

CURRICULUM VITAE

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EDUCATION

- 1983 B.A. in Biology, University of California, Santa Cruz
1988 M.S. in Marine Sciences, University of North Carolina at Chapel Hill
1992 Ph.D. in Marine Sciences, University of North Carolina at Chapel Hill

RECENT PROFESSIONAL BACKGROUND

- 2002-present Research Associate, Institute of Marine Sciences, University of California, Santa Cruz, (courtesy adjunct appointment)
1997 Research Scientist, Exobiology Branch, NASA Ames Research Center, Moffett Field, California
1995-1997 Horn Point Environmental Laboratory Post-doctoral Fellow, Horn Point Environmental Lab, Cambridge, Maryland
1992-1995 Post-doctoral Researcher, Microsensor Group, Max Planck Institute for Marine Microbiology, Bremen, Germany
1988-1992 Research Assistant, Institute of Marine Sciences, University of North Carolina at Chapel Hill, Morehead City, NC

HONORS AND AWARDS

- 2003 Space Act and *NASA Tech Brief* Awards “SemanticOrganizer: A Semantic Hypermedia System for Team-based Distribution Information Sharing” (finalist for 2003 NASA Software of the Year Award)
1990 Planetary Biology Internship, NASA Ames Research Center
1989 Geological Society of America Graduate Student Research Grant
1988 Best Student Paper Award, AGU/ASLO Ocean Sciences Meeting, New Orleans, Louisiana

RESEARCH INTERESTS

General microbial ecology; benthic photosynthetic communities; ancient microbial communities and their extant representatives; microsensor technology; sediment optics; ultraviolet radiation effects on benthic photosynthesis; mass transport across the sediment water interface; nutrient cycling in microbial mat communities and other shallow water environments; benthic and planktonic nitrogen fixation; remote instrument control and collaboration technologies

PROFESSIONAL ORGANIZATIONS

- American Geophysical Union
American Society of Limnology and Oceanography
Phycological Society of America

PUBLICATIONS

- Dillon J.G., S.R. Miller, B.M. Bebout, M. Hullar, N. Pinel, D.A. Stahl 2009. Spatial and Temporal Variability in a Stratified Hypersaline Microbial Mat Community. *FEMS Microbiology Ecology* **68**:46-58.
- Potter, E.G., B.M. Bebout, and C Kelley 2009. Isotopic Composition of Methane and Inferred Methanogenic Substrates Along a Salinity Gradient in a Hypersaline Microbial Mat System. *Astrobiology* **9**:383-390.
- Kunin, V., J. Raes, J. K. Harris, J. R. Spear, J. J. Walker, N. Ivanova, C. von Mering, B. M. Bebout, N. R. Pace, P. Bork, and P. Hugenholtz. 2008. Millimeter-scale genetic gradients and community-level molecular convergence in a hypersaline microbial mat. *Molecular Systems Biology* **4**:198.
- Smith, J. M., S. J. Green, C. A. Kelley, L. E. Prufert-Bebout, and B. M. Bebout. 2008. Shifts in methanogenic community structure and function associated with long-term manipulation of sulfate and salinity in a hypersaline microbial mat. *Environmental Microbiology* **10**:386-394.
- Dillon J. G., S. Fishbain, S. R. Miller, B. M. Bebout, K. S. Habicht, S. M. Webb, and D. A. Stahl. 2007. High rates of sulfate reduction in a low-sulfate hot spring microbial mat are driven by a low level of diversity of sulfate-respiring microorganisms. *Applied and Environmental Microbiology* **73**:5218–5226.
- Fleming, E. D., B. M. Bebout, and R. W. Castenholz. 2007. Effects of salinity and light intensity on the resumption of photosynthesis in rehydrated cyanobacterial mat from Baja California Sur, Mexico. *Journal of Phycology* **43**:15-24.
- Kelley, C. A., L. E. Bebout, and B. M. Bebout. 2006. Changes in carbon cycling ascertained by stable isotopic analyses in a hypersaline microbial mat. *Journal of Geophysical Research-Biogeosciences* **111**:G04012.
- Moisander, P. H., L. Shiue, G. F. Steward, B. D. Jenkins, B. M. Bebout, and J. P. Zehr. 2006. Application of a *nifH* oligonucleotide microarray for profiling diversity of N₂-fixing microorganisms in marine microbial mats. *Environmental Microbiology* **8**: 1721-1735.
- Ley, R.E., J. K. Harris, J. Wilcox, J. R. Spear, S. R. Miller, B M. Bebout, J. A. Maresca, D. A. Bryant and N. R. Pace. 2006. Unexpected diversity and complexity from the Guerrero Negro hypersaline microbial mat. *Applied and Environmental Microbiology* **72**:3685-3695.
- Decker, K. L. M., C. S. Potter, B. M. Bebout, D. J. Des Marais, S. Carpenter, M. Discipulo, T. Hoehler, S. R. Miller, B. Thamdrup, K. Turk, and P. T. Visscher. 2005. Mathematical simulation of the diel O, S, and C biogeochemistry of a hypersaline microbial mat. *FEMS Microbiology Ecology* **52**: 377-395.
- Bebout, B. M., T. M. Hoehler, B. Thamdrup, D. Albert, S. P. Carpenter, K. Turk, M. Hogan, and D. J. Des Marais. 2004. Methane production by microbial mats under low sulfate concentrations. *Geobiology* **2**: 87-96.
- Miller, S. R., and B. M. Bebout. 2004. Variation in sulfide tolerance of photosystem II in phylogenetically diverse cyanobacteria from sulfidic habitats. *Applied and Environmental Microbiology* **70**: 736-744.
- Omoregie, E. O., L. L. Crumbliss, B. M. Bebout, and J. P. Zehr. 2004. Comparison of diazotroph community structure in *Lyngbya* sp. and *Microcoleus chthonoplastes* dominated microbial mats from Guerrero Negro, Baja, Mexico. *FEMS Microbiology Ecology* **47**: 305-318.
- Omoregie, E. O., L. L. Crumbliss, B. M. Bebout, and J. P. Zehr. 2004. Determination of nitrogen-fixing phylotypes in *Lyngbya* sp. and *Microcoleus chthonoplastes* cyanobacterial mats from Guerrero Negro, Baja, Mexico. *Applied and Environmental Microbiology* **70**: 2119-2128.

- Visscher, P. T., S. E. Hoeft, T. L. Surgeon, D. R. Rogers, B. M. Bebout, J. S. Thompson, Jr., and R. P. Reid. 2002. Microelectrode measurements in stromatolites: Unraveling the Earth's past?, p. 265-282. In M. Taillefert and T. F. Rozan [eds.], Environmental Electrochemistry: Analysis of Trace Element Biogeochemistry. American Chemical Society.
- Bebout, B. M., S. P. Carpenter, D. J. Des Marais, M. Discipulo, T. Embaye, F. Garcia-Pichel, T. M. Hoehler, M. Hogan, L. L. Jahnke, R. M. Keller, S. R. Miller, L. E. Prufert-Bebout, C. Raleigh, M. Rothrock, and K. Turk. 2002. Long term manipulations of intact microbial mat communities in a greenhouse collaboratory: Simulating Earth's present and past field environments. *Astrobiology* **2**: 383-402.
- Hoehler, T. M., D. B. Albert, M. J. Alperin, B. M. Bebout, C. S. Martens, and D. J. Des Marais. 2002. Comparative ecology of H₂ cycling in sedimentary and phototrophic ecosystems. *Antonie van Leeuwenhoek* **81**: 575-585.
- Hoehler, T. M., B. M. Bebout, and D. J. Des Marais. 2001. The role of microbial mats in the production of reduced gases on the early Earth. *Nature* **412**: 324-327.
- Visscher, P. T., R. P. Reid, and B. M. Bebout. 2000. Microscale observations of sulfate reduction: Correlation of microbial activity with lithified micritic laminae in modern marine stromatolites. *Geology* **28**: 912-922.
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- Bebout, B. M., and F. Garcia-Pichel. 1995. UVB-induced vertical migrations of cyanobacteria in a microbial mat. *Applied and Environmental Microbiology* **61**: 4215-4222.
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- Paerl, H. W., B. M. Bebout, and L. E. Prufert. 1989. Naturally occurring patterns of oxygenic photosynthesis and N₂ fixation in a marine microbial mat: Physiological and ecological ramifications, p. 326-341. In Y. Cohen and E. Rosenberg [eds.], *Microbial Mats: Physiological Ecology of Benthic Microbial Communities*. American Society for Microbiology.
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