

Plant-Microbe Interactions: An Overview of Basic Research Supported by the DOE Office of Science

**Symbiosis Conference:
Expanding Commercialization of Mutualistic Microbes to
Increase Bioenergy Crop Production**

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June 20, 2013

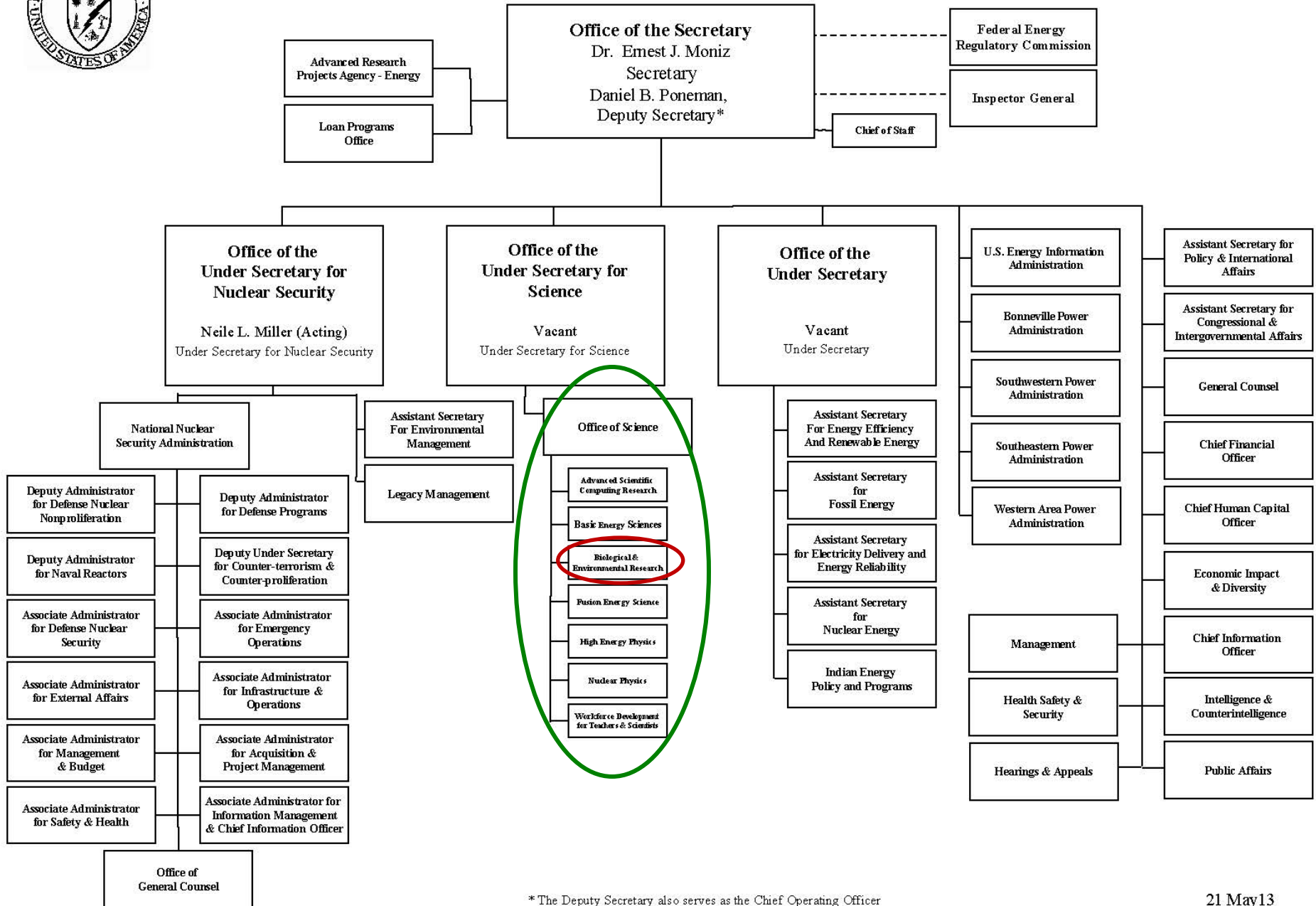
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DEPARTMENT OF ENERGY



* The Deputy Secretary also serves as the Chief Operating Officer

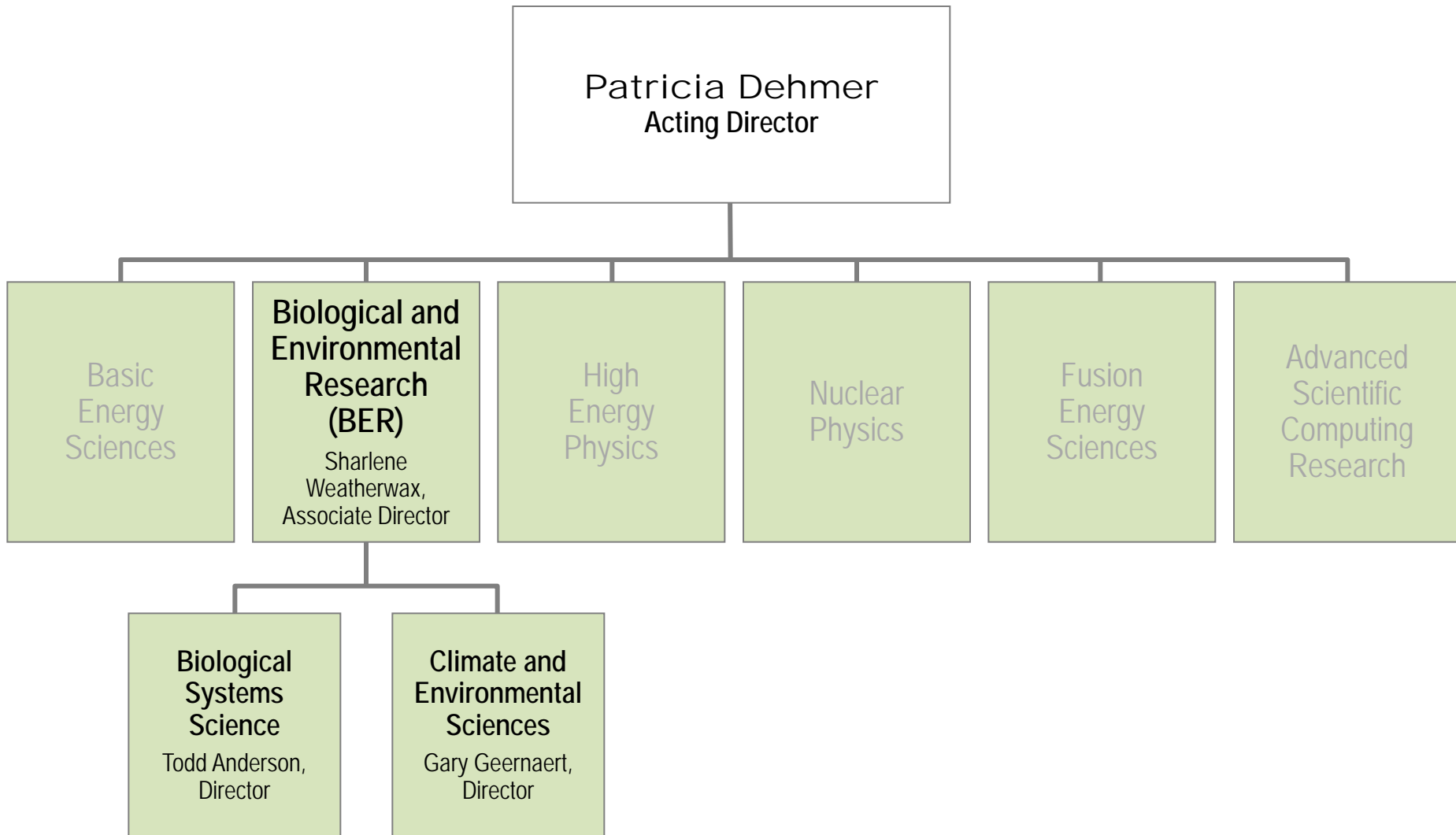
DOE Office of Science: Science with a Mission

- Advancing the Energy, Economic, and National Security of the United States

Office of Biological and Environmental Research (BER)

- Mission: Support foundational science to understand complex biological, climatic, and environmental systems across spatial and temporal scales.

Department of Energy Office of Science

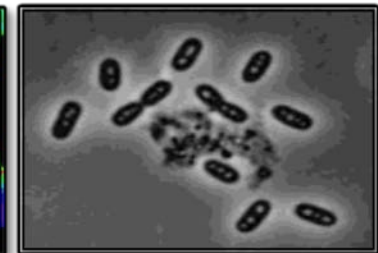
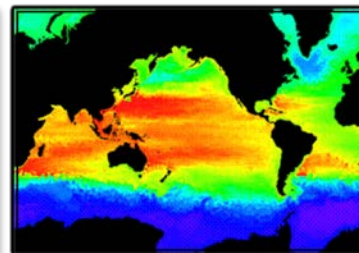


Biological and Environmental Research

Understand complex biological, climatic, and environmental systems across spatial and temporal scales.

BER provides the foundational science to:

- Support the development of biofuels as major, secure, and sustainable national energy resources
- Understand the potential effects of greenhouse gas emissions on Earth's climate and biosphere and the implications of these emissions for our energy future
- Predict the fate and transport of contaminants in the subsurface environment at DOE sites
- Develop new tools to explore the interface of biological and physical sciences



Biological and Environmental Research Approach

- Understanding complex biological and environmental systems across many spatial and temporal scales:
 - From the sub-micron to the global
 - From individual molecules to ecosystems
 - From nanoseconds to millennia
- Integrating science by tightly coupling theory, observations, experiments, models, and simulations
- Supporting interdisciplinary research to address critical national needs
- Engaging national laboratories, universities, and the private sector to generate the best possible science

