

“LTER Microbial Systems Science”

A summary of the 2007 post ASM microbiology workshop

Following a full day of well-attended presentations and discussions focused on microbial diversity at the 2006 All Scientist Meeting, there was a consensus opinion that it would be valuable to coordinate studies of microbes and microbially catalyzed processes across the network of LTER sites. Funds were requested and awarded to hold a post ASM workshop to discuss opportunities that might arise from establishing a network-wide initiative in microbiology. The workshop, entitled “*Catalyzing Cross-Site Comparisons of Microbial Diversity and Function*”, was held at Michigan State University in November of 2007. The list of attendees and the workshop agenda are provided as a supplement to this report.

Numerous opportunities to explore linkages between the structure and function of microbial communities across LTER sites were discussed. The culmination would be studies that combine quantitative measures of microbial diversity with processes-level measurements and assessments of environmental parameters. This type of result would enhance predictive models of ecosystem functioning.

To achieve these goals, we recommend the following:

1. Establish a working group in Microbial Systems Sciences to promote and coordinate studies of microbial diversity and microbially mediated processes, including environmental drivers of structure and function of microbial communities.

Action items:

- a) Request that the LTER Executive committee establish the MSS working group
- b) Identify scientists interested in participating in the MSS working group through dissemination of this report
- c) Establish a list serve for communication amongst the working group
- d) Coordinate MSS sessions for the 2009 ASM meeting

2. Given that studies of microbial diversity are frequently based on DNA sequences, position the LTER network to interface with other community sequence databases and to integrate nucleic acid sequence data in the LTER cyber infrastructure.

Action items:

- a) Support LTER representation at National and International meetings dealing with the generation, storage and interpretation of metagenomic data.
- b) Meet with LTER information managers to discuss issues and opportunities arising from inclusion of sequence data from molecular surveys into LTER ecological data sets.

3. Update the content of the “Microbial Ecology” section of the LTER website, and expand its scope to include dynamics of the physical and chemical dimensions of the environment at scales relevant to microbes. The present content and the added information on dynamics at the appropriate microbial scale together define “Microbial Systems Science”.

Action items:

- a) Request individual sites to provide updated descriptions of microbial studies
- b) Coordinate content with LTER main office for inclusion on web site

Coordinating the study of microbial communities and microbially mediated process across the LTER network has the potential to accelerate our understanding of the ecological systems that sustain life on Earth.



Genomics Workshop

Catalyzing Cross-Site Comparisons of Microbial Diversity and Function

Nov. 11-12, 2007

Michigan State University
East Lansing, MI

Participants

Organizing Committee

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AGENDA

Sunday (Nov. 11)

8:00 Breakfast at the Marriott (Meet in Restaurant on 2nd floor)

9:00 Introductory remarks and goals of workshop: 2245 BPS Building

9:15 Tom Schmidt

9:45 Joe von Fisher

10:15 Tim Hollibaugh

10:45 Break

11:00 George Kling

11:30 John Hobbie

12:00 Lunch

1:00 Hugh Ducklow

1:30 Alison Murray

2:00 Jim Cole

2:30 Break

2:45 Develop outline of White Paper

3:00 Writing session

6:00 Break for Dinner

6:30 Dinner at Dublin Square

Monday (Nov. 12)

8:00 AM Breakfast at Marriott

9:00 Review 1st draft

Continued writing and discussion

11:00 Jim Tiedje: Coordination with other efforts (CAMERA, NEON)

Noon: Concluding remarks and Lunch