SOLAR SYSTEM SITES: ICE AND OCEAN WORLDS:
SEEKING EVIDENCE OF HABITABLE CONDITIONS AND
LIFE ACTIVITY IN SERPENTINIZING SYSTEMS
10:15 a.m. Arizona Ballroom D

Chairs: Alexis Templeton
        Beth Orcutt

10:15 a.m. McColloM T. M. *
Experimental Constraints on Rates of Hydrogen and Methane Generation in
Serpentinizing Environments [#3226]
Results of recent laboratory experiments indicate that generation of hydrogen and methane is very sluggish in
low temperature serpentinizing environments.

Schaffer S. R. Bach W. Boetius A.
Oases for Life in Ice Covered Oceans [#3201]
We present results from a 2016 robotics-based expedition to the ice-covered Arctic Ocean that reveal evidence
for serpentinizing seafloor hydrothermal activity.

10:45 a.m. Orcutt B. N. * D’Angelo T. Labonté J. Goordial J. Bergenthal M. Freudenthal T. Lilley M.
Früh-Green G. IODP Expedition 357 Science Party
Microbial Activity in the Serpentinizing Subsurface of Atlantis Massif: Initial Results from IODP
Expedition 357 [#3284]
Deep biosphere results from the serpentinizing subsurface of Atlantis Massif from IODP Expedition 357.

11:00 a.m. Rempfert K. R. * Miller H. M. Bompad N. Nothaft D. Matter J. M. Kelemen P.
Fierer N. Templeton A. S.
Geologic Constraints on Microbial Dynamics in a Subsurface Serpentinite Ecosystem [#3370]
We studied microbial diversity in the subsurface of the Samail Ophiolite to shed insight into how communities
vary within serpentinites as controlled by geology.

11:15 a.m. Twing K. I. * Crespo-Medina M. Brazelton W. J. Sanchez-Murillo R. Schrenk M. O.
Expression of Metabolic Pathways in Microbial Communities from a Tropical
Serpentinizing Environment [#3213]
This research assesses the metabolic potential and expression of microbial communities in a continental,
tropical site of serpentinization.

11:30 a.m. Seyler L. M. * Hoehler T. McColloM T. Kubo M. Sabuda M. Williams L. Schrenk M.
Global Metabolomics as a Means of Linking Microbial Activities and Their Biogeochemical Consequences in
Serpentinizing Systems [#3287]
Untargeted metabolomics was used to characterize intracellular and aqueous metabolites from biomass samples
obtained from an actively serpentinizing habitat.

11:45 a.m. Blank J. G. * Etiope G. Stamenković V. Rowe A. R. Kohl I. Li S. Young E. D.
Methane at the Aqua de Ney Hyperalkaline Spring (N. California USA), a Site of
Active Serpentinization [#3608]
We present new results of methane isotopologues from Aqua de Ney, a site of active serpentinization, and
discuss methane as a biomarker in the search for life.

12:00 p.m. Rowe A. R. * Yoshimura M. LaRowe D. E. Bird L. J. Amend J. P. Hashimoto K.
Nealson K. H. Okamoto A.
In Situ Electrochemical Enrichment and Isolation of a Magnetite-Reducing Bacterium from a high pH
Serpentinizing Spring [#3134]
This report provides evidence of the in situ activity of microbes using extracellular substrates as sinks for
electrons in a terrestrial serpentinizing spring.

12:15 p.m. Lunch