

**ASLO 2007 Aquatic Sciences Meeting  
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**TRACE METALS, MICROBIAL PROCESSES, AND  
BIOGEOCHEMICAL CYCLES THROUGH SPACE  
AND TIME**

**ABSTRACT SUBMISSION DEADLINE: OCTOBER 3, 2006**

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Trace metals play an important role in structuring aquatic microbial communities by virtue of their function as essential micronutrients and toxins. Modern environments show marked spatial variability in trace metal bioavailability, and over geologic time scales changes in Earth's redox state have dramatically affected trace metal geochemistry. Both of these gradients are hypothesized to constrain the selection of elements for biological usage in microbial communities; however, the interaction between bioinorganic and environmental chemistry is only beginning to be understood, and due to the complex set of feedback cycles involved a multidisciplinary approach is warranted. Evidence from the rock record examined synergistically with physiological and genomic data on extant organisms will be required to fully appreciate and understand the evolution of bioinorganic chemistry, including the modern employment of novel metalloenzymes (eg. utilizing metals such as Ni, W, Cd, V). Current studies of trace elements and their biogeochemical cycles are taking advantage of molecular-level knowledge of trace element speciation, new stable isotope analytical techniques, and increasingly sophisticated field incubation methods. At the same time, the availability of partial and complete genomic information for model organisms and microbial assemblages is enabling researchers to elucidate the function of trace elements at the organism and ecosystem level. We invite a wide range of papers, with an aim to engage researchers from diverse fields interested in synthesis of the information in this emerging field, which embraces biochemistry, paleoceanography, molecular genomics, inorganic chemistry, microbiology, and geochemistry. Topics will include metal speciation and bioavailability, biogenic metal chelating agents, metalloenzymes, metals as limiting micronutrients or toxins, the role of microbes in trace element transformations, and genomic studies of metal function, acquisition or cellular homeostasis.

Online Abstract Submission:

<https://www.sgmeet.com/aslo/santafe2007/startprocess.htm>