

**Award ID: OCE0221900 Field Testing of a New Sensor to Monitor Environmental Conditions within the Walls of Active Sulfide Structures (Kelley, Baross, Delaney)**

**Field Program: Sulfide Microbial Incubator Cruise May 23-June 7, 2004 (AT11-13)**

During this field program, as a part of the Kelley award we

- 1) Collected Imagenex surveys of the MEF and Mortha Hydrothermal Fields:  
**DMO Status:** These data are submitted to DMO and have been processed by V. Ferrini.
- 2) Recovered a sulfide microbial incubator in the walls of an active black smoker chimney called Roane: temperature data collected from incubator for 2003-2004 period, microbial material collected from incubator:  
**DMO Status:** Temperature data submitted to DMO - data asked to be restricted until ~ September 09-awaiting submittal of a masters student paper, and two postdoc manuscripts.  
**Products:**
  - 1) Microbiological results published in M. Schrenk dissertation: Exploring the diversity and physiological significance of attached microorganisms in rock-hosted deep-sea hydrothermal environments; Ph.D. Dissertation, University of Washington, pp. 196, 2005
  - 2) Preliminary temperature data results summarized in Ridge 2000 Events Newsletter, Spring 2005, V.3, 7-8, 2005.
  - 3) Entire year long temperature record for all sensors illustrated and discussed in Cruise Report: Sulfide-Microbial Incubator Cruise R/V Atlantis-Alvin AT11I-13, May 23-June 7, 2004.
- 3) Recovered sulfide microbial data logger (only) from the black smoker called Hot Harold  
**DMO Status:** Temperature data submitted to DMO
- 4) Deployed a Hobo in Puffer 8/14/03/ Recovered 5/31/04  
**DMO Status:** Temperature data submitted to DMO
- 5) Conducted CTD operations at two areas north of Sasquatch: CTD data provided to  
**DMO Status:** from WHOI database
- 6) Cleaned up Main Endeavour Field and Deployed new markers at all major vent structures: **DMO Status:** X-Y locations, depth, heading and comments of location to DMO in cruise report (Appendix 1); map image with location provided in cruise report.

**Expected data Products and Delivery Date:** Year-long temperature records of three discrete chambers in the incubator recovered from Roane, coregistered with 16S sequencing results, biofilm analyses, and QPCR analyses will be included in a manuscript now in preparation with anticipated submittal date of September 2009

(Kelley, Girguis, Lin, Baross and Schrenk). The manuscript will be submitted either to PNAS or to Applied Environmental Microbiology. Two additional manuscripts are in prep by Peter Girguis's postdoc, Eric Cordes, and it is anticipated that they will be submitted this summer/early fall. Microbial data will be submitted to GenBank.