

## Matthew W. Fields – Biographical Sketch

Professor, Microbiology and Immunology, Montana State University, Bozeman, MT  
Director, Center for Biofilm Engineering, Montana State University  
Research Fellow, National Center for Genome Resources, Santa Fe, NM

### (a) Professional Preparation

Western Kentucky University	Biology/Chemistry	B.S., 1993
Mississippi State University	Biological Sciences	M.S., 1995
Cornell University	Microbiology	Ph.D., 2001
Oak Ridge National Laboratory	Environmental Sci.	Postdoc, 2001

### (b) Appointments

Director, Center for Biofilm Engineering	2015-
Interim Department Head, Microbiology & Immunology	2013-2014
Professor, Department of Microbiology and Immunology	2015-
Adjunct Research Fellow, National Center for Genome Resources, Santa Fe, NM	2012-
Associate Professor, Department of Microbiology, CBE, Montana State University	2011-
Assistant Professor, Department of Microbiology, CBE, MSU	2007-2010
Assistant Professor, Department of Microbiology, Miami University	2003-2006
Research Staff Scientist, Environmental Sciences Division, ORNL	2001-2003

### (c) Publications – 5 (105 total) most closely related to proposed work (h index=42)

Zelaya, A.J., A.E. Parker, K.L. Bailey, P. Zhang, J. Van Nostrand, N. Daliang, D.A. Elias, J. Zhou, T.C. Hazen, A.P. Arkin, and **M.W. Fields**. 2019. High spatiotemporal variability of bacterial diversity over short time scales with unique hydrochemical associations within a shallow aquifer. *Water Res.* 164:114917

Krantz, G.P., K. Lucas, E.L. -Wunderlich, L.T. Hoang, R. Avci, G. Siuzdak, and **M.W. Fields**. 2019. Bulk phase resource ratio alters carbon steel corrosion rates and endogenously-produced extracellular electron transfer mediators in a sulfate-reducing biofilm. *Biofouling* (in press)

Schweitzer, H., D. Ritter, J. McIntosh, E.P. Barnhart, A.B. Cunningham, D. Vinson, W. Orem, and **M.W. Fields**. 2019. Changes in microbial communities and associated water and gas geochemistry across redox gradients in coal beds: Powder River Basin, USA. *Geochim. Cosmochim. Acta* 245: 495-513

Smith, H.J., A.J. Zelaya, K.B. De León, R. Chakraborty, D.A. Elias, T.C. Hazen, A.P. Arkin, A.B. Cunningham and **M.W. Fields**. 2018. Impact of hydrologic boundaries on microbial planktonic and biofilm communities in shallow terrestrial subsurface environments. *FEMS Microbiol. Ecol.* 94:fiy191

He, Z., P. Zhang, L. Wu, A. Rocha, Q. Tu, Z. Shi, B. Wu, Y. Qin, J. Wang, Y.-Q. Yun, D. Curtis, D. Ning, J.D. Van Nostrand, L. Wu, Yunfeng Yang, Dwayne Elias, D. Watson, M. Adams, **M.W. Fields**, E. Alm, T.C. Hazen, P. Adams, A.P. Arkin, and J. Zhou. 2018. Microbial functional gene diversity predicts groundwater contamination and ecosystem functioning. *mBio* 9:e02435-17

### Additional Relevant Publications

McKay, L.J., M. Dlakić, **M.W. Fields**, T.O. Delmont, A. Murat Eren, Z.J. Jay, K.B. Klingel-Smith, D. Rusch, and W.P. Inskeep. 2019. Co-occurring genomic capacity for anaerobic methane metabolism and dissimilatory sulfite reduction discovered in the Korarchaeota. *Nat. Microbiol.* 4:614-622

McKay, L.J., R. Hatzenpichler, W.P. Inskeep, and **M.W. Fields**. 2017. Occurrence and expression of diverse methane cycling genes by multiple archaeal phyla in hot spring sediments. *Nature Sci. Reports* 7:7252

De Leon, K., G. Zane, V. Trotter, G. Krantz, A.P. Arkin, G. Butland, P. Walian, **M.W. Fields**, and J.D. Wall. 2017. Unintended laboratory-driven evolution reveals genetic requirements for biofilm formation by *Desulfovibrio vulgaris* Hildenborough. *mBio* 8:e01696-17

Briley, K.A., J.M. Connolly, C. Downey, R. Gerlach, and **M.W. Fields**. 2013. Taxis toward hydrogen gas by *Methanococcus maripaludis*. *Nature Sci. Rep.* 3:3140.

Momeni, B., K.A. Briley, **M.W. Fields**, and W. Shou. 2013. Strong inter-population cooperation leads to partner intermixing in microbial communities. *eLife*. 2:e00230

**(d) Synergistic Activities**

Editorial Board, *Biofilms* (Elsevier)

2019

Organizing Committee, Biofilms8

2018

DOE Panel Reviews

2015, 2016, 2017, 2018

Editorial Board for *Applied and Environmental Microbiology*

2006-2014

Specialty Editor; *Frontiers in Microbiology*

2011-2016