Tuesday, May 17, 2016
BIOSIGNATURES AND ENVIRONMENTS II:
HOT SPRINGS AND IRON-RICH DEPOSITS
1:30 p.m. Regency AB

Times include a 5 minute discussion at the conclusion of each presentation.

Chairs: **David Des Marais**
Jack Farmer
Anna-Louise Reysenbach

1:30 p.m. Campbell K. A. * Guido D. M. Farmer J. D. Van Kranendonk M. J. Ruff S. W. Westall F.
Tracing Hot-Spring Facies and thier Geothermally Silicified Microbial Textures into the Geologic Record: Relevance for Mars Biosignature Recognition **[#2023]**
Siliceous hot-spring deposits (sinters) in terrestrial volcanic terrains preserve robust microbial textures, owing to early mineralization, in the geologic record as far back as 3.48 billion years ago. Some resemble features at Columbia Hills.

1:50 p.m. Van Kranendonk M. J. * Djokic T. Campbell K. A. Walter M. R. Oto T. Nakamura E.
Earliest Life on Earth Preserved in Hotspring Deposits: Evidence from the 3.5 Ga Dresser Formation, Pilbara Craton, Australia, and Implications for the Search for Life on Mars **[#2011]**
A variety of biosignatures preserved in hotspring facies from the c. 3.5 Ga Dresser Formation, Australia, lends support to an origin of life in terrestrial hotsprings, and have profound implications for the search for life on Mars.

2:10 p.m. Jahnke L. L. * Parenteau M. N. Farmer J. D.
Organic Biomarker Preservation in Silica-Rich Hydrothermal Systems with Implications to Mars **[#2083]**
Microbial community structure and preservation of organic matter in siliceous hydrothermal environments is a critical issue given the discovery of hydrothermal vents and silica on Mars. Here we discuss preservation of cyanobacterial biomarker lipid.

2:30 p.m. Break

3:00 p.m. Potter-McIntyre S. L. * Williams J. Phillips-Landers C. O'Connell L.
Progressive Diagenetic Alteration of Macro- and Micro-Scopic Biosignatures in Ancient Springs and Spring-Fed Lacustrine Environments **[#2005]**
Microscopic and macroscopic biosignatures in modern spring deposits are compared with the Quaternary and Jurassic examples to show how these features are progressively altered and preserved on geologic time scales.

3:20 p.m. Parenteau M. N. * Jahnke L. L. Bristow T. F. Som S. M. Des Marais D. J. Farmer J. D.
Preservation of Organic Compounds in Circumneutral Iron Deposits **[#2076]**
We are investigating the capture and retention of microbial biosignatures in modern circumneutral Fe springs. The aim is to characterize the taphonomy of the lipid biomarkers in this Fe-rich system.

3:40 p.m. Williams A. J. * Sumner D. Y. Eigenbrode J. L. Wilhelm M. B. Cook C. L. Mahaffy P. R.
Physical and Molecular Biosignature Preservation in Hydrous Ferric Oxides: Implications for Detection wtih MSL and Future Missions **[#2015]**
Physical and molecular biosignature preservation in modern to 1000s-of-years-old iron-bearing environments and their potential for detection by instruments onboard the Curiosity rover and future surface missions.

4:00 p.m. SESSION DISCUSSION

5:00 p.m. Session Adjourns