**MISSION:** To understand the means by which biology controls the kinetics and thermodynamics of electron bifurcation at both organic and inorganic centers, electron transfer relays, allosteric coupling, and cooperative conformational dynamics.

**RESEARCH PLAN**

Develop a collective knowledge of metalloenzymes as models for redox reactions by applying physical science and computational tools to characterize biochemical reactions catalyzed by multi-subunit enzymes harboring arrays of iron-sulfur clusters and flavin cofactors. Understanding these mechanisms is central to overcoming the thermodynamic barriers that currently limit production of reduced products and fuels.

[http://betcy-efrc.org/]