

Biological and Environmental Research Information System: A Multifaceted Approach to DOE Systems Research Communication

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Project Goals: Develop and distribute programmatic materials to help build the multidisciplinary community needed to advance systems research for DOE energy and environmental missions. The Biological and Environmental Research Information System group works with program managers and the scientific community to help develop and communicate key scientific and technical concepts for scientific community and public discourse. Ideas are welcome to extend program integration and improve communications and thus represent BER's research more comprehensively.

Concerted communication is key to progress in cutting-edge science and public accountability. Our goals focus on three objectives: (1) facilitate science planning, research, and communication; (2) inform a broader audience about Department of Energy (DOE) research projects, progress, and significance to science and society; and (3) respond to outreach and information exchange needs of related DOE projects.

The Biological and Environmental Research Information System has focused on presenting all facets of genomics research for DOE's Office of Science (22 years). The materials we produce have helped ensure that scientists can participate in and reap the bounty of the genome revolution, that new generations of students can be trained in genomics and systems biology, and that the public can make informed decisions regarding genetics issues.

In 2009, our scope was extended to include all programs within the Office of Biological and Environmental Research (BER), which conducts frontier research in climate, subsurface biogeochemistry, and genome science within the Office of Science. These programs explore scientific complexity at temporal and spatial scales requiring contributions from teams of interdisciplinary scientists, thereby necessitating an unprecedented integrative approach both to the science and to research communication strategies. Because each scientific discipline has different perspectives and languages, effective communication to help foster information flow across disciplines and translation of scientific discovery into appropriate DOE mission areas is critical to BER's success. We work with DOE staff and the research community to produce and disseminate information in various formats: technical reports, roadmaps, websites, brochures, databases, technical compilations, presentations, exhibits for scientific meetings, text, graphics, and posters. We staff the BER and Genomic Science exhibits at more than 10 scientific meetings each year and maintain the searchable BER Research Highlights database (public.ornl.gov/hgmis/bernews/). We also assist with the outreach efforts of DOE grantees—especially the Bioenergy Research Centers, Joint Genome Institute, Environmental Molecular Sciences Laboratory, and Atmospheric Radiation Measurement Climate Research Facility—to help increase their reach and impact.

Biological Systems Science Division—completed and ongoing projects include:

Genomic Science program website <http://genomicscience.energy.gov>

DOE Genomic Science Awardee Meeting X, February 26–29, 2012 (this abstracts book)

Applications of New DOE National User Facilities in Biology Workshop Report (February 2012)

Switchgrass Research Group: Progress Report (January 2012)

Biosystems Design: Draft Report from the July 2011 Workshop (Web HTML, January 2012)

Plant Feedstock Genomics for Bioenergy Joint Awards (August 2011)

Revealing the Role of Microbial Communities in Carbon Cycling (July 2011)

Projects Underpinning Knowledgebase Development (May 2011)

Biological Systems Science Division Overview (revised May 2011)

Genomic Science Program brochure (May 2011)

DOE User Facilities: Advanced Technologies for Biology, Structural Biology brochure (May 2011)

DOE BER Joint Genome Institute brochure (revised May 2011)

Joint Meeting 2011: Genomic Science Awardee Meeting IX and USDA-DOE Plant Feedstock Genomics for Bioenergy Awardee Meeting, April 10–13, 2011, abstracts book, 238 pp., April 2011

Climate and Environmental Sciences Division (CESD)—completed and ongoing projects include:

Subsurface Biogeochemical Research website (in development)

Subsurface Biogeochemical Research Contractor-Grantee Workshop, April 30–May 2, 2012, abstracts book (in development)

Subsurface Biogeochemical Research brochure (October 2011)

Terrestrial Ecosystem Science brochure (October 2011)

Climate and Environmental Sciences Division Overview (October 2011)

GOAmazon2014 Workshop Report summary brochure (October 2011)

GOAmazon2014 Workshop Report (September 2011)

DOE BER Environmental Molecular Sciences Laboratory overview brochure (revised May 2011)

DOE BER ARM Climate Research Facility overview brochure (revised May 2011)

We also continuously update and enhance websites, paying particular attention to navigation and increasing functionality and accessibility. These sites include:

- Genomic Science website (genomicscience.energy.gov). In addition to describing program research, the site provides information on how to access DOE user facilities and the DOE Systems Biology Knowledgebase.
 - BER image gallery (genomics.energy.gov/gallery/)
 - BER Research Highlights Database (public.ornl.gov/site/bernews/)
- Subsurface Biogeochemical Research (in development)

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