

Matthew W. Fields

Montana State University, Department of Microbiology
 Center for Biofilm Engineering, 366 EPS Bldg, Bozeman, MT 59717
 Phone: 406-994-7340 E-mail: matthew.fields@erc.montana.edu

Education and Training

Postdoctoral Research Associate, Oak Ridge National Laboratory	2001
Ph.D. Microbiology, Minor: Biochemistry/Biological Engineering, Cornell University	2001
M.S. Biological Sciences, Mississippi State University	1995
B.S. Biology/Chemistry, Western Kentucky University	1993

Professional, Teaching and Research Experience

Assistant Professor, Center for Biofilm Engineering, Montana State University	2007-
Assistant Professor, Department of Microbiology, Montana State University	2007-
Assistant Professor, Department of Microbiology, Miami University	2003-2006
Research Staff Scientist, Oak Ridge National Laboratory	2001-2003
Post-doctoral Research Associate, Oak Ridge National Laboratory	2000-2001

Service

Editorial Board for <i>Applied and Environmental Microbiology</i>	2006-2008
<i>Ad Hoc</i> reviewer for <i>Environmental Microbiology</i>	2006-
<i>Ad Hoc</i> reviewer for <i>Microbial Ecology</i>	2006-
Invited by DOD to attend MBT workshop and draft strategic plan	2005
Invited by USDA to help develop road-map for a joint NSF-USDA program	2004

Publications (2005-2007 shown, 1 in revision, 2 in review, 5 in preparation)

34. Nowlin, W.H., M.J. González, M.H.H. Stevens, M.J. Vanni, **M.W. Fields**, J.J. Valente. Periodical cicadas affect dynamics, productivity and stability of woodland pond ecosystems. *Ecol. Letts.* (in press)
33. Clark, M.E., Q. He, Z. He, E.J. Alm, K.H. Huang, T.C. Hazen, A.P. Arkin, J.D. Wall, J. Zhou, and **M.W. Fields**. 2006. Temporal transcriptomic analyses of *Desulfovibrio vulgaris* Hildenborough during electron donor depletion. *Appl. Environ. Microbiol.* 72:5578-5588.
32. He, Q., K.H. Huang, Z. He, E.J. Alm, **M.W. Fields**, T.C. Hazen, A.P. Arkin, J.D. Wall, and J. Zhou. 2006. Energetic consequences of nitrite stress in *Desulfovibrio vulgaris* Hildenborough inferred from global transcriptional analysis. *Appl. Environ. Microbiol.* 72:4370-438.
31. Gao, W., Y. Liu, C.S. Giometti, S.L. Tollaksen, T. Khare, L. Wu, D.M. Klingeman, **M.W. Fields** and J. Zhou. 2006. Knock-out of a prohibitin-like protein results in alteration of iron metabolism, increased spontaneous mutation and hydrogen peroxide sensitivity in the bacterium *Shewanella oneidensis*. *BMC Genomics* 7:76
30. Wu, W. et al. 2006. Field-scale bioremediation of uranium in a highly contaminated aquifer II: reduction of U(VI) and geochemical control of U(VI) bioavailability. *Environ. Sci. Technol.* 40:3986-3995.
29. Dong, H., H. Jiang, G. Zhang, L. Chapman, B. Yu, and **M.W. Fields**. 2006. Microbial diversity in water and sediment of Lake Chaka: an inland hypersaline lake in northwestern china. *Appl. Environ. Microbiol.* 72: 3832-3845.

28. **Fields, M.W.**, C.E. Bagwell, S.L. Carroll, T. Yan, X. Liu, D.B. Watson, P.M. Jardine, C.S. Criddle, T.C. Hazen, and J. Zhou. 2006. Phylogenetic and functional biomarkers as indicators of bacterial community responses to mixed-waste contamination. *Environ. Sci. Technol.* 40:2601-2607.
27. Hwang, C., W.-M. Wu, T.J. Gentry, J. Carley, S.L. Carroll, C. Schadt, D. Watson, P.M. Jardine, J. Zhou, R.F. Hickey, C.S. Criddle, and **M.W. Fields**. 2006. Changes in bacterial community structure correlate with initial operating conditions of a field-scale denitrifying fluidized bed reactor. *Appl. Microbiol. Biotech.* 71:748-760.
26. **Fields, M.W.**, J. Schryver, C.C. Brandt, T. Yan, J. Zhou, and A.V. Palumbo. 2006. Confidence intervals for similarity values achieved from direct sequence determination of cloned SSU rRNA genes from environmental samples. *J. Microbiol. Methods* 65(1):144-152.
25. Dong, H., H. Jiang, G. Zhang, B. Yu, L.R. Chapman, C.R. Lucas, and **M.W. Fields**. 2006. Microbial diversity in water and sediment of Lake Qinghai: the largest inland saline lake in China. *Microbial Ecol.* 51:65-82.
24. Gentile, M., T. Yan, S.M. Tiquia, **M.W. Fields**, J. Nyman, J. Zhou, and C. S. Criddle. Stability in a denitrifying fluidized bed reactor. *Microbial Ecol.* (10.1007/s00248-006-9024-1)
23. Gu, B., W.-M. Wu, M.A. Ginder-Vogel, H. Yan, **M.W. Fields**, S. Fendorf, C.S. Criddle, and P.M. Jardine. 2005. Bioreduction of uranium in a contaminated soil column. *Environ. Sci. Technol.* 39:4841-4847
22. He, Z., L. Wu, **M.W. Fields** and J. Zhou. 2005. Comparison of microarrays with different probe sizes for monitoring gene expression. *Appl. Environ. Microbiol.* 71:5154-5162
21. **Fields, M.W.**, T. Yan, S.-K. Rhee, S.L. Carroll, P.M. Jardine, D.B. Watson, C.S. Criddle and J. Zhou. 2005. Impacts on microbial communities and cultivable isolates from groundwater contaminated with high levels of nitric acid-uranium waste. *FEMS Microbiol. Ecol.* 53:417-428
20. Wu, W., B. Gu, **M.W. Fields**, M. Gentile, S.M. Tiquia, J. Nyman, J. Zhou, C.S. Criddle. 2005. Characterization of uranium (VI) reduction by microbial biomass from a denitrifying fluidized bed reactor. *Bioremediation J.* 9.1-13
19. **Fields, M.W.** and J.B. Russell. 2005. Transcriptional regulation of β -glucanase activity in the ruminal bacterium, *Prevotella bryantii* B₁₄. *Curr. Microbiol.* 50:155-159
18. He, Z., L. Wu, X. Li, **M.W. Fields** and J. Zhou. 2005. Empirical establishment of oligonucleotide probe design criteria. *Appl. Environ. Microbiol.* 71:3753-3760
17. Liu, Y., W. Gao, L. Wu, X. Liu, T. Yan, E. Alm, A.P. Arkin, D.K. Thompson, **M.W. Fields**, and J. Zhou. 2005. Genomic expression profiling of *Shewanella oneidensis* MR-1 response to sodium salt stress. *J. Bacteriol.* 187:2501-2507