Pacific Northwest
NATIONAL LABORATORY
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Pacific Northwest National Laboratory: Overview and Science Directions

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Earth and Biological Sciences Directorate

BERAC Spring Meeting

PNNL Mission and Overview

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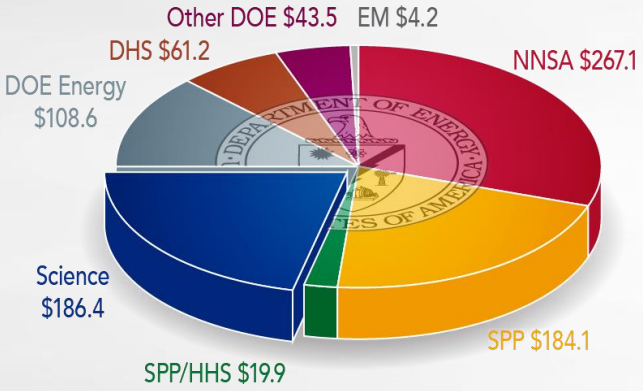
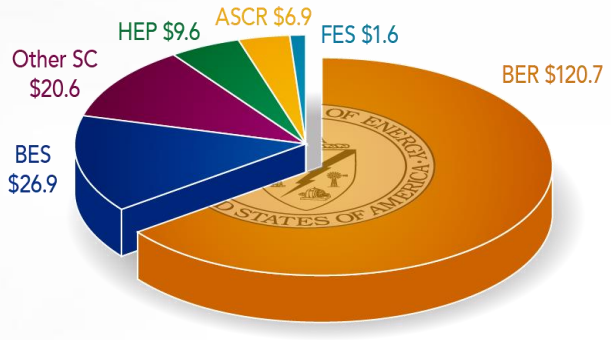
PNNL Science Vision: Understand, Predict, and Control Complex Adaptive Systems

FY15 Total Business Volume: $875M



FY15 Total SC Business Volume: $186.4M



We leverage investments to bring value to BER programs in areas like data analytics, applied math, and computational science.

Research & Facility Core Capabilities

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- Biological System Science
- Atmospheric Sciences and Climate Systems Science
- Earth System Science and Engineering
- Environmental Subsurface Science
- Large Scale User Facilities and Advanced Instrumentation

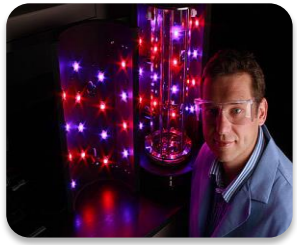
EMSL

ARM

Marine Sciences Laboratory

Atmospheric Measurements Laboratory

Microbial Dynamics Laboratory



Strategic Future Science Priorities:
Integrated Earth Systems in Transition: Understand, Predict and Control

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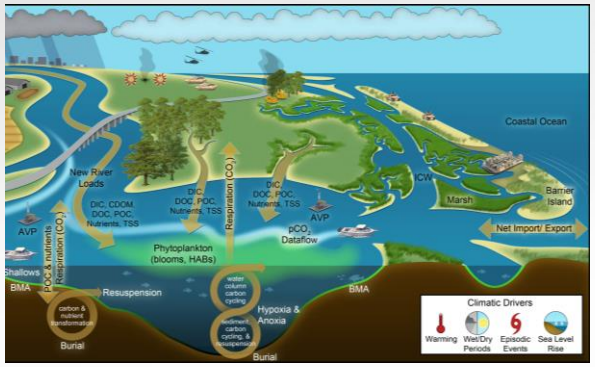
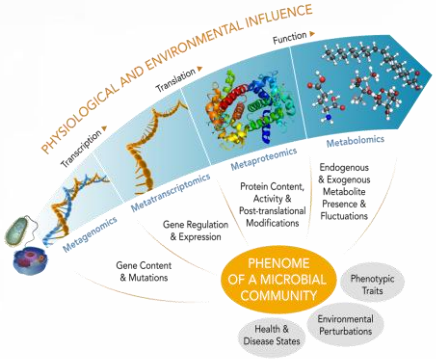
Terrestrial Aquatic Ecosystems

- Revolutionize our understanding of how hydrologic, biogeochemical, and human processes influence:
  - The global carbon cycle
  - The resilience of natural, managed, and engineered systems.



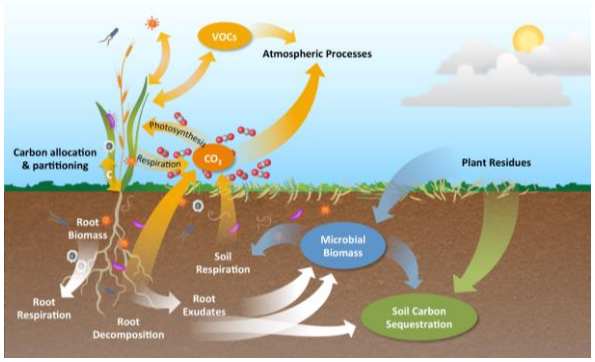
Microbiomes in Transition (MinT)

- Decipher Environmental Microbiome Interactions: Predict climate change impacts on carbon & nutrient cycles and energy flux.



Integrated Plant, Atmosphere, Soil System (iPASS)

- Develop a computational model of virtual Plant-Atmosphere-Soil Systems (vPASS), with predictive linkages between plant genotype, environment and the plant-microbe-atmosphere-soil interactome.



Partnerships

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Joint Global Change Research Institute

UNIVERSITY of WASHINGTON

Dual appointments,

Atmospheric and climate, coastal systems

Integrated water cycle, biogeochemistry