# Supporting the Research Goals of DOE



#### rcsb.org



#### **Supporting DOE Synchrotrons**

- ~80% of PDB structures deposited in 2019 from the US come from DOE Synchrotrons
- 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. BioSync provides up-to-date information on over 110 X-ray beamlines at synchrotron radiation facilities worldwide

### Supporting SFX/XFEL and SLAC LCLS

- >400 structures deposited to PDB (52% 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 more than 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**<sup>\*</sup> by the US Department of Energy's National Laboratories