

Pacific Northwest
NATIONAL LABORATORY

Proudly Operated by **Battelle** *Since 1965*

Pacific Northwest National Laboratory: Overview and Science Directions

ALLISON A. CAMPBELL, PH.D.

Earth and Biological Sciences Directorate

BERAC Spring Meeting

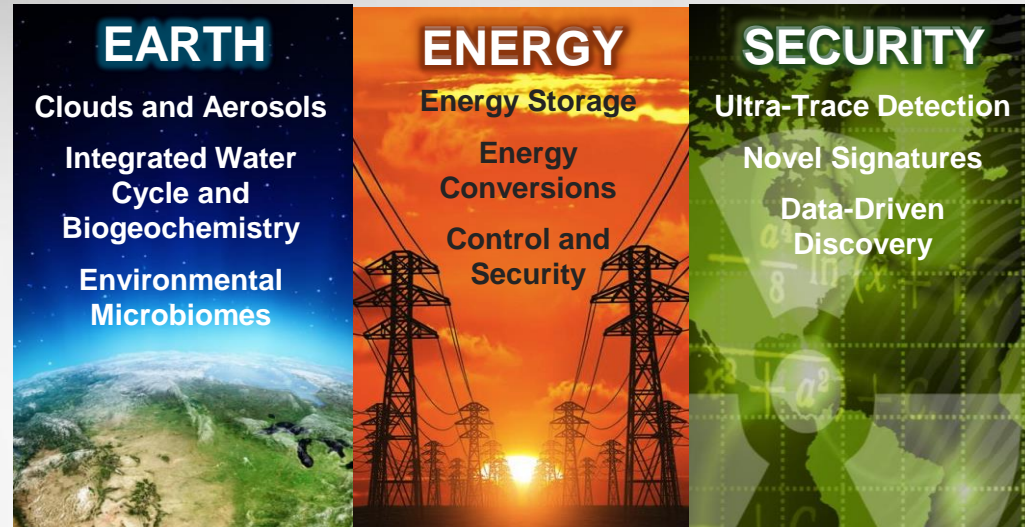
PNNL Mission and Overview



Pacific Northwest
NATIONAL LABORATORY

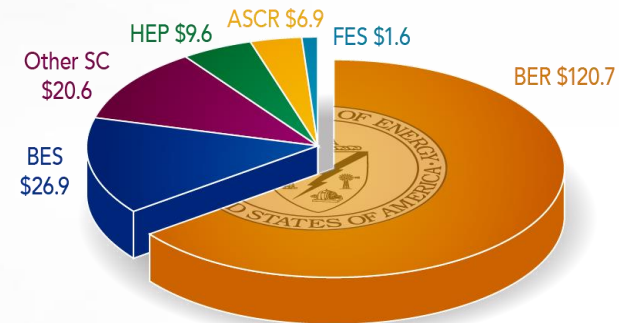
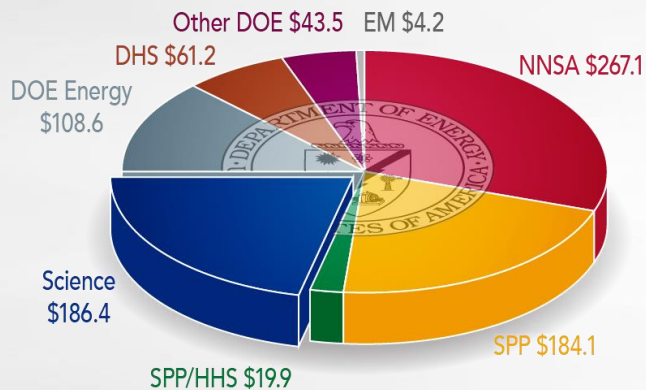
Proudly Operated by **Battelle** Since 1965

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



Pacific Northwest
NATIONAL LABORATORY

Proudly Operated by **Battelle** Since 1965

EARTH

Clouds and Aerosols

Integrated water
cycle and
biogeochemistry

Environmental
Microbiomes



- 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



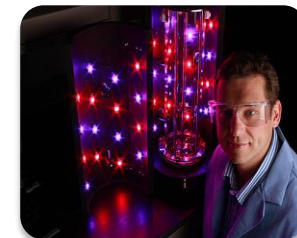
Marine
Sciences
Laboratory



Atmospheric
Measurements
Laboratory



Microbial
Dynamics
Laboratory



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



Pacific Northwest
NATIONAL LABORATORY

Proudly Operated by **Battelle** Since 1965

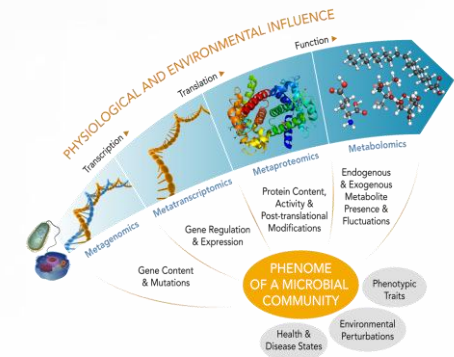
Terrestrial Aquatic Ecosystems

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



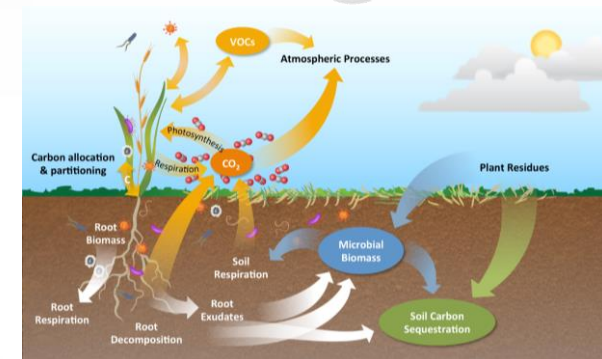
Microbiomes in Transition (MinT)

- ▶ 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



Pacific Northwest
NATIONAL LABORATORY

Proudly Operated by **Battelle** Since 1965



Joint Global
Change Research
Institute

W

UNIVERSITY of WASHINGTON

Dual appointments,
Atmospheric and climate,
coastal systems



THE UNIVERSITY
OF ARIZONA.

Integrated water cycle,
biogeochemistry



jbei
Joint BioEnergy Institute