Enrichment of Alkaliphilic Anaerobes From a Terrestrial Serpentinization Site. L. J. Bird[1], G. Wanger[1,2,3], and K. H. Nealson[1] University of Southern California, Department of Earth Science, 825 Bloom Walk SHS 562, Los Angeles, CA, [2]California Institute of Technology, Pasadena, CA. [3] Jet Propulsion Laboratory, Pasadena, CA

The Cedars, located in Northern California, is an active serpentinization site. The spring water at the surface is at pH 11 to 12, with a redox potential of -500 to -700 mV. All the springs at the site containe dissolved hydrogen and methane; some of the springs include fluids from the Franciscan Subduction complex, and contain volatile organic compounds as well. This study focuses on enriching anaerobic organisms from this site with a focus on organisms from deeper groundwater sources; using a minimal medium with low concentrations of nutrients, strict anaerobic conditions, a variety of metabolites, and a combination of batch and reverse flow column culturing techniques, we have succeeded in propagating anaerobic amino acid fermenting organisms, as well as potential iron and sulfur reducing bacteria.