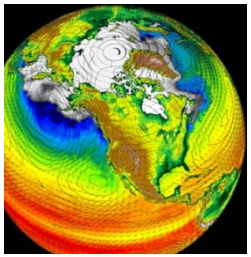
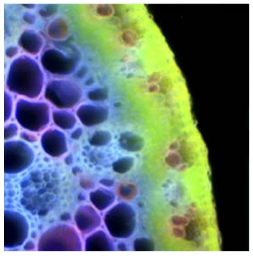
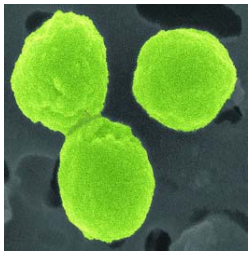


BERAC
October 27, 2016

Sharlene Weatherwax, Associate Director of Science

Biological and Environmental Research

Personnel Changes in BER - New Hires!

Dr. Adam Rosenblatt – BER Front Office
(AAAS Science and Technology Policy Fellow; Yale Univ.)

Meredith Rutledge – BSSD Scientific Program Specialist
(Clemson University)

United States Department of Energy

Secretarial Honor Awards and Presidential Rank Awards

Dr. Patricia Dehmer

receives the

James R. Schlesinger Award

United States Department of Energy

Secretarial Honor Awards and Presidential Rank Awards

Quadrennial Technology Report (QTR) Team

For your extraordinary effort in preparing the Department of Energy's Quadrennial Technology Review. Across six core technology chapters, the 2015 QTR provides one of the most comprehensive assessments ever completed of research and development opportunities to sustain and deepen our clean energy revolution. Through their tremendous effort, the QTR identifies hundreds of clean energy research opportunities for our homes, businesses, cars and trucks, and power sector. It shows us that emerging advanced energy technologies provide a rich set of options to address our energy challenges, but their large-scale deployment requires continued improvements in cost and performance. The team's efforts are already informing the Department's long-term decision making about investments in the nation's energy system and will positively affect the development and adoption of the energy technologies of the future for years to come.

For their contributions to the Department and the Nation, the Quadrennial Technology Review Team is awarded the Secretary of Energy's Achievement Award.

Members:

Samuel Baldwin
Gilbert Bindewald, III
Steve Binkley
Austin Brown
Steven Chalk
Charles Chen
Kerry Cheung
David Conrad
Corrie Clark
Joe Cresko
Matt Crozat
Jarad Daniels
Patricia Dehmer
James Edmonds
Julio Friedman
Paul Friley
Jeff Greenblatt
Zia Haq
Douglas Holleta
Kristen Honey
Marcos Huerta
Ziga Ivanic
Christopher Johns
Mark A. Johnson
William Joost
Akhlesh Kaushiva
Henry Kelly
John E. Kelly
Henry Kenchington
Dan King
Adam Kinney
Mike Knotek
Harriet Kung
Michael Kuperberg
Alex Larzelere
Heather Liddell
Steve Lindenberg
Robert Marlay
Michael Martin
Colin McMillan
Elena Melchert
Joshua Mengers
Eric Miller
James Miller
David Mohler
Darren Mollot
George Muntean
David Ortiz
Patrick Phelen
Kimberly D. Rasar
Ronald Risso
Charles Russomanno
Ridah Sabouni
Reuben Sarkar
Ann Satsangi
Margaret Schaus
Andrew Schwartz
Tarak N. Shah
Devanand Shenoy
A.J. Simon
Gurpreet Singh
Emmanuel Taylor
Pilar Thomas
Jacob Ward
Bradley Williams
Ellen Williams
Jetta Wong

BERAC Members Recognized!

Huimin Zhao (University of Illinois-UC) – Charles Thom Award for exceptional merit in industrial microbiology and biotechnology. July 28, 2016.

James Ehleringer (University of Utah) – Rosenblatt Prize for Excellence in teaching, research, and administrative efforts. May 5, 2016.

Minghua Zhang (Stony Brook) – Appointed Editor in Chief of JGR-Atmospheres. May 5, 2016.

Bruce Hungate (Northern Arizona Univ.) – Elected Fellow of the American Academy of Microbiology. June 17, 2016.

Jerry Melillo (Marine Biological Lab.) – Appointed to the Sustained National Climate Assessment Advisory Committee. June 29, 2016.

BER Researchers Recognized!

Victoria Orphan (Caltech)
2016 MacArthur Foundation Fellow
(Past recipient of DOE Early Career Award; 2011 PECASE Award; and funded by BER Genomic Science program)

Dr. Sabeeha Merchant (UCLA)
2016 German National Academy of Sciences Leopoldina
(Director of UCLA-DOE Institute of Genomics and Proteomics)

Pierre Gentine (Columbia Univ.)
2017 Clarence Leroy Meisinger Award (Am. Met. Soc.)
(Past recipient of DOE Early career award; funded by ASR and ARM)

More BER Researchers Recognized!

Michael Goulden (Univ. of California, Irvine)
2016 AGU Fellow
(DOE TES-funded)

Yiqi Luo (University of Oklahoma)
2016 AGU Fellow
(DOE TES-funded)

Rich Norby (ORNL)
2016 ESA Fellow
(DOE TES-funded)

Baohua Gu (ORNL)
2016 Geol. Soc of Am. Fellow
(DOE SBR-funded)

Ben Preston (ORNL)
2016-2017 AAAS Public Engagement Fellow

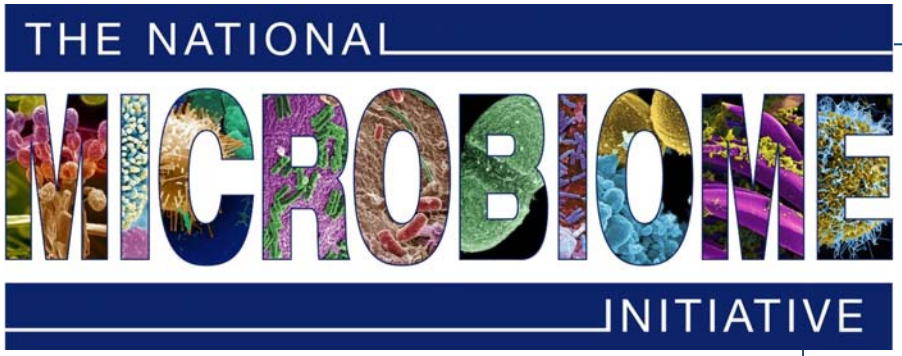
FY 2017 President's Budget Request — Office of Science ($ in thousands)

	FY 2015 Enacted Approp.	FY 2016 Enacted Approp.	FY 2017 President's Request	FY 2017 President's Req. vs. FY 2016 Enacted Approp.	
Science					
Advanced Scientific Computing Research	541,000	621,000	663,180	+42,180	+6.8%
Basic Energy Sciences	1,733,200	1,849,000	1,936,730	+87,730	+4.7%
Biological and Environmental Research	592,000	609,000	661,920	+52,920	+8.7%
Fusion Energy Sciences	467,500	438,000	398,178	-39,822	-9.1%
High Energy Physics	766,000	795,000	817,997	+22,997	+2.9%
Nuclear Physics	595,500	617,100	635,658	+18,558	+3.0%
Workforce Development for Teachers and Scientists	19,500	19,500	20,925	+1,425	+7.3%
Science Laboratories Infrastructure	79,600	113,600	130,000	+16,400	+14.4%
Safeguards and Security	93,000	103,000	103,000	.....	.....
Program Direction	183,700	185,000	204,481	+19,481	+10.5%
University Grants (Mandatory)	.....	.....	100,000	+100,000	.....
Small Business Innovation/Technology Transfer Research (SC)	.....	.....	.....	.....	.....
Subtotal, Science	5,071,000	5,350,200	5,672,069	+321,869	+6.0%
Small Business Innovation/Technology Transfer Research (DOE)	.....	.....	.....	.....	.....
Rescission of Prior Year Balance	-3,262	-3,200	.....	+3,200	-100.0%
Total, Science	**5,067,738**	**5,347,000**	**5,672,069**	**+325,069**	**+6.1%**

BER FY 2017 Budget Request

	FY2017 Budget ($M)		
	Request	**House**	**Senate**
Biological Systems Science	$339.1	$313.1	$314.1
Research	$258.6	$233.6	$233.6
Facilities	$80.5	$79.5	$80.5
Climate and Environmental Science	$322.9	$281.9	$322.9
Research	$204.8	$164.9	$204.8
Facilities	$118.0	$117.0	$118.0
TOTAL	$662.0	$595.0	$637.0

Microbiome Update



THE WHITE HOUSE
OFFICE OF SCIENCE AND TECHNOLOGY POLICY

FOR IMMEDIATE RELEASE
May 13, 2016

FACT SHEET: Announcing the National Microbiome Initiative

WASHINGTON, DC – Today, the White House Office of Science and Technology Policy (OSTP), in collaboration with Federal agencies and private-sector stakeholders, is announcing a new National Microbiome Initiative (NMI) to foster the integrated study of microbiomes across different ecosystems, and is hosting an event to bring together stakeholders vital to advancing the NMI.

The new National Microbiome Initiative aims to advance microbiome science in ways that will benefit individuals, communities, and the planet.

1. **Support interdisciplinary research** to answer fundamental questions about microbiomes in diverse ecosystems.
2. **Develop platform technologies** that will generate insights and help share knowledge of microbiomes in diverse ecosystems and enhance access to microbiome data.
3. **Expand the microbiome workforce** through citizen science and educational opportunities.

BER FY2016 Programmatic Activities

Funding Opportunity Announcements	**502** proposals submitted (8 FOAs total)	**68** proposals awarded	**14%** success rate
SFA/program reviews	**12** reviews completed		
PI meetings/ workshops	**5** PI meetings **13** workshops		

BER Early Career 2016 Topics

Full proposals due: Nov. 19, 2015; Selection date: March 23, 2016

1. **Systems biology-enabled research on the role of microbes and microbial communities in the plant-soil-environment interactions [BSSD]**
   Fundamental, systems biology-driven research aimed at understanding the contribution of microbes and microbial communities to bioenergy feedstock plant performance, adaptation, and abiotic stress tolerance, and the environmental impacts of introducing bioenergy cropping systems, to enable the integrated development of sustainable bioenergy feedstock systems in terrestrial ecosystems.
2. **Improved Understanding of Tropical Forest Ecosystems to Climate Change [CESD]**
   Reduce critical uncertainties in model representation of tropical forest ecosystems. The goal is to improve representation and understanding of tropical forest function and feedbacks to a changing climate, which includes complex interactions of biogeochemical cycles, hydrology, belowground processes, vegetation dynamics and disturbance.
3. **Human Component of Earth System Models [CESD]**
   Develop one or more in-depth representation(s) in which climate and human systems both impact one another and co-evolve. The goal is to advance new modeling constructs, methods, and topics at appropriate spatial and temporal scales for climate projections in Earth system and climate models of principal interest to DOE.

BER 2016 Early Career Awardees

Name	Institution	Topic Area	Title
Daniela Cusack	UCLA	Tropical forests	Consequences of Plant Nutrient Uptake for Soil Carbon Stabilization
Kirsten Hofmockel	PNNL	Systems biology	Molecular interactions of the plant-soil-microbe continuum of bioenergy ecosystems
Melanie Mayes	ORNL	Tropical forests	A Comprehensive Framework for Modeling Emissions from Tropical Soils and Wetlands
Karis McFarlane	LLNL	Tropical forests	Tropical Forest Response to a Drier Future: Turnover Times of Soil Organic Matter, Respired CO2 and CH4 Across Moisture Gradients in Time and Space
James Moran	PNNL	Systems biology	Spatially resolved rhizosphere function: Elucidating key controls on nutrient interactions
Wellington Muchero	ORNL	Systems biology	Host-microbial genetic features mediating symbiotic interactions in the bioenergy crop *salix*
Kabir Peay	Stanford	Systems biology	Does mycorrhizal symbiosis determine the climate niche for *Populus* as a bioenergy feedstock?

2017 Early Career Award Topics

1. Systems Biology Enabled Research on the Role of Microbial Communities in Carbon Cycle Processes

Applications are requested for -omics driven systems biology research on the roles of microbes and microbial communities in large-scale carbon cycling processes in terrestrial soil and sedimentary ecosystems, focused on: (i) regulatory and metabolic networks of microbes, microbial consortia, and microbe-plant interactions involved in biogeochemical cycling of carbon, and/or (ii) approaches to investigate microbial community functional processes involved in carbon cycling in terrestrial ecosystems using micro- or meso-cosms and/or field studies.

2. Modeling the Drivers and Impacts of Extreme Events

This topic addresses the growing imperative to understand and simulate the drivers and consequences of climate extremes, particularly compounding multivariate extremes (e.g. extreme heat and drought) that give rise to multiple, simultaneous stressors (e.g. increased water demand for energy, agriculture and consumption). Successful applications must include a combined model-observation investigation of climate extremes, particularly droughts, floods or heat waves, and with a particular interest in techniques to address compounding multivariate extremes.

Pre-proposals due: Sept. 8, 2016; Full proposals due: Nov. 14, 2016
Decisions announced: March 22, 2017

DOE Office of Science Graduate Student Research (SCGSR) Program

The SCGSR Program provides supplemental awards to outstanding graduate students to spend 3 to 12 months conducting part of their doctoral thesis/dissertation research at a DOE national laboratory in collaboration with a DOE laboratory scientist. http://science.energy.gov/wdts/scgsr/

BER Priority Research Areas for SCGSR Program:

(a) Computational Biology and Bioinformatics
(b) Biological Imaging - Mesoscale to Molecules
(c) Plant Science for Sustainable Bioenergy
(d) Environmental Systems Science
(e) Atmospheric Systems Research
(f) Earth System Modeling
(g) Regional and Global Climate Modeling

- Typically two (2) solicitations annually.

Applications are due November 21, 2016 at 5pm!

New BERAC Charge – BSSD Conference of Visitors (COV)

Department of Energy
Office of Science
Washington, DC 20585

Office of the Director

October 5, 2016

Dr. Gary Stacey
Endowed Professor of Plant Science
Divisions of Plant Sciences and Biochemistry
271E Christopher S. Bond Life Sciences Center
University of Missouri
Columbia, MO 65211

Dear Dr. Stacey:

By this letter I am charging the Biological and Environmental Research Advisory Committee (BERAC) to assemble a Committee of Visitors (COV) to assess the processes used by the Biological Systems Science Division (BSSD) within the Office of Biological and Environmental Research (BER) to manage BSSD research programs and its user facility, the Joint Genome Institute (JGI).

The COV should assess the operations of the BSSD's programs for fiscal years 2014, 2015, and 2016. This includes funding at national laboratories and universities and other activities handled by the program during this time period. It should also assess the quality of the resulting scientific portfolio, including its breadth and depth and its national and international standing. Additionally, the COV should also assess the division's management and oversight of the JGI user facility for the same time period. Specifically, I would like the panel to consider and provide an evaluation of the following:

1. For both the DOE national laboratory projects and university grants, assess the efficacy and quality of the processes used by BSSD programs during the past three years to:
   a) solicit, review, recommend and document application and proposal actions, and
   b) monitor active awards, projects and programs.

2. Within the boundaries defined by DOE mission and available funding, comment on how the award process has affected:
   a) the breadth and depth of the portfolio elements, and
   b) the national and international standing of the portfolio elements.

COV members will be given access to all program documentation completed during the period under review including applications, proposals, review documents and other requests. COV members may also request, at their discretion, that a representative

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sample of the program portfolio be provided. In response, BSSD may suggest a sample of actions, including new, renewal and supplemental applications and proposals, awards, and declinations. In addition, COV members may also choose to review files through a random selection process. The guidance for all COV reviews within the Office of Science can be found at http://science.energy.gov/sc-2/committees-of-visitors/ and attachments therein.

The COV should take place in the third quarter of FY 2017 (Summer 2017) at the BER/DOE Germantown location at 19901 Germantown Road, Germantown, Maryland 20874-1290. A discussion of the COV report by BERAC should be held no later than the Fall 2017 BERAC meeting. Following acceptance of the full BERAC membership, the COV report with findings and recommendations is to be presented to me, as the Director, Office of Science.

If you have any questions regarding this charge, please contact Todd Anderson, 301-903-3213 or by email Todd.Anderson@science.doe.gov.

Sincerely,

C. A. Murray
Director, Office of Science

cc: Sharlene Weatherwax
Todd Anderson
Tristram West