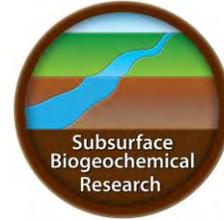




**TES/SBR Joint Investigators Meeting  
May 13-15, 2013  
Bolger Center, Potomac, MD**



**Monday, May 13, 2013**

7:00-8:30pm **Meeting Check In (Franklin Building)**

**Tuesday, May 14, 2013**

6:30-8:00am **Breakfast (Osgood Building)**

7:00-8:00am **Meeting Check In (Franklin Building)**

8:00-9:35am **Overview of Programs and Strategic Directions (Franklin Building)**

**Mike Kuperberg**

8:00-8:05am Welcome and Introductory Comments.....M. Kuperberg

8:05-8:20am BER Programs.....S. Weatherwax

8:20-8:35am CESD Programs & Strategic Plan.....G. Geernaert

8:35-8:55am TES Program Goals, Objectives, Program Structure and Highlights.....D. Stover

8:55-9:15am SBR Program Goals, Objectives, Program Structure and Highlights.....P. Bayer

9:15-9:35am GSP Program Overview.....J. Graber

9:35-10:00am **Break**

10:00-12:00pm **Plenary Session I – Research and Simulation across Scales**

**David Lesmes**

10:00-10:30am NGEE-Arctic: Migrating knowledge across scales to improve  
climate prediction.....P. Thornton

10:30-11:00am Modeling the planets microbiome and its feedback on climate.....J. Gilbert

11:00-11:30am Advanced characterization and analyses of complex microbial  
communities.....J. Banfield

11:30-12:00pm The biomolecular and genetic basis of mercury methylation.....J. Parks

12:00-2:00pm **Lunch (Osgood Building)**

2:00-5:00pm **Poster Session I (Franklin Building)**

2:00-3:30pm Poster Subsession A

3:30-5:00pm Poster Subsession B

5:30-7:00pm **Dinner (Osgood Building)**

7:00-8:30pm **Concurrent Sessions - I (Franklin Building)**

*Concurrent Session 1: Belowground Ecology (Ben Franklin Hall)* **Dan Stover**

7:00-7:20pm Soil warming and the vulnerability of old soil organic carbon.....M. Torn

7:20-7:40pm Stem respiration and its connection with soil respiration.....J. Tang

7:40-8:00pm Partitioning in Trees and Shrubs (PiTS): A field research facility  
for testing dynamic carbon partitioning representations within  
global models.....C. Iversen

8:00-8:20pm Temperature research of soil microbial efficiency and its feedbacks  
to climate.....J. Melillo

8:30pm Adjourn

*Concurrent Session 2: Terrestrial-Aquatic Interfaces (Room 1)* **Mike Kuperberg**

7:00-7:20pm A connection to deep groundwater alters ecosystem carbon fluxes  
and budgets: example from a Costa Rican rainforest.....D. Genereux

7:20-7:40pm Convergence of the effect of root hydraulic functioning and root  
hydraulic redistribution on ecosystem carbon balance and  
drought-induced vegetation mortality across divergent forest  
ecosystems.....A. Noormets

7:40-8:00pm Understanding the role of landscape structure in coupled carbon  
and water dynamics.....H. Barnard

8:00-8:20pm Toward a predictive understanding of microbial carbon turnover  
in a northern peatland.....J. Kostka

8:30pm Adjourn

*Concurrent Session 3: Reactive Transport in Subsurface Systems (Room 3)* **Paul Bayer**

- 7:00-7:20pm Geoelectrical measurement of multi-scale mass transfer parameters.....F. Day-Lewis
- 7:20-7:40pm Modeling uranium desorption and transport from decimeter to plume scales.....G. Curtis
- 7:40-8:00pm Uranium transport across ground water surface water interfaces: Effect of wetland plans on the sediment biogeochemistry.....P. Jaffe
- 8:00-8:20pm Biogeochemical cycling of manganese and its effect on uranium mobility.....B. Tebo
- 8:30pm Adjourn

*Concurrent Session 4: Transport Processes of Inorganics (Room 18/19)* **Roland Hirsch**

- 7:00-7:20pm Products of uranium reduction: Are we modeling the correct species?...K. Kemner
- 7:20-7:40pm Inorganic geochemical controls on Neptunium transport: co-precipitation in minerals.....P. Burns
- 7:40-8:00pm Collaborative Research: The importance of organo-iodine and iodate in iodine-<sup>127,129</sup> speciation, mobility, and microbial activity in groundwater at DOE sites..... P. Santschi
- 8:00-8:20pm The biogeochemical controls on plutonium transport.....A. Kersting
- 8:30pm Adjourn

**Wednesday, May 15, 2013**

6:30-8:00am **Breakfast (Osgood Building)**

8:00-9:00am **Plenary Session II- Evolution and Long-Term Payoffs of Field Projects** **Mike Kuperberg**

- 8:00-8:30am Long-term experiments and observations: Fertile ground for model benchmarking and improvement in the context of environmental change.....P. Hanson
- 8:30-9:00am Linking fluvial processes and elemental cycling in the Old Rifle, CO aquifer.....K. Williams

- 9:00-12:00pm           **Poster Session II (Franklin Building)**
- 9:00-10:30am           Poster Subsession C
- 10:30-12:00pm         Poster Subsession D
- 12:00pm-1:30pm       **Lunch (Osgood Building)**
- 1:30-3:00pm           **Plenary Session III – University Highlight Talks (Franklin Building)**  
**Paul Bayer**
- 1:30-1:50pm   Resilience of forest carbon storage to low-intensity disturbance:  
 Insights from a large-scale experiment within a long-term  
 AmeriFlux site in the upper Great Lakes.....C. Gough
- 1:50-2:10pm   Permafrost carbon and climate feedbacks in a warmer world .....T Schuur
- 2:10-2:30pm   Deciphering molecular-scale processes to describe field-scale phenomena in  
 carbon and metal cycling.....S. Fendorf
- 2:30-2:50pm   Genome-scale modeling of carbon and metal cycling in the  
 subsurface.....D. Lovley
- 3:00-4:30pm           **Concurrent Sessions – II (Franklin Building)**
- Concurrent Session 5 Disturbances in Terrestrial Ecosystems (Ben Franklin Hall)   **Dan Stover***
- 3:00-3:20pm   Responses of pinon and juniper to rainfall manipulation:  
 Mechanisms of drought-induced mortality and the implications  
 of long-term acclimation.....W. Pockman
- 3:20-3:40pm   The impact of Mountain Pine beetle disturbance on carbon cycling  
 in high elevation Western forests.....D. Moore
- 3:40-4:00pm   Responses of subalpine tree recruitment to warming within and  
 above current altitudinal ranges.....L. Kueppers
- 4:00-4:20pm   It’s all connected: Linking above- and belowground dryland responses  
 to climate change.....S. Reed
- 4:30pm         Adjourn

*Concurrent Session 6: Bio- and Geo-chemical Controls on Contaminant Transport (Room 1)*

**Paul Bayer**

- 3:00-3:20pm Kinetics of nitrate-dependent uranium and iron oxidation.....P. O'Day
- 3:20-3:40pm Metaproteomics of metal and radionuclide bioreduction.....S. Pfiffner
- 3:40-4:00pm Isotopic characterization of mercury biogeochemistry.....J. Blum
- 4:00-4:20pm Reactivity and bioavailability of nanoscale mercury sulfides.....H. Hsu-Kim
- 4:30pm Adjourn

*Concurrent Session 7: Investigating Biogeochemical Processes Using Advanced Technologies (Room 3)*

**Roland Hirsch**

- 3:00-3:20pm COS Flux Measurements: New instrumentation and eddy flux observations for a carbon cycle tracer at one-millionth the concentration of CO<sub>2</sub>.....K Maseyk
- 3:20-3:40pm Terrestrial carbon cycling: Insights gained from radiocarbon measurements.....K. McFarlane
- 3:40-4:00pm Coupling synchrotron and biogeochemical techniques to understand biogeochemical critical element cycling at molecular to pore scales.....J. Bargar
- 4:00-4:20pm Investigating biogeochemical and microbial community dynamics in a groundwater-river water interaction zone promoted by seasonal hydrologic fluctuations.....J. Zachara
- 4:30pm Adjourn

*Concurrent Session 8: Multi-scale Modeling of Terrestrial Environments (Room 18/19)*

**David Lesmes**

- 3:00-3:20pm Hybrid multiscale modeling of coupled hydrologic and biogeochemical terrestrial processes.....T. Scheibe
- 3:20-3:40pm Scaling of coupled hydrology and biogeochemistry from genomes to landscapes.....B. Riley
- 3:40-4:00pm Towards a complete description of the hydrologic cycle: High resolution, continental-scale simulations with a parallel, integrated model.....R. Maxwell
- 4:00-4:20pm Towards a scalable approach to modeling hydrological and biogeochemical processes.....R. Leung

4:30pm          Adjourn

4:30-5:30pm          **Plenary Session IV – Workshops and Other Programmatic Activities**

**Dan Stover**

4:30-4:45pm    EMSL Workshop: Belowground carbon cycling.....N. Hess

4:45-5:00pm    Integrated Water Cycle Workshop.....R. Leung

5:00-5:15pm    GOAmazon update.....W. Ferrell

5:15-5:30pm    NGEE Tropics Workshop.....R. Norby

5:30-5:45pm          **Closeout/Announcements**

5:45-7:00pm          **Dinner (Osgood Building)**

7:00pm                  **Adjourn**

7:00-8:30pm          **Optional Working Group and Team Meetings (Franklin Building)**

**Working Group Meetings**

Mercury (Room 18).....L. Liang & N. Yee

Radionuclides (Room 19).....A. Kersting & J. Zachara

ESS Multi-scale Modeling and Workflows (Room 1).....D. Lesmes, D. Ricciuto & T.Scheibe

**Team Meetings**

NGEE-Arctic (Ben Franklin Hall).....S. Wullschleger

SPRUCE (Ben Franklin Hall).....P. Hanson

AmeriFlux (Room 3).....M. Torn