Supporting the Research Goals of DOE

PDB connects everything from genes to ecosystems to support discovery of biobased solutions to energy and environment challenges.

Supporting DOE Synchrotrons

- 80% of PDB structures deposited each year from the US come from DOE Synchrotrons
- DOE Synchrotrons have produced >43,000 PDB structures over their lifetime
- RCSB PDB hosts BioSync (biosync.rcsb.org), an online Guide to High Energy Data Collection Facilities. BioSync provides up-to-date information on over 130 X-ray beamlines at synchrotron radiation facilities worldwide

Supporting SFX/XFEL and SLAC LCLS

- >200 structures deposited to PDB (60% from LCLS)
- Data dictionary extensions in PDB will enable faithful representation of XFEL experiments
- Deposition improvements will facilitate batch data submission, validation, and biocuration

Value for DOE

- RCSB PDB safeguards structural biology data generated with DOE funding:
  » $4.2 Billion worth of DOE data over the lifetime of the PDB
- PDB structures have contributed data to nearly 1 million published research papers
- PDB structures reveal how
  » Photosynthesis works in plants, driving innovation in bioenergy production
  » Glyphosate resistance can be engineered into plants to increase food production

Filling the PDB archive with new protein structures is one of 75 Breakthroughs by the US Department of Energy’s National Laboratories