

# MONO LAKE MICROBIAL OBSERVATORY PUBLICATION LIST

Listed by date, updated 9 July, 2009

## Peer-Reviewed Publications

1. Hollibaugh, J.T., P.S. Wong, N. Bano, S.K. Pak, E.M. Prager and C. Orrego. 2001. Stratification of microbial assemblages in Mono Lake, California, and response to a mixing event. *Hydrobiologia* 466: 45-60. MCB 99-77886
2. Lucas, F. and J.T. Hollibaugh. 2001. Shifts in the composition of estuarine sediment bacterial assemblages in response to amendments with selenate and acetate. *Environmental Science and Technology* 35: 528-534. MCB 99-77886
3. Hoefft, S. E., F. Lucas, J.T. Hollibaugh, and R.S. Oremland. 2002. Characterization of bacterial arsenate reduction in the anoxic bottom waters of Mono Lake, California. *Geomicrobiology Journal* 19: 23-40. MCB 99-77886
4. Oremland, R.S., S.E. Hoefft, J.M. Santini, N. Bano, R.A. Hollibaugh and J.T. Hollibaugh. 2002. Anaerobic oxidation of arsenite in Mono Lake water and by a facultative chemoautotroph, strain MLHE-1. *Applied and Environmental Microbiology* 68: 4795-4802. MCB 99-77886
5. Humayoun, S., N. Bano and J.T. Hollibaugh. 2003. Phylogenetic composition of the bacterioplankton from an alkaline, hypersaline lake, Mono Lake, California. *Applied and Environmental Microbiology* 69:1030-1042. MCB 99-77886 and MCB 99-77901.
6. Carini, S.A., B. N. Orcutt, and Joye, S.B. 2003. Interactions between methane oxidation and nitrification in coastal sediments. *Geomicrobiology Journal* 20:355-374. MCB 99-77886
7. Steward, G., J.P. Zehr, R. Jellison, J.P. Montoya and J.T. Hollibaugh. 2004. Vertical distribution of nitrogen-fixing phylotypes in a meromictic hypersaline lake. *Microbial Ecology* 47: 30-40. MCB 99-77892, MCB 99-77886 and MCB 99-77901.
8. Jiang, S., G.F. Steward, R. Jellison, W. Chu, S. Choi. 2003. Abundance, distribution and diversity of viruses in an alkaline hypersaline lake, Mono Lake, California. *Microbial Ecology* 47: 9-17. MCB 99-77892 and MCB 99-77901.
9. Oremland, R.S., J.F. Stolz and J.T. Hollibaugh. 2004. The microbial arsenic cycle in Mono Lake, California. *FEMS Microbiology Ecology* 48: 15-27. MCB 99-77886
10. Giri, B.J., N. Bano and J.T. Hollibaugh. 2004. Distribution of RuBisCO genotypes along a redox gradient in Mono Lake, California. *Applied and Environmental Microbiology* 70:3443-3448. MCB 99-77886

11. Hoefft, S.E., T.R. Kulp, J.F. Stolz, J.T. Hollibaugh and R.S. Oremland. 2004. Dissimilatory arsenate reduction with sulfide as the electron donor: experiments with Mono Lake water and isolation of Strain MLMS-1, a chemoautotrophic arsenate-respirer. *Applied and Environmental Microbiology* 70: 2741-2747. MCB 99-77886
12. LeCleir, G.R., A. Buchan, and J.T. Hollibaugh. 2004. Chitinase gene sequences from diverse aquatic habitats reveal complex patterns of diversity. *Applied and Environmental Microbiology* 69: 6977-6983. MCB 99-77886
13. Hollibaugh, J.T., S. Carini, H. Gürleyük, R. Jellison, S.B. Joye, G. LeCleir, C. Meile, L. Vasquez and D. Wallschläger. 2005. Distribution of arsenic species in alkaline, hypersaline, Mono Lake, California and response to seasonal stratification and anoxia. *Geochimica et Cosmochimica Acta* 69:1925-1937. MCB 99-77886 and MCB 99-77901.
14. Scholten, J.C.M , S.B. Joye, J.T. Hollibaugh and J.C. Murrell. 2005. Molecular analysis of the sulfate reducing and Archaeal community in a meromictic lake (Mono Lake, California) by targeting 16s rRNA, *mcrA*, *apsA* and *dsrAB* reductase genes. *Microbial Ecology* 50: 29-39. MCB 99-77886
15. Poretsky, R.S., N. Bano, A. Buchan, G. LeCleir, J. Kleikemper, M. Pickering, W.M. Pate, M.A. Moran and J.T. Hollibaugh. 2005. Analysis of microbial gene transcripts in environmental samples. *Applied and Environmental Microbiology* 71: 4121-4126. MCB 99-77886
16. Zehr, J.P., M.J. Church and P.H. Moisaner. 2005. Diversity, distribution and biogeochemical significance of nitrogen-fixing microorganisms in anoxic and suboxic ocean environments. In: *Anoxic Basins*. Lev Neretin (Ed.). NATO Conference Series in Marine Sciences 38, pp 237-249. MCB 99-77892
17. Carini, S., N. Bano, G. LeCleir, and S.B. Joye. 2005. Patterns of aerobic methanotrophy and methanotroph community composition during seasonal stratification in a meromictic lake, Mono Lake, CA. *Environmental Microbiology* 7: 1127-1138. MCB 99-77886.
18. Nercessian, O., M.G. Kalyuzhnaya, S.B. Joye, M.E. Lidstrom, & L. Chistoserdova. 2005. Analysis of *fae* and *fhcD* genes in Mono Lake, California. *Applied and Environmental Microbiology* 71: 8949-8953. MCB 99-77886
19. Lin, J.-L., S.B. Joye, J.C.M. Scholten, H. Schafer, I.R. McDonald and J. Colin Murrell. 2005. Analysis of methane monooxygenase genes in Mono Lake suggests that increased methane oxidation activity may correlate with a change in methanotroph community structure. *Applied and Environmental Microbiology* 71: 6458-6462. MCB 99-77886
20. LeCleir, G.R. and J.T. Hollibaugh. 2006. Chitinolytic bacteria from alkaline, hypersaline Mono Lake, California. *Aquatic Microbial Ecology* 42: 255-264. MCB 99-77886.
21. Hollibaugh, J.T., C. Budinoff, R.A. Hollibaugh, B. Ransom and N. Bano. 2006. Sulfide oxidation coupled to arsenate reduction by a diverse microbial community

- in a soda lake. *Applied and Environmental Microbiology* 72: 2043-2049. MCB 99-77886
22. LeCleir, G.R., A. Buchan, J. Maurer, M.A. Moran and J.T. Hollibaugh. 2007. Comparison of chitinolytic enzymes from an alkaline, hypersaline lake and an estuary. *Environmental Microbiology* 9: 197-205. MCB 99-77886.
23. Budinoff, C.R. and J.T. Hollibaugh. 2007. Ecophysiology of a Mono Lake cyanobacterium. *Limnology and Oceanography* 52: 2484-2496. MCB 99-77886.
24. Poretsky, R.S., N. Bano, A. Buchan, J.T. Hollibaugh and M.A. Moran. 2006. Environmental Transcriptomics: A method to access expressed genes in complex microbial communities. In *Molecular Microbial Ecology Manual*, 3rd Ed. In press MCB 99-77886
25. Turicha, C.H., K.H. Freeman, M.A. Bruns, M. Contec, A.D. Jones and S.G. Wakeham. Submitted. Marine Archaeal lipid distributions: patterns and provenance in the water column. *Geochimica et Cosmochimica Acta*. MCB 99-77886 and MCB 99-77901.
26. Fisher, J.C., D. Wallschläger, B. Planer-Friedrich and J.T. Hollibaugh. 2008. Sulfur plays an unexpected role in the arsenic cycle of Mono Lake, CA. *Environmental Science and Technology* 42: 81-85. MCB 99-77886
27. Jørgensen, N.O.G., P. Engel, R. Jellison and J.T. Hollibaugh. 2008. Contribution of bacterial cell wall components to DOM in alkaline, hypersaline Mono Lake, California. *Geomicrobiology Journal* 25: 38-55. MCB 99-77886 and MCB 99-77901
28. Fisher, J.C. and J.T. Hollibaugh. 2008. Selenate-dependent anaerobic arsenite oxidation by a bacterium from Mono Lake, California. *Applied and Environmental Microbiology* 74: 2588-2594. MCB 99-77886
29. Budinoff, C.R. and J.T. Hollibaugh. 2008. Arsenite-dependent photoautotrophy by an *Ectothiorhodospira*-dominated consortium. *ISME Journal* 2:340-343. MCB 99-77886
30. Carini, S.C. and Joye, S.B. 2008. Nitrification in Mono Lake, California (USA): Activity and community composition during contrasting hydrological regimes. *Limnology and Oceanography*, 53: 2546-2557. MCB 99-77886
31. Kulp, T.R., Hoefft, S.E., Asao, M., Madigan, M.T., Hollibaugh, J.T., Fisher, J.C. Stolz, J. F., Culbertson, C. W., Miller, L. G. and R.S. Oremland. 2008. Arsenic(III) fuels anoxygenic photosynthesis in hot spring biofilms from Mono Lake, California. *Science* 321: 967-970. MCB 99-77886.
32. Oremland, R.S., J.F. Stolz, M. Madigan, J.T. Hollibaugh, T.R. Kulp, S.E. Hoefft, J. Fisher, L.G. Miller, C.W. Culbertson, M. Asao. 2009. Response to Comment on "Arsenic(III) Fuels Anoxygenic Photosynthesis in Hot Spring Biofilms from Mono Lake, California" *Science* 323:583. MCB 99-77886
33. Planer-Friedrich, B., J.C. Fisher, J.T. Hollibaugh, E. Süß and D. Wallschläger. 2009. Oxidative transformation of trithioarsenate along alkaline geothermal drainages:

abiotic versus microbially mediated processes. *Geomicrobiology Journal* 26:339–350. MCB 99-77886

## **Published Abstracts and Seminars**

1. Joye, S.B. Archean analogs: Methane biogeochemistry in an alkaline soda lake: Mono lake, California. Carnegie Institution of Washington Geophysical Laboratory, Washington DC, Sept 2000. MCB 99-77886.
2. Jiang, S., G. Steward, R. Jellison, S.B. Joye and J.T. Hollibaugh. Abundance and diversity of viruses in an alkaline hypersaline lake - Mono Lake, California. American Society of Limnology and Oceanography Annual Meeting, Albuquerque NM, February 2001. MCB 99-77886, MCB 99-77892 and MCB 99-77901.
3. Steward, G.F., Jellison, R.S., Hollibaugh, J.T., Joye, S.B., and Zehr, J.P. Detection of novel and diverse nitrogenase genes suggests potential for pelagic diazotrophy in alkaline, hypersaline Mono Lake. American Society for Limnology and Oceanography Annual Meeting, Albuquerque NM, February 2001. MCB 99-77886 MCB, 99-77892 and MCB 99-77901.
4. Joye, S.B., S. A. Carini, and B. Orcutt. Methane oxidation and the distribution of methanotrophs in the environment. American Society for Microbiology Annual Meeting, Atlanta GA, May 2001. MCB 99-77886.
5. Joye, S.B. Biogeochemistry of methane in alkaline, hypersaline Mono Lake. Seminar presented to the University of Georgia, Department of Microbiology, Athens GA, June 2001. MCB 99-77886.
6. Hoefl, S. E., F. Lucas, J.T. Hollibaugh, and R.S. Oremland. Characterization of bacterial arsenate reduction in the anoxic bottom waters of a meromictic, hypersaline, alkaline soda lake: Mono Lake, California. International Symposium on Environmental Biogeochemistry, Warsaw, Poland, August 2001. MCB 99-77886.
7. Joye, S.B., S. A. Carini, R. Jellison and J. T. Hollibaugh. Molecular ecology and biogeochemistry of methane cycling in an alkaline, hypersaline lake. International Symposium on Microbial Ecology, Amsterdam, the Netherlands, August 2001. MCB 99-77886.
8. Joye, S.B. Molecular biogeochemistry: Linking the distribution of microbes to their biogeochemical function in the environment. International Symposium on Environmental Biogeochemistry, Warsaw, Poland, August 2001. MCB 99-77886.
9. Humayoun, S., G. Leclair, N. Bano, J.T. Hollibaugh. Composition of bacterial assemblages from alkaline, hypersaline Mono Lake, California. International Symposium on Microbial Ecology, Amsterdam, the Netherlands, September 2001. MCB 99-77886.
10. Lucas, F.S., J. Switzer-Blum, R.S. Oremland, and J.T. Hollibaugh. Identification of mRNA differentially transcribed by *Sulfurospirillum barnesii* SES-3 during

- selenate versus nitrate respiration. International Symposium on Microbial Ecology, Amsterdam, the Netherlands, September 2001. MCB 99-77886.
11. Hollibaugh, J.T., G. Rocap, N. Ahlgren, S.W. Chisholm, J. Nelson and R.S. Jellison. An unusual *Synechococcus* from Mono Lake, California. American Society of Limnology and Oceanography Annual Meeting, Victoria, B.C., Canada, June 2002. MCB 99-77886.
  12. Roll, S.K. and R. Jellison. Seasonal variability in the deep chlorophyll maximum in hypersaline Mono Lake, California and the contribution of newly described *Picosystis Salinarum*. American Society of Limnology and Oceanography Annual Meeting, Victoria, B.C., Canada, June 2002. DEB95-08733, MCB99-77901.
  13. Stephens, A.Q., G.F. Steward and J.P. Zehr. Computer simulation of TRFLP using functional gene sequences and implications for microbial community analysis. American Society for Limnology and Oceanography Summer Meeting. Victoria, B. C. Canada, June 2002. MCB 99-77892
  14. Budinoff, C. and J.T. Hollibaugh. Ecology and physiology of a phylogenetically unique *Synechococcus* from Mono Lake. ASLO Aquatic Sciences Meeting. Salt Lake City, Utah, February 2003. MCB 99-77886.
  15. Carini, S.A. and S.B. Joye. Patterns of aerobic methane oxidation and methanotroph community composition during development of thermal stratification in Mono Lake, California. ASLO Aquatic Sciences Meeting. Salt Lake City, Utah, February 2003. MCB 99-77886.
  16. Giri, B.J., N. Bano and J.T. Hollibaugh. Phylogenetic diversity of RuBisCO gene along a redox gradient in Mono Lake, USA. ASLO Aquatic Sciences Meeting. Salt Lake City, Utah, February 2003. MCB 99-77886.
  17. Hollibaugh, J.T., S. Humayoun, N. Bano and R.E. Jellison. Diversity of bacteria in alkaline, hypersaline Mono Lake, California, during a period of meromixis. ASLO Aquatic Sciences Meeting. Salt Lake City, Utah, February 2003. MCB 99-77901 and MCB 99-77886.
  18. Joye, S.B., S.A. Carini, V. Samarkin, J. T. Hollibaugh, and R.S. Jellison. Spatial and seasonal patterns of the anaerobic oxidation of methane in Mono Lake, California.. ASLO Aquatic Sciences Meeting. Salt Lake City, Utah, February 2003. MCB 99-77901 and MCB 99-77886.
  19. Roll, S.K. and R. Jellison. The non-linear response of early instar *Artemia* development to food availability results in large variations in peak adult abundances in hypersaline Mono Lake, California. ASLO Aquatic Sciences Meeting. Salt Lake City, Utah, February 2003. DEB95-08733, MCB99-77901.
  20. Scholten, J.C.M, S.B. Joye, J.T. Hollibaugh, A.J.M. Stams and J.C. Murrell. Anaerobic degradation of glycine-betaine in Mono Lake, a moderately, hypersaline, alkaline environment. ASLO Aquatic Sciences Meeting. Salt Lake City, Utah, February 2003. MCB 99-77886.
  21. Steward, G. F., Zehr, J. P., Jenkins, B. D., Montoya, J. P., Jellison, R. S. and Hollibaugh, J. T. 2003. Diverse nitrogen-fixers, but undetectable nitrogen fixation

- in alkaline, hypersaline, meromictic Mono Lake, California. ASLO Aquatic Sciences Meeting. Salt Lake City, Utah, February 2003. MCB 99-77892, MCB 99-77901 and MCB 99-77886
22. Carini, S. and S.B. Joye. Seasonal variations in aerobic methane oxidation rates in Mono Lake (USA) as a function of geochemical variables and methanotroph community composition. AGU/EUG/EGU meeting Nice, France, April 2003. MCB 99-77886
  23. Joye, S.B., S. Carini, V. Samarkin, R. Jellison and J.T. Hollibaugh. Seasonal decoupling of sulfate reduction and anaerobic oxidation of methane in Mono Lake, California. AGU/EUG/EGU meeting Nice, France, April 2003. MCB 99-77886 and MCB 99-77901.
  24. Wallschläger, D., H. Gürleyük and J.T. Hollibaugh. Arsenic speciation and cycling in a permanently-stratified soda lake. 39<sup>th</sup> IUPAC Congress. Ottawa, Ontario Canada, August 2003
  25. Budinoff, C. and J.T. Hollibaugh. Ecology and physiology of a Mono Lake cyanobacterium. 11th International Symposium on Phototrophic Prokaryotes. Tokyo, Japan August 24th-29th, 2003. MCB 99-77886.
  26. LeCleir, G.R., A. Buchan, and J.T. Hollibaugh. Comparison of group I chitinase gene sequences from diverse environments: implications of environmental effects on extracellular enzymes. American Society of Limnology and Oceanography Annual Meeting, Savannah Georgia, June 12, 2004. MCB 99-77886.
  27. Ransom, B., N. Bano, C. Budinoff, R.A. Hollibaugh and J.T. Hollibaugh. Sulfide oxidation drives dissimilatory arsenate reduction in alkaline, hypersaline, Mono Lake, California. American Society of Limnology and Oceanography Annual Meeting, Savannah Georgia, June 12, 2004. MCB 99-77886.
  28. Smith A., N. Bano, M. Washington, and J.T. Hollibaugh. Vertical distribution of bacteria in sediment from Mono Lake, California. American Society of Limnology and Oceanography Annual Meeting, Savannah Georgia, June 12, 2004. MCB 99-77886.
  29. Davidson, L.A. and A.E. Davidson. The range of protists in Mono Lake, a hypersaline soda lake in the eastern Sierras. 36th Annual Midwest Protozoology Meeting. Univ. Chicago, IL, 24 April 2004. MCB 99-77901
  30. Fisher, Jen and J.T. Hollibaugh. Role of sulfide, selenate and nitrate in arsenite oxidation in Mono Lake, CA. American Geophysical Union Annual Meeting. San Francisco, CA, 13-17 December 2004. MCB 99-77886
  31. Hollibaugh J.T., S. Carini, H. Gürleyük, R. Jellison, S.B. Joye, G. LeCleir, C. Meile, L. Vasquez and D. Wallschläger. Thio-arsenic species in alkaline, hypersaline, meromictic Mono Lake, California. American Geophysical Union Annual Meeting. San Francisco, CA, 13-17 December 2004. MCB 99-77886

32. Analysis of microbial communities in a soda lake: Who is doing what with whom, and how do we know? Invited seminar, University of Tennessee, Department of Microbiology, Knoxville TN, 10 October, 2005. MCB 99-77886
33. Hollibaugh, J.T., C. Budinoff, R.A. Hollibaugh, B. Ransom and N. Bano. Sulfide oxidation coupled to arsenate- or nitrate-reduction by a diverse microbial community in a soda lake. Georgia Tech Microbial Ecology Symposium, Atlanta, GA. 30-31 March, 2006. MCB 99-77886
34. Hollibaugh, J.T., C. Budinoff, R.A. Hollibaugh, B. Ransom and N. Bano. Sulfide oxidation coupled to arsenate- or nitrate-reduction by a diverse microbial community in an arsenic-enriched soda lake. 11<sup>th</sup> International Symposium on Microbial Ecology, Vienna, Austria. 17-22 August, 2006. MCB 99-77886.
35. Budinoff, C.R. and J.T. Hollibaugh. Arsenite-dependent anoxygenic photosynthesis by bacteria from Mono Lake, California. AGU annual meeting, San Francisco, CA, 10-14 December, 2007. MCB 99-77886
36. Hollibaugh, J.T. Microbially-mediated arsenic geochemistry in an alkaline, hypersaline and meromictic lake. Invited seminar, Department of Microbiology, University of Georgia. 29 March, 2007. MCB 99-77886
37. Hollibaugh, J.T. Arsenic and Old Lakes. Seminar, Department of Marine Sciences, University of Georgia. 18 April 2007. MCB 99-77886
38. Joye, S. B., 2007. New insights into the biogeochemical dynamics of the anaerobic oxidation of methane. Invited Seminar, Department of Earth Sciences, University of Southern California, Los Angeles CA, October. Joye, S. B., 2007. Controls on the Anaerobic Oxidation of Methane in Hypersaline Habitats. Invited Seminar, Environmental Sciences and Engineering, California Institute of Technology, Pasadena CA, October.
39. Hollibaugh, J.T. Arsenic and Old Lakes. Invited Seminar, Department of Oceanography and Coastal Sciences, Louisiana State University, Baton Rouge LA, 30 November, 2007. MCB 99-77886
40. Hollibaugh, J.T. Arsenic and Old Lakes. Invited Seminar, Arsenic and Old Lakes. Invited Seminar, Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin Germany. 7 February, 2008. MCB 99-77886
41. Hollibaugh, J.T. Arsenic in Mono Lake - the importance of an unusual TEA in an extreme environment. China-US Workshop on Collaborative Research on Geomicrobiological Processes in Extreme Environments. China University of Geosciences - Beijing, China, Oct. 10th – 16th, 2008. MCB 99-77886
42. Hollibaugh, J.T. Arsenic and Old Lakes. Invited seminar, Program in Ecology, Evolution and Conservation Biology, Indiana University, 23 April 2009. MCB 99-77886