



TBI Newsletter October 23, 2013

Welcome to the Thermal Biology Institute Newsletter. We will be regularly updating colleagues, collaborators and friends of TBI with pertinent information. Please let us know if you have any information to share regarding:

- Seminars, meetings, workshops, conferences
- Employment opportunities
- Faculty & relevant publications
- Faculty & student awards
- Faculty & student presentations
- Outreach activities
- Funding opportunities

Items you wish to include in the newsletter can be sent to heather.rauser@montana.edu

Best regards,
Brent Peyton
Director, TBI

Seminars, Meetings & Workshops

[TBI Seminar Schedule](#) (Seminar is at 3:10pm, 108 Plant Bioscience Building)

10/28 Brian Bothner, MSU, *Has Omics Gone Viral?*

11/4 Ken Stedman, Portland State University, *Viruses from Hell*

11/25 Gill Geesey, MSU, *Influence of microbial processes on carbonate mineral formation*

12/2 Valerie Copie, MSU, *Metabolomics studies of the *Ignicoccus-Nanoarchaeum* archaeal system: can metabolite profiling shed light on the mechanism of interspecies interactions between these two archaea?*

[Micro Seminar Schedule](#) (Seminar is at 1:10pm, 346 Leon Johnson Hall)

10/25 Samuel T. Hess, University of Maine, *Biological Applications of Localization-Based Super-Resolution Microscopy*

11/1 Tamar Barkay, Rutgers University, *What goes around comes around: Who Methlates Mercury in the Environment?*

[CBE Seminar Schedule](#) (Seminar is at 4:10pm, 101 Roberts)

10/24 CBE Mining Group, MSU, *Microbial communities and Se reduction in coal waste rock deposits*

10/31 Thiru Ramaraj, Nat'l Center for Fenome Resources, *Advanced sequencing technologies & genome informatics to investigate biological systems*

[Chemistry & Biochemistry](#) (Check website for seminar times)

10/25 Juliana D'Andrilli, MSU, *Antarctic DOM characterization by Fourier transform ion cyclotron resonance mass spectrometry and fluorescence spectroscopy*

3:10pm Byker Auditorium

11/1 Brian Bothner, MSU, *TBA*, 3:10pm Byker

National Meetings

American Geophysical Union, fall meeting, San Francisco

<http://www.agu.org> December 9-13, 2013

Funding Opportunities

PD-14-7644

Energy for Sustainability- NSF

Category of Funding Activity: Science and Technology and other Research and Development

Posted Date: Apr 5, 2013

Original Closing Date for Applications: Feb 20, 2014 **Submission Window Date(s) (due by 5 p.m. proposer's local time): Full Proposal Window: January 15, 2014 - February 20, 2014**

Estimated Total Program funding: \$13,093,000 Award Floor: \$300,000

This program supports fundamental research and education that will enable innovative processes for the sustainable production of electricity and transportation fuels. Processes for sustainable energy production must be environmentally benign, reduce greenhouse gas production, and utilize renewable resources. Current interest areas in sustainable energy technologies are highlighted in the full text of this proposal.

PD-14-1440

Environmental Engineering- NSF

Category of Funding Activity Science and Technology and other Research and Development

Posted Date Apr 5, 2013 Original **Closing Date for Applications Feb 20, 2014 Submission Window Date(s) (due by 5 p.m. proposer's local time): Full Proposal Window: January 15, 2014 - February 20, 2014**

Estimated Total Program funding: \$10,798,000 Award Floor: \$300,000

The Environmental Engineering program supports fundamental research and educational activities across the broad field of environmental engineering. The goal of this program is to encourage transformative research which applies scientific and engineering principles to avoid or minimize solid, liquid, and gaseous discharges, resulting from human activity, into land, inland and coastal waters, and air, while promoting resource and energy conservation and recovery.

Employment opportunities

ExxonMobil: Postdoctoral Fellow - Microbiology ExxonMobil Research and Engineering Company has an immediate opening for a Postdoctoral Fellow in its Corporate Strategic Research laboratory located in Annandale, NJ. We are seeking a candidate to join a team executing programs aimed at understanding and manipulating microbial metabolism related to the oil and gas industry. The successful candidate must have a strong background and demonstrated scientific excellence in biochemistry, molecular biology, and/or microbial genetics. Experience with hydrocarbon metabolism and/or subsurface microbiology is desirable. A PhD in microbiology, biochemistry or related field is required. Opportunities exist to participate in other emerging energy research. To view posting and/or apply, go to www.exxonmobil.com/ex and search for Microbiology.

University of Exeter: Two Postdoctoral Research Positions: Unculturable Protists & Fungi, Single Cell Genomics Two postdoctoral research positions are available in the laboratory of Dr. Thomas Richards at the University of Exeter, UK. The project focuses on using environmental sequence data, including metagenomics and transcriptomics, combined with single cell genomic data to investigate the biology and

evolutionary significance of unculturable protist and fungal microbes from marine environments including deep-sea sediments. One post is focused entirely on bioinformatic based analysis while the second post can include both bioinformatic and laboratory work. However, both applicants should be interested in working with second-generation sequence datasets and feel confident with post genomic analysis including for example: phylogenetic tree reconstruction and metabolic pathway reconstruction.

Applications due November 13, 2013.

Exploration Postdoc Fellowship The **School of Earth and Space Exploration (SESE)** at Arizona State University invites applications for the **Exploration Postdoctoral Fellowship Program**. The mission of the program is to provide opportunities for conducting postdoctoral research on cutting-edge topics and to foster inter-disciplinary collaboration. Potential research topics span the full range of research interests of our faculty (http://sese.asu.edu/focus_areas). <http://sese.asu.edu/opportunities->

Faculty & relevant publications & presentations

**publications since May 2013, please let us know if we have overlooked any relevant publications*

[Phylogenetic and Functional Analysis of Metagenome Sequence from High-Temperature Archaeal Habitats Demonstrate Linkages between Metabolic Potential and Geochemistry.](#)

Inskeep WP, Jay ZJ, Herrgard MJ, Kozubal MA, Rusch DB, Tringe SG, Macur RE, Jennings Rd, Boyd ES, Spear JR, Roberto FF.

[Comparative genomic analysis of phylogenetically closely related *Hydrogenobaculum* sp. isolates from Yellowstone National Park.](#)

Romano C, D'Imperio S, Woyke T, Mavromatis K, Lasken R, Shock EL, McDermott TR.
Appl Environ Microbiol. 2013 May;79(9):2932-43.

[An efficient and scalable extraction and quantification method for algal derived biofuel.](#)

Lohman EJ, Gardner RD, Halverson L, Macur RE, Peyton BM, Gerlach R.
J Microbiol Methods. 2013 Sep;94(3):235-44. doi: 10.1016/j.mimet.2013.06.007. Epub 2013 Jun 27.

[Physiological and molecular analysis of carbon source supplementation and pH stress-induced lipid accumulation in the marine diatom *Phaeodactylum tricornutum*.](#)

Mus F, Toussaint JP, Cooksey KE, Fields MW, Gerlach R, Peyton BM, Carlson RP.

[New insights into the evolutionary history of biological nitrogen fixation.](#)

Boyd ES, Peters JW.
Front Microbiol. 2013;4:201. doi: 10.3389/fmicb.2013.00201.

[Expanding the paradigm of thiol redox in the thermophilic root of life.](#)

Heinemann J, Hamerly T, Maaty WS, Movahed N, Steffens JD, Reeves BD, Hilmer JK, Therien J, Grieco PA, Peters JW, Bothner B.
Biochim Biophys Acta. 2013 Aug 17;1840(1):80-85.

[In situ analysis of oxygen consumption and diffusive transport in high-temperature acidic iron-oxide microbial mats.](#)

Bernstein HC, Beam JP, Kozubal MA, Carlson RP, Inskeep WP.
Environ Microbiol. 2013 Aug;15(8):2360-70.

[¹H, ¹³C, ¹⁵N backbone and side chain NMR resonance assignments of the N-terminal NEAr iron transporter domain 1 \(NEAT 1\) of the hemoglobin receptor IsdB of *Staphylococcus aureus*.](#)

Fonner BA, Tripet BP, Lui M, Zhu H, Lei B, Copié V. [Yellowstone lake nanoarchaeota.](#)
Clingenpeel S, Kan J, Macur RE, Woyke T, Lovalvo D, Varley J, Inskeep WP, Nealson K, McDermott TR.

Front Microbiol. 2013 Sep 11;4:274.

[Metagenome sequence analysis of filamentous microbial communities obtained from geochemically distinct geothermal channels reveals specialization of three aquificales lineages.](#)

Takacs-Vesbach C, Inskeep WP, Jay ZJ, Herrgard MJ, Rusch DB, Tringe SG, Kozubal MA, Hamamura N, Macur RE, Fouke BW, Reysenbach AL, McDermott TR, Jennings Rd, Hengartner NW, Xie G.
Front Microbiol. 2013;4:84.

[The YNP Metagenome Project: Environmental Parameters Responsible for Microbial Distribution in the Yellowstone Geothermal Ecosystem.](#)

Inskeep WP, Jay ZJ, Tringe SG, Herrgård MJ, Rusch DB; YNP Metagenome Project Steering Committee and Working Group Members.
Front Microbiol. 2013;4:67

[Effects of petroleum mixture types on soil bacterial population dynamics associated with the biodegradation of hydrocarbons in soil environments.](#)

Hamamura N, Ward DM, Inskeep WP

[Construction of two ureolytic model organisms for the study of microbially induced calcium carbonate precipitation.](#)

Connolly J, Kaufman M, Rothman A, Gupta R, Redden G, Schuster M, Colwell F, Gerlach R.
J Microbiol Methods. 2013 Sep;94(3):290-9.

[Temporal metatranscriptomic patterning in phototrophic Chloroflexi inhabiting a microbial mat in a geothermal spring.](#)

Klatt CG, Liu Z, Ludwig M, Kühl M, Jensen SI, Bryant DA, Ward DM.
ISME J. 2013 Sep;7(9):1775-89

[Functional interplay between a virus and the ESCRT machinery in archaea.](#)

Snyder JC, Samson RY, Brumfield SK, Bell SD, Young MJ.
Proc Natl Acad Sci U S A. 2013 Jun 25;110(26):10783-7.

[Enhanced Sensitivity Employing Zwitterionic and pI Balancing Dyes \(Z-CyDyes\) Optimized for 2D-Gel Electrophoresis Based on Side Chain Modifications of CyDye Fluorophores. New Tools For Use in Proteomics and Diagnostics.](#)

Epstein MG, Reeves BD, Maaty WS, Fouchard D, Dratz EA, Bothner B, Grieco PA.
Bioconjug Chem. 2013 Sep 18;24(9):1552-61