

Meetings at a Glance

Sunday, 12 October 2008

5:00 p.m. – 7:00 p.m. Welcome Reception

Monday, 13 October 2008

9:00 a.m. – 9:30 a.m. Conveners Introduction
9:30 a.m. – 10:30 a.m. Plenary Session I
10:30 a.m. – 11:00 a.m. Coffee Break
11:00 a.m. – 1:00 p.m. Oral Sessions
1:00 p.m. – 2:00 p.m. Lunch (On your own)
2:00 p.m. – 4:00 p.m. Oral Sessions
4:00 pm. – 4:30 p.m. Coffee Break
4:30 p.m. – 5:30 p.m. Open Discussion Session

Tuesday, 14 October 2008

8:30 a.m. – 9:30 a.m. Plenary Session II
9:30 a.m. – 10:00 a.m. Coffee Break
10:00 a.m. – 12:00 p.m. Oral Sessions
12:00 p.m. – 1:00 p.m. Lunch (On your own)
1:00 p.m. – 3:00 p.m. Oral Sessions
3:00 p.m. – 3:30 p.m. Coffee Break
3:30 p.m. – 6:00 p.m. Oral Sessions
7:00 p.m. – 9:00 p.m. Gala Dinner

Wednesday, 15 October 2008

8:30 a.m. – 9:30 a.m. Plenary Session III
9:30 a.m. – 10:00 a.m. Coffee Break
10:00 a.m. – 12:00 p.m. Oral Sessions
12:00 pm – 1:00 p.m. Lunch (On your own)
1:00 p.m. – 3:00 p.m. Oral Sessions
3:00 p.m. – 3:30 p.m. Coffee Break
3:30 p.m. – 5:30 p.m. Oral Sessions
6:30 p.m. – 8:30 p.m. Poster Session

Thursday, 16, October 2008

8:30 a.m. – 10:00 a.m. Oral Sessions
10:00 a.m. – 10:30 a.m. Coffee Break
10:30 a.m. – 12:30 p.m. Wrap-up Session

Program Overview

Sessions and events will take place at The Eastland Park Hotel, Portland, ME. The Registration/Information Desk will be in the Eastland Ballroom foyer throughout the conference.

SUNDAY, 12 OCTOBER

5:00 p.m. – 7:00 p.m. ♦ **Welcome Reception** ♦ Gallery Room. All meeting attendees are invited to attend this kick-off event. Enjoy a relaxing evening with friends and colleagues. Complimentary hors d'oeuvres will be provided and drinks will be available for purchase.

MONDAY, 13 OCTOBER

9:00 a.m. **Welcome and Opening Remarks** ♦ Eastland Ballroom
Co-Conveners: Lee Slater and Estella Atekwana

9:30 a.m. **Plenary Session I**

D Lovley *Exploiting Microbe-Electrode Interactions for Environmental Restoration*

10:30 a.m. **Coffee Break**

Session I: Direct Signatures: Part I
Chair: Rossbach/Gorby

11:00 a.m. **Y. Gorby** *Bacterial Nanowires and Long Range Electron Transfer*

11:30 am. **D A Bazylinski** *Construction and Significance of the Magnetosome Chain in Magnetotactic Bacteria*

12:00 p.m. **G Z Abdel Aal** *Electrical Properties of Bacteria in Sand Columns: Live vs. Dead Cells*

12:30 p.m. **C A Davis** *Investigating the Effect of Microbial Growth and Biofilm Formation on Seismic Wave Propagation in Sediment*

1:00 p.m. Lunch (On your own)

Session I: Direct Signatures: Part II

2:00 p.m. **C Prodan** *Cellular dielectric spectroscopy for biological applications*

- 2:30 p.m. **T A Kendall** *Resolving Biological IP Mechanisms With Molecular-Scale, Surface Sensitive Force Microscopy Techniques*
- 3:00 p.m. **D Ntarlagiannis** *The low frequency response of artificial biofilms*
- 3:30 pm. **Y Pan** *Magnetic Properties of Magnetic Minerals Produced by Magnetotactic Bacteria and Their Contribution to Sedimentary Magnetism*
- 4:00 p.m. Coffee Break
- 4:30 p.m. **Open Discussion Session**

TUESDAY, 14 OCTOBER

- 8:30 a.m. **Plenary Session II**
Karl O. Stetter *Hyperthermophilic Life*
- SESSION II: Redox Signals: Part I**
- 9:30 a.m. **Coffee Break**
- 10:00 a.m. **Introduction – Redox Signals**
Chair: Revil/Morgan
- 10:30 a.m. **G K Druschel** *Voltammetric Electrodes and the Delineation of Detailed Microbial Redox Chemistry over Fine Spatial and Temporal Scales.*
- 11:00 a.m. **E E Roden** *Quantitative Interpretation of Biogeochemical Processes Associated with In Situ Contaminant Remediation*
- 11:30 a.m. **A R Revil** *A general theory of the relationship between redox potential and self-potential for abiotic and biotic systems. Forward modeling and inversion*
- 12:00pm Lunch (On your own)
- Session II: Redox Signals: Part II**
- 1:00 p.m. **K H Williams** *Biogeophysics and the Self-Potential Method: The Value of the Galvanic Response*
- 1:30 p.m. **F Freund** *Electric Currents Flowing Through Rocks Oxidizing Water to Hydrogen Peroxide*

- 2:00 p.m. **D A Elias** *Does Extracellular Electron Transfer and Metal Reduction Occur via Proteinaceous Appendages in Desulfovibrio vulgaris?*
- 2:30 p.m. **C Zhang** *A Comparison of Electrode Potential Signals and Self-potential Signals in Microbial Induced Sulfate Reducing Environments*
- 3:00 p.m. **Coffee Break**
- Session III: Extreme Environments**
- 3:30pm **Introduction – Extreme Environments**
Chair: Knight/Nelson
- 4:00 p.m. **B B Jørgensen** *The Mystery of Deep Subsurface, Slow-Growing Microorganisms*
- 4:30 p.m. **J L Houghton** *Modeling Environmental Controls on Microbial Biogeography in Seafloor Hydrothermal Vent Systems*
- 5:00 p.m. **C Ruppel** *Methane Hydrates and Methane Seeps: The Potential of Biogeophysical Measurements for Identifying Microbial Hotspots*
- 6:30 p.m. Gala Dinner ♦ Longfellow Ballroom**

WEDNESDAY, 15 OCTOBER

- 8:30 a.m. **Plenary Session III**
- George W. Luther** *Voltammetric solid state (micro)electrodes as in situ chemical sensors to understand microbial processes: from sediments and microbial mats to hydrothermal vents.*
- 9:30 a.m. **Coffee Break**
- Session III: Microbe-Mineral Transformations: Part I**
- 10:00 a.m. **Introduction – Microbe-Mineral Transformations**
Chair: Brantley/Yee
- 10:30 a.m. **K Singha** *Moving Toward Quantifying Kinetics in the Field: Where We Are and What We Need*

11:00 a.m. **J Ajo-Franklin** *Using Synchrotron Micro-CT To Monitor Microbially-Induced Calcite Precipitation on the Pore Scale*

11:30 a.m. **J T DeJong** *Utility of Geophysical Methods for Real-Time Monitoring Bio-Mediate Ground Improvement Processes*

12:00 p.m. Lunch (On your own)

Session III: Microbe-Mineral Transformations: Part II

1:00 pm. **A Englert** *Field Scale Biostimulation: Understanding Induced Feedbacks Between Subsurface Biogeochemical Transformations and Physical Properties of the Subsurface*

1:30 p.m. **L Li** *Effects of Solid Phase Transformation and Biomass Accumulation on Physical Properties of Porous Media During Uranium Bioremediation at Rifle, Colorado*

2:00 p.m. **J. Carlos Santamarina** *Bio-Mediated Processes in Soils - Implications and Geophysical Monitoring*

2:30 p.m. **Y Wu** *Geophysical signatures from calcite precipitation driven by urea hydrolysis*

3:00 p.m. **Coffee Break**

Session IV: Contaminated Land: Part I

3:30 p.m. **Introduction – Contaminated Land**
Chair: Hubbard/Kalin

4:00 p.m. **B Minsley** *Interpretation of self-potential data in contaminated environments*

4:30 p.m. **J Chen** *A state-space Bayesian framework for estimating biogeochemical transformations using time-lapse geophysical data*

5:00 p.m. **S Rossbach** *Geoelectric Signatures as a Guide for Microbiological Sampling During Bioremediation of Petroleum-Contaminated Sites*

6:30 p.m. **Poster Session** ♦ Nevelson/Greenhouse Room

B-01 - V Che-Alota *Using Geophysical Signatures to Investigate Temporal Changes due to Source Reduction in the Subsurface Contaminated with Hydrocarbons*

B-02 - J Deparis *Self potential measurement can be detect the microbial activities in contaminated site: a sandy box experiment*

B-03 - T McGee *Biogeophysics in the Context of Natural Gas Hydrates: Northern Gulf of Mexico*

B-04 - D R Glaser *A Summary of Recent Geophysical Investigations Performed at the Department of Energy Hanford Nuclear Facility*

B-05 - K Keating *Random walk simulations of the nuclear magnetic resonance response to changes in iron mineralogy*

B-06 - L Lazzari *Spatial variability of soil root zone properties using electrical imaging techniques in a tilled peach orchard system in Mediterranean semi-arid climate*

B-07 - C Marliere *Study of cyanobacteria films by local electric and electro-chemical investigations.*

B-08 - P C Schillig *Time-lapse GPR Monitoring of Enhanced Biological Activity in a Sandbox Reactor*

B-09 - A B Regberg *Interpreting Changes in Fluid Conductivity Due to the Reductive Dissolution of Iron Oxides*

B-10 - N Schwartz *The Influences of a Different Conductive Fluids Resulting From NAPL Biodegradation on the Bulk Electrical Conductivity of Porous Media – Laboratory Experiment and Numerical Simulation*

B-11 - K P Singh *SP and IP Monitoring of Biogeochemical Evolution and Activity of SRBs in a Simplified Winogradsky Column*

B-12 - R J Versteeg *Cyberinfrastructure for biogeophysical monitoring*

B-13 - K E Wright *Use of Electrical Methods to Predict Changes in Properties of Porous Media*

B-14 - S Hubbard *Geophysical Signatures of Remediation Amendments vs. Microbially-Mediated Transformations*

THURSDAY, 16 OCTOBER

Session IV: Contaminated Land: Part II

8:30 a.m. **Introduction – Contaminated Land**
Chair: Hubbard/Kalin

9:00 a.m. **V Naudet** *The Bio-Geobattery Model: a Contribution to Explain Self-Potential Signals on Contaminated Sites?*

9:30 a.m. **M L Rijal** *Magnetic Properties of Hydrocarbon Contaminated Sediment and Their Linkage with Sedimentary and Geomicrobiological Parameters at the Former Military Air Base Hradcany (CZ)*

10:00 a.m. **L Slater** *Detection of Microbial-Driven Precipitation of Elemental Selenium Using Geoelectrical and Electrode Potential Signatures*

10:30 a.m. Coffee Break

11:00 a.m. Wrap-up Session