

## **LTER Microbial Ecology**

Research and interest in microbial studies is extensive within the Long Term Ecological Research (LTER) Network program of the National Science Foundation. A 1999 document titled "LTER Research in Microbial Ecology" was compiled to list some of the microbial ecology interests of the LTER sites. A White Paper on LTER efforts toward Microbial Observatories was also written in 1999 by a committee of LTER researchers. Potential collaborations exist with the NSF Center for Microbial Ecology at Michigan State University. Potential collaborations include synthesis and cross site comparisons, applying DNA chip technologies, linking informatics efforts, graduate training and international research.

### **Microbial Observatories**

The National Science Foundation, Directorate for Biological Sciences (BIO), runs the Program on Microbial Observatories. The long-term goal of this activity is to develop a network of sites or "microbial observatories" to discover novel microorganisms, microbial consortia, communities, activities and other novel properties, and to study their roles in diverse environments. Individual investigators or teams of investigators are encouraged to develop and conduct research at a site or habitat dedicated to discovery and study of these novel microbes over time and across environmental gradients. Development and application of new experimental approaches to these studies, including the use of genomic and functional genomic methods, is strongly encouraged. A full listing of funded Microbial Observatories can be found at: <http://www.nsf.gov/bio/award.htm#mcb>

There are currently 9 LTER research projects funded by NSF's program in Microbial Observatories:

- \* (MCB-9977933) Diversity of Nitrogen-Cycling Microorganisms at the H.J. Andrews LTER PI: David Myrold - Web page at: [http://www.css.orst.edu/HJA\\_mo/default.html](http://www.css.orst.edu/HJA_mo/default.html)
- \* (MCB-9977882) Observing Patterns of Prokaryotic Diversity along Land use Gradients of the CAP LTER PI: Fred Rainey
- \* (MCB-9977907) Spatial Scales of Genetic and Phenotypic Diversity Among Streptomycetes in Native Soils (takes place at Cedar Creek LTER) - PI: Linda Kinkel - Web pages at: <http://www.cedarcreek.umn.edu/microbo.html> and <http://www.cedarcreek.umn.edu/microbo/>
- \* (MCB-0084223) Microbial Biogeochemistry and Functional Diversity across the Forest-Tundra Ecotone in the Rocky Mountains (Niwot Ridge LTER) - PI: Steve Schmidt - Web Page at: <http://spot.colorado.edu/~schmidts/Microbial%20Observatory/microbialobs.html>
- \* (MCB-9977903) A Microbial Observatory for the Northern Temperate Lakes Long Term Ecological Research Site - PI: Eric Triplett - Web page at: <http://microbes.limnology.wisc.edu/>
- \* (MCB-9977897) Microbial Observatories: Salt Marsh Microbes and Microbial Processes: Sulfur and Nitrogen (Plum Island LTER) - PI: John Hobbie- Temporary Internet Page at: <http://intranet.lternet.edu/archives/documents/reports>

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\* (MCB-0084164) Prokaryotic Diversity of a Salt Marsh/Estuarine Complex at the University of Georgia Marine Institute, Sapelo Island (Georgia Coastal Ecosystems LTER) PI: Mary Ann Moran Web - Web pages at: <http://simo.marsci.uga.edu/>

\* (MCB-0132085) Microbial Observatories: Collaborative Research: A Cold Microbial Observatory: Collaborative Research in an Alaskan Boreal Forest Soil (Bonanza Creek LTER) PI: Jo Handelsman

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(MCB-0237335) Microbial Observatories: Collaborative Research: Microbial Diversity and Function in the Permanently Ice-Covered Lakes of the McMurdo Dry Valleys, Antarctica (McMurdo Dry Valleys LTER) PI: John Priscu - Web Pages at: <http://serc.carleton.edu/microbelife/microobservatories/mcmurdo.html> and <http://mcm-dvlakesmo.montana.edu/>

The National Science Foundation hosted a meeting of Microbial Observatory Principal Investigators in September of 2002. A meeting summary and abstracts of Microbial Observatory Research can be found at the Sapelo Island Microbial Observatory Website, or directly here.

For further information, see the LTER Network Newsletter Article on Microbial Observatories.

There are also LTER related projects funded at sites such as Mono Lake, led by Georgia Coastal Ecosystems LTER pi, James Hollibaugh and others - Web pages at: <http://www.monobasinresearch.org/research/> and <http://www.monolake.org/newsletter/00winter/21.htm>