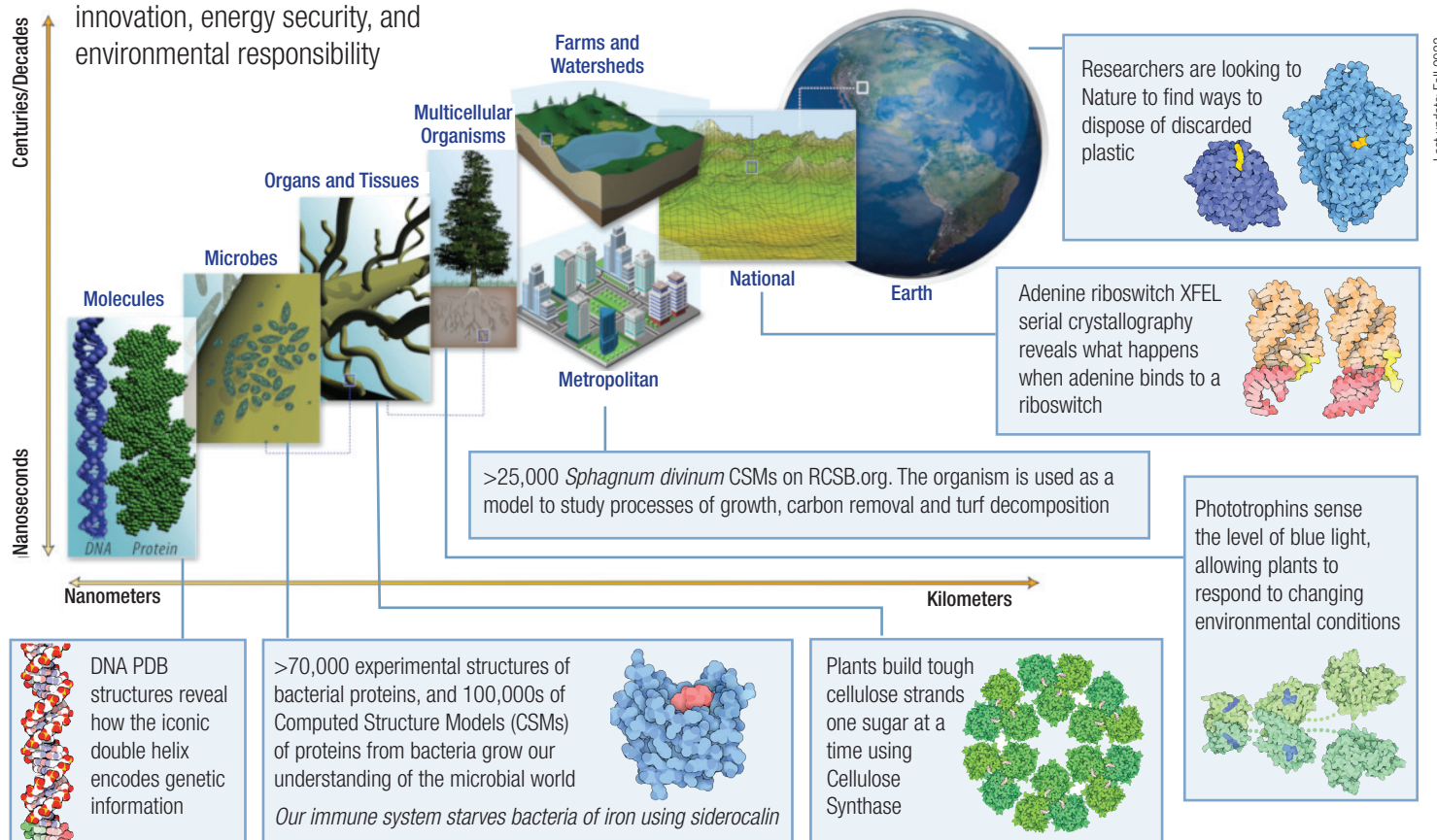


Supporting the Research Goals of DOE

The data on RCSB.org support the U.S. Department of Energy (DOE) missions in scientific discovery and innovation, energy security, and environmental responsibility



Last update: Fall 2023

Supporting the Research Goals of DOE

- RCSB PDB safeguards structural breakthroughs (Synchrotron, Neutron, and Cryo-EM) generated with DOE funding:
 - >\$5.7 Billion worth of DOE data over the lifetime of the PDB
- PDB structures have contributed data to more than 1 million published research papers
- PDB structures reveal how photosynthesis works in plants, bioenergy production, and opportunities for CO₂ sequestration
- RCSB PDB provides facile access to >200,000 experimental structures and >1 million Computed Structure Models
- Integration of RCSB PDB and KBase Resources supports basic and applied research in plant molecular biology and microbial physiology

Supporting DOE Facilities for Synchrotron, Neutron, and Cryo-EM

RCSB PDB supports the fundamental research and cryo-EM facilities funded by the DOE Biological and Environmental Research program. RCSB PDB also supports scientific user facilities funded by DOE Basic Energy Sciences, including Advanced Photon Source, Advanced Light Source, and National Synchrotron Light Source II; Linac Coherent Light Source-II; and neutron diffraction instruments at Oak Ridge National Laboratory

- DOE Synchrotrons have produced >56,000 PDB structures over their lifetime
- RCSB PDB hosts BioSync (biosync.rcsb.org), an online Guide to High Energy Data Collection Facilities
 - Provides up-to-date information on over 130 X-ray beamlines at facilities worldwide
- Supporting XFEL/SX and SLAC LCLS
 - Over 850 structures deposited to PDB (41% from LCLS)
 - Data dictionary extensions in PDB will enable faithful representation of experiments
 - Deposition improvements will facilitate batch data submission, validation, and biocuration