and **J. R. Leadbetter** (2005). Rapid acyl-homoserine lactone quorum signal decomposition by diverse soils. **Appl Environ Microbiol** 71:1291-1299 **(with cover illustration)**.
31. Collins, C. H., F. H. Arnold, and **J. R. Leadbetter** (2005). Directed evolution of *Vibrio fischeri* LuxR for increased sensitivity to a broad spectrum of acyl-homoserine lactones. **Mol Microbiol** 55:712-723.
32. Graber, J. R., **J. R. Leadbetter**, and J. A. Breznak (2004). Description of *Treponema azotonutricium* sp. nov. and *Treponema primitia* sp. nov., the first spirochetes isolated from termite guts. **Appl Environ Microbiol** 70:1315-1320.
33. Vu, A. T., N. C. Nguyen, and **J. R. Leadbetter** (2004). Iron reduction in the metal-rich guts of wood-feeding termites. **Geobiology** 2:239-247.
34. Lin, Y.-H., J.-L. Xu, J. Hu, L.-H. Wang, S. L. Ong, **J. R. Leadbetter**, and L.-H. Zhang (2003). Acyl-homoserine lactone acylase from *Ralstonia* str. XJ12B represents a novel and potent class of quorum quenching enzymes. **Mol Microbiol** 47:849-860.
35. Flagan, S., W.-K. Ching, and **J. R. Leadbetter** (2003). *Arthrobacter* strain VAI-A utilizes acyl-homoserine lactone inactivation products and stimulates quorum signal biodegradation by *Variovorax paradoxus*. **Appl Environ Microbiol** 69:909-916.
36. Salmassi, T. M., and **J. R. Leadbetter** (2003). Analysis of genes of tetrahydrofolate-dependent metabolism from cultivated spirochaetes and the gut community of the termite *Zootermopsis angusticollis*. **Microbiology** 149:2529-2537 **(with cover illustration)**.
37. Huang, J. J., J.-I. Han, L.-H. Zhang, and **J. R. Leadbetter** (2003). Utilization of acyl-homoserine lactone quorum signals for growth by a soil pseudomonad and *Pseudomonas aeruginosa* PAO1. **Appl Environ Microbiol** 69:5941-5949.
38. **Leadbetter, J. R.** (2003). Cultivation of recalcitrant microbes: cells are alive, well, and revealing their secrets in the 21st century laboratory. **Curr Opin Microbiol** 6:274-281.
39. Lilburn, T. G., K. S. Kim, N. E. Ostrom, K. R. Byzek, **J. R. Leadbetter**, and J. A. Breznak (2001). Nitrogen fixation by symbiotic and free-living spirochetes. **Science** 292:2495-8.
40. **Leadbetter, J. R.**, and E. P. Greenberg (2000). Metabolism of acyl-homoserine lactone quorum-sensing signals by *Variovorax paradoxus*. **J Bacteriol** 182:6921-6.
41. **Leadbetter, J. R.**, T. M. Schmidt, J. R. Graber, and J. A. Breznak (1999). Acetogenesis from H_2 plus CO_2 by spirochetes from termite guts. **Science** 283:686-689.
42. Lie, T. J., **J. R. Leadbetter**, and E. R. Leadbetter (1998). Metabolism of sulfonic acids and other organosulfur compounds by sulfate-reducing bacteria. **Geomicrobiol J** 15:135-149.
43. **Leadbetter, J. R.**, L. D. Crosby, and J. A. Breznak (1998). *Methanobrevibacter filiformis* sp. nov., a filamentous methanogen from termite hindguts. **Arch Microbiol** 169:287-92.
44. **Leadbetter, J. R.**, and J. A. Breznak (1996). Physiological ecology of *Methanobrevibacter cuticularis* sp. nov. and *Methanobrevibacter curvatus* sp. nov., isolated from the hindgut of the termite *Reticulitermes flavipes*. **Appl Environ Microbiol** 62:3620-3631.
45. Lie, T. J., T. Pitta, E. R. Leadbetter, W. Godchaux, 3rd, and **J. R. Leadbetter** (1996). Sulfonates: novel electron acceptors in anaerobic respiration. **Arch Microbiol** 166:204-210.
46. Smith, J. J., J. S. Scott-Craig, **J. R. Leadbetter**, G. L. Bush, D. L. Roberts, and D. W. Fulbright (1994). Characterization of random amplified polymorphic DNA (RAPD) products from *Xanthomonas campestris* and some comments on the use of RAPD products in phylogenetic analysis. **Mol Phylogenet Evol** 3:135-145.

OTHER PUBLICATIONS

47. Kee H. L., I. V. Mikheyeva, R. L. Mickol, S. C. Dawson, D. K. Newman, and **J. R. Leadbetter** (2019). Draft genome sequence of the iridescent marine bacterium *Tenacibaculum discolor* Strain IMLK18. **Microbiol Resour Announc** 8(5):e01683-18. https://doi.org/10.1128/MRA.01683-18
48. Mariita RM, Bhatnagar S, Hanselmann K, Hossain MJ, Korlach J, Boitano M, Roberts RJ, Liles MR, Moss AG, **Leadbetter J. R.**, Newman D. K., Dawson S. C. (2015). Complete Genome Sequence of *Streptomyces* sp. Strain CCM_MD2014, Isolated from Topsoil in Woods Hole, Massachusetts. **Genome Announc** 31;3(6):e01506-15. doi: 10.1128/genomeA.01506-15. PMID: 26722012.
49. Mariita R. M., Bhatnagar S., Hanselmann K., Hossain M.J., Korlach J., Boitano M., Roberts R. J., Liles M. R., Moss A. G., **Leadbetter J. R.**, Newman D. K., Dawson S. C. (2015). Complete Genome Sequence of *Curtobacterium* sp. Strain MR_MD2014, Isolated from Topsoil in Woods Hole, Massachusetts. **Genome Announc** 31;3(6):e01504-15. doi: 10.1128/genomeA.01504-15. PMID: 26722011
50. Han, J.-I., J. C. Spain, **J. R. Leadbetter**, G. Ovchinnikova , L. A. Goodwin, C. S. Han, T. Woyke, K. W. Davenport, and P. M. Orwin (2013). Genome of the root-associated plant growth-promoting bacterium *Variovorax paradoxus* strain EPS. **Genome Announc** 1(5):e00843-13 [doi:10.1128/genomeA.00843-13]. PMID: 24158554.
51. Wang, Y. J., J. J. Huang, and **J. R. Leadbetter** (2007). Acyl-HSL signal decay: intrinsic to bacterial cell-cell communications. **Adv Appl Microbiol** 61:27-58.
52. Leadbetter, J. R., Volume Editor (2005). "**Environmental Microbiology, vol. 397**". In: **Methods in ENZYMOLOGY**. Elsevier - Academic Press. This 29 chapter, 568 page edited-volume was the first specifically and entirely focused on the subject of environmental microbiology in this acclaimed, long running series. ISBN: 0-12-182802-6.
53. Yokobayashi, Y., C. H. Collins, **J. R. Leadbetter,** R. Weiss, and F. H. Arnold (2003). Evolutionary design strategies for synthetic genetic circuits. **Adv Complex Syst** 6:37-45.
54. Breznak, J. A., and **J. R. Leadbetter (**2002). Termite gut spirochetes. In M. Dworkin, S. Falkow, E. Rosenberg, K. H. Schleifer, and E. Stackebrandt (ed.), **The Prokaryotes - an evolving electronic resource for the microbiological community**. Springer-Verlag, New York.
55. **Leadbetter, J. R.** (2001). News & Views: plant microbiology - quieting the raucous crowd. **Nature** 411:748-749.

PATENTS & INVENTION DISCLOSURES

1. Hong, J. W., Studer, V., Anderson, W. F., Quake, S. R., and **Leadbetter, J.** (2014). Microfluidic nucleic acid analyses. **US Patent US8871446B2**
2. **Leadbetter, J.**, Huang, J., Han, J-I. Method of identifying agents that inhibit quorum sensing activity of Gamma-Proteobacteria (2008). **US Patent US7335352B1**.

INVITED RESEARCH PRESENTATIONS

1. Gordon Research Conference - *Biology of Spirochetes, Ventura CA* (2018)
2. Gordon Research Conference - *Biology of Spirochetes, Ventura CA* (2014)
3. University of California at Berkeley - *Department of Plant & Microbial Biology* (2013)
4. Marine Biological Laboratory - *Microbial Diversity Course* (2012)
5. NAS/IOM Forum on Microbial Threats - *Social Biology of Microbial Communities, Wash. DC* (2012)
6. UT-Knoxville – *Dept. of Microbiology* (2011)
7. Marine Biological Laboratory - *Microbial Diversity Symposium* (2011)
8. NIH International Human Microbiome Congress - *Vancouver BC Canada* (2011)
9. California State University Fullerton - *Department of Biology* (2011)
10. Office of Naval Research - *ONR Gut Microbiome Workshop - Arlington VA* (2010)
11. Marine Biological Laboratory - *Microbial Diversity Summer Course* (2010)
12. University of California at Davis - *Dept. of Microbiology* (2010)
13. Marine Biological Laboratory - *Microbial Diversity Symposium* (2009)
14. University of Arizona - *Department of EEB* (2009)

15. Entomological Society of America Annual Meeting, Reno - *Keynote, Symposium: Lignocellulose Digestion in Insects and Potential Applications for Biofuels Production* (2008, Declined)
16. AVS - Science & Technology of Materials, Interfaces & Processing 55th International Symposium, Boston - *Plenary Session Biointerfaces in Energy Production* (2008, Declined)
17. International Society for Microbial Ecology 12th Triennial Meeting, Cairns AU - *Session on Novel Technologies & Methods for Functional Community Analysis* (2008, Declined)
18. Monsanto, St. Louis (2008, Declined)
19. Northeastern Microbiologists: Physiology, Ecology, Taxonomy 25th Annual Meeting - *Keynote* (2008)
20. University of California at Berkeley - *Microbiology Student Group Symposium - Keynote* (2008)
21. University of Iowa - *Dept. of Microbiology* (2008)
22. University of California at Irvine - *Dept. of Microbiology* (2008)
23. University of Minnesota - *BioTechnology Institute* (2007, *Declined*)
24. American Soc. Microbiol - *Cell Cell Signaling Conference, Austin* (2007, *Declined*)
25. Society General Microbiology Symposium, Edinburgh - *Post Genomic Analyses in the Environment* (2007, *Declined, Caltech Biology graduate student spoke in my place*)
26. Univ. Southern California - *Department of Marine Sciences* (2007)
27. Wind River Conference on Prokaryote Biology - *Student Invited Keynote* (2007)
28. UCLA School of Public Health - *Department of Environmental Health Science* (2007)
29. Pomona College - *Department of Biology* (2007)
30. Harvard Medical School - *Department of Microbiology - Student Invited* (2007)
31. Montana State University - *Center for Biofilm Research* (2006)
32. Gordon Research Conference - *C1 Metabolism, Oxford UK* (2006)
33. Gordon Research Conference - *Biology of Spirochetes, Tuscany Italy* (2006)
34. DOE Joint Genome Institute - *Users Meeting, Walnut Creek CA* (2006)
35. DOE Genomes to Life Workshop - *Metabolic Engineering Working Group, Rockville MD* (2006)
36. Gordon Research Conference - *Environmental Microbiology, New London CT* (2005)
37. American Society for Microbiology - *National Meeting* (2005)
38. University of Wisconsin-Madison - *Department of Bacteriology* (2005)
39. Scripps Inst. of Oceanography/UCSD - *San Diego Microbiology Group* (2005)
40. Georgia Institute of Technology - *Department of Microbiology* (2005)
41. University of California at Riverside - *Department of Chemical & Environmental Engineering* (2005)
42. Dartmouth College - *Department of Microbiology & Immunology* (2004)
43. National Institutes of Health - *Rocky Mountain Biological Laboratory* (2004)
44. University of Montana - *Department of Biology* (2004)
45. Diversa Inc. - *San Diego* (2004)
46. Marine Biological Laboratory - *Microbial Diversity Summer Course* (2004)
47. von Humboldt Foundation/Nat Acad Sci - *German American* Frontiers of Science - *Hamburg* (2004)
48. Indiana University - *Biocomplexity Meeting* (2004)
49. University of Oklahoma - *Department of Microbiology* (2004)
50. Assoc. for Environ. Health & Sciences, *West Coast Conference on Soils, Sediments, & Water* (2004)
51. University of California at Berkeley - *Department of Plant & Microbial Biology* (2004)
52. Gordon Research Conference - *Biology of Spirochetes, Ventura CA* (2004)
53. BASF-Ludwigschafen - *Div. of Fine Chemicals & Biocatalysis Research* (2003)
54. University of Bonn - *Institute for Microbiology & Biotechnology* (2003)
55. University of Konstanz - *Department of Biology* (2003)
56. National Research Council/NAS - *Systems Biology Colloquium* (2003)
57. University of Hawaii - *Kewalo Marine Laboratory* (2003)
58. Marine Biological Laboratory - *Microbial Diversity Summer Course* (2003)
59. University of Southern California - *Dept. of Civil & Environmental Engineering* (2003)
60. California State University Los Angeles - *CEA CREST Program* (2003)
61. University of Wisconsin-La Crosse - *Department of Microbiology* (2003)
62. West Coast Bacterial Physiologists Meeting - *Asilomar* (2002)
63. University of Pennsylvania - *Department of Biology* (2002)
64. American Society for Microbiology - *National Meeting* (2002)

65. University of Illinois - *Department of Microbiology* (2002)
66. Harvey Mudd College - *Department of Biology* (2001)
67. University of Southern California - *Molecular Biology Program* (2001)
68. Occidental College - *Summer Research Lecture Series* (2001)
69. American Society for Microbiology - *National Meeting* (2001)
70. Occidental College - *Department of Biology* (2000)
71. Pennsylvania State University - *Department of Biochemistry & Molecular Biology* (2000)
72. American Society for Microbiology - *North Central Branch Meeting* (1999)
73. Marine Biological Laboratory - *Microbial Diversity Summer Course* (1999)
74. University of Iowa - *College of Dentistry* (1999)
75. University of Iowa - *Department of Microbiology* (1997)
76. Marine Biological Laboratory - *Microbial Diversity Summer Course* (1997)
77. Max Planck Institute for Marine Microbiology - *Bremen* (1995)

RESEARCH GRANTS & PROJECTS *(as Caltech PI)*

1. NASA – Exobiology Program: "*Closing a Critical Gap in the Manganese Cycle: Discovery, Cultivation, and Genomics of the First Bacteria to Oxidize Mn(II) as an Energy Source for Growth*". (PI).
2. DOE - Genomes to Life Funding Program: "*Massively parallel microfluidics-enabled single cell analysis of lignocellulose conversion by termite hindgut microbes*". (PI).
3. NSF/USDA - Microbial Genomes Sequencing Program: "*Genomics of* Treponema primitia *and* T. azotonutricium*: H_2 metabolizing, N_2 fixing termite gut symbionts*" (as Lead-PI).
4. DOE/Joint Genome Institute - Community Sequencing Program: "*Metagenomics-enabled analysis of plant lignocellulose conversion by termite hindgut microbial communities*" (as Lead-PI).
5. NSF - Ecosystems Studies Program: "*Iron reduction in the metal rich termite gut - impacts on community structure, lignocellulose decomposition, and greenhouse gas emissions*". (PI).
6. DARPA - Biological Input/Output Systems Program - *"Molecular evolution and engineering of single-cell and multi-cellular signal processing circuits"* (as co-PI with 4 others).
7. USDA - Soils & Soil Biology Program - "*Degradation of acyl-homoserine lactone signal molecules by soil microbiota*". (PI).
8. NSF - Biological Infrastructure: "*Starter grant in environmental microbiology*". (PI).

EXTERNAL PROFESSIONAL DUTIES AND SCHOLARLY SERVICES

International Educational Programs (Microbial Diversity Summer Course - MBL Woods Hole)

1. Microbial Diversity Course Co-Director – *for 4 years and 4 summers* (2014, 2015, 2016, 2017)
2. Microbial Diversity Course Faculty - *for the entirety of the duration of the course* (2005, 2006, 2007)
3. Microbial Diversity Course Teaching Staff - *for the entirety of the duration of the course* (1993, 2000)

Reviews for Funding Programs

1. NSF Symbiosis Defense & Self-Recognition
2. NIH Dynamics of Host-Associated Microbial Communities
3. NSF Microbial Interactions & Processes
4. Canadian Cystic Fibrosis Foundation
5. DOE Genomes to Life
6. DOD - ARO Life Sciences
7. DOE Energy Biosciences
8. NSF ADVANCE Fellowships
9. NSF Biological Oceanography
10. NSF Ecology
11. NSF Ecology & Evolutionary Physiology
12. NSF Metabolic Biochemistry
13. NSF Microbial Genetics
14. NSF Microbial Observatories
15. NSF Systematics & Population Biology

16. NSF/USDA Microbial Genome Sequencing Program
17. USDA Soils & Soil Biology
18. USDA US-Israel Bi-National Agricultural R&D Fund

Reviews for Scientific Journals (*ad hoc* unless otherwise noted)

1. Environmental Microbiology - ***Editorial Board*** (2006 - *current*)
2. Applied & Environmental Microbiology - ***Editorial Board*** (2005 - 2010, 2012 - *current*)
3. Archives of Microbiology
4. Biophysical Journal
5. Canadian Journal of Microbiology
6. Cell Host & Microbe
7. Electronic Journal of Biotechnology
8. Environmental Management
9. Environmental Science & Technology
10. FEBS Letters
11. FEMS Microbiology Ecology
12. FEMS Microbiology Letters
13. International Journal of Systematic Bacteriology
14. ISME Journal
15. Journal of Bacteriology
16. Journal of Molecular Evolution
17. Microbial Ecology
18. Microbiology-UK
19. Molecular Microbiology
20. Molecular Plant-Microbe Interactions
21. Nature
22. Nature Biotechnology
23. PNAS USA
24. Science
25. Trends in Cell Biology

Reviews for Publishing Houses *(Textbooks, Books, Book Chapters, etc.)*

1. Cornell University Press
2. Oxford University Press
3. W. W. Norton & Company

Public Outreach Activities

1. iBiology on Line Seminar – Termite Gut Microbiology https://www.ibiology.org/ibioseminars/jared-leadbetter-part-1.html (July 2015)
2. History Channel - *Modern Marvels - Corrosion & Decomposition Episode* - TV Interview & Lab Demo.
3. Natural History Museum of LA County – "*First Fridays" Lecture* (May 2007)
4. Research Profiled in *The Diversity of Life* film series developed for above seminar (2007)
5. Cabinet Magazine – *Interview*, www.cabinetmagazine.org (Spring Issue 2007)
6. Profiled and interviewed for *The Journal of Visualized Experiments*; www.jove.com (2007)
7. Interviewed and Research Profiled for 4-part segment of the radio magazine *Pulse of the Planet*, www.pulseplanet.com (2006)
8. *Presentation and Laboratory Demonstration.* ASM Science-Teacher Appreciation Day, ASM National Meeting (2002, 2001).
9. *Presentation.* Pasadena Senior Center (2003).
10. *Radio Essay:* Interviewed by and helped to develop for the ASM a short radio segment on termites and their microbes released nationally (2003). http://www.flpradio.com/microbeworld/
11. *Presentation and Laboratory Demonstration.* Woods Hole Children's School of Science (2005, 2004).

Colloquia, Symposia, & Workshops *(invited)*

1. *Participant*, NAS/Institute of Medicine Workshop *Forum on Microbial Threats*: *Social Biology of Microbial Communities*, Washington DC, held in March 2012. The results of our discussions appeared in *The National Academies Press* publication intended for use by federal agencies, the media, and educational programs as a research and funding primer.
   - www.nap.edu/catalog/13500/the-social-biology-of-microbial-communities-workshop-summary
   - ISBN: 978-0-309-26432-7
2. *Co-Organizer and Co-Convenor*, *Symposium. "Microbial Symbionts*", International Society for Microbial Ecology Triennial Meeting, Cairns, AU. *August 2008.*
3. *Organizer and Convenor*, *Colloquium. "Symbiotic Microbial Interactions with Invertebrates and Other Microbes"*, American Society for Microbiology Annual National Meeting - Boston. *June 2008.*
4. *Participant and rapporteur*, American Academy of Microbiology Colloquium "*The Uncharted Microbial World*" held in February 2007. The results of our discussions and vision plan appeared in an ASM color publication intended for use by federal agencies, the media, and educational programs as a research and funding primer.
   - www.asm.org/ASM/files/ccLibraryFiles/Filename/000000003691/Uncharted_Microbial_World.pdf
5. *Participant and rapporteur*, American Academy of Microbiology Colloquium "*Systems Microbiology: Beyond Microbial Genomics*" held in May 2004. The results of our discussions and vision plan have appeared in an ASM color publication intended for use by federal agencies, the media, and educational programs as a research and funding primer.
   - www.asm.org/ASM/files/ccLibraryFiles/FILENAME/000000001261/ASM-Sys%20Microbio.pdf
6. *Participant and one of 2 invited speakers*, NAS/NRC Workshop held in August, 2003. The presentations and subsequent discussions served as the basis for the NAS Press publication "*Workshop Summary - Promise and Challenges in Systems Microbiology*".
   - www.nap.edu/catalog/10934.html
   - ISBN 0-309-09167-5
7. *Participant*, as one of only two untenured faculty-members among 25 invited panelists, American Academy of Microbiology Colloquium "*Microbial Communities: Advantages of Multicellular Cooperation*" held in May 2002. The results of our discussions and vision plan have appeared in an ASM color publication intended for use by federal agencies, the media, and educational programs as a research and funding primer.
   - *www.asm.org/ASM/files/CCPAGECONTENT/DOCFILENAME/0000020728/MICROB_COMM.pdf*
8. *Participant*, NAS *Frontiers of Science* held in Irvine CA in the Fall of 2003.
9. *Participant and invited speaker*, German-American *Frontiers of Science* organized by the von Humboldt Foundation and the NAS and held in Hamburg in the Summer of 2004.

RESEARCH GROUP *(development & mentoring)*

Postdoctoral & Senior Associates

1. Hang Yu (Sept. 2017 – July 2020). *Currently Postdoctoral Scholar at* ***USC****.*
2. Eric Matson (Nov. 2004 - June 2011). *Currently tenured professor at* ***UW-Oshkosh***.
3. Adam Rosenthal (July 2008 - Sept. 2011). *Currently research group leader at Dupont.*
4. Weng-Ki Ching (2001 - 2002). *Currently at Ambiocare Inc., Pasadena.*
5. Jong-In Han (2002 - 2004). *Currently tenured professor at* ***KAIST (****Korea).*
6. Paul Orwin (2001 - 2003). *Currently tenured professor at* ***Cal. State Univ.-San Bernardino***.
7. Tina Salmassi (2001 - 2002). *Currently tenured professor at* ***Cal. State Univ.-Los Angeles***.

Graduate Student Research Advisees

1. Kaitlyn Lucey (ESE Option, NSF Predoctoral Fellow; Nov. 2010 - 2013). Caltech PhD Spring ’13.
2. Nicholas Ballor (BMB Option; NSF Predoctoral Fellow; Nov. 2007 - 2011) Caltech PhD Spring ’11.
3. Xinning Zhang (ESE Option; NSF Predoctoral Fellow; Fall 2004 - *current*). Caltech PhD Spring ’10. *Currently tenure-track Asst. Prof. of Geosciences,* ***Princeton University****.*
4. Elizabeth Ottesen (Biology Division, Winter 2003 - *Fall 2008*). Caltech PhD Spring ’07. *Currently Postdoctoral Fellow, MIT. Currently tenure-track Asst. Prof. of Microbiology,* ***Univ. of Georgia.***
5. Cynthia Collins (Biochemistry Option; thesis co-advisee with Prof. Frances Arnold serving as co-mentor, Fall 2001 - Fall 2005). Caltech PhD ’05. *Currently tenured professor at* ***Rensselaer Polytechnic Institute****.*
6. Jean Huang (Biology Division, EPA STAR Fellow; 2002 - 2007). 2005, winner Caltech Graduate Student Council “*Best TA*” Award. Caltech PhD Spring ’07. *Currently Assoc. Professor Bioengineering & Biology,* ***Olin College.***
7. Ya-Juan Wang (ESE Option, Spring 2002 - Winter 2006). Caltech MS ’05; Caltech PhD Spring ’07.
8. Wanwan Yang (ESE Option, Fall 2001 - Spring 2005). Caltech MS ’05.