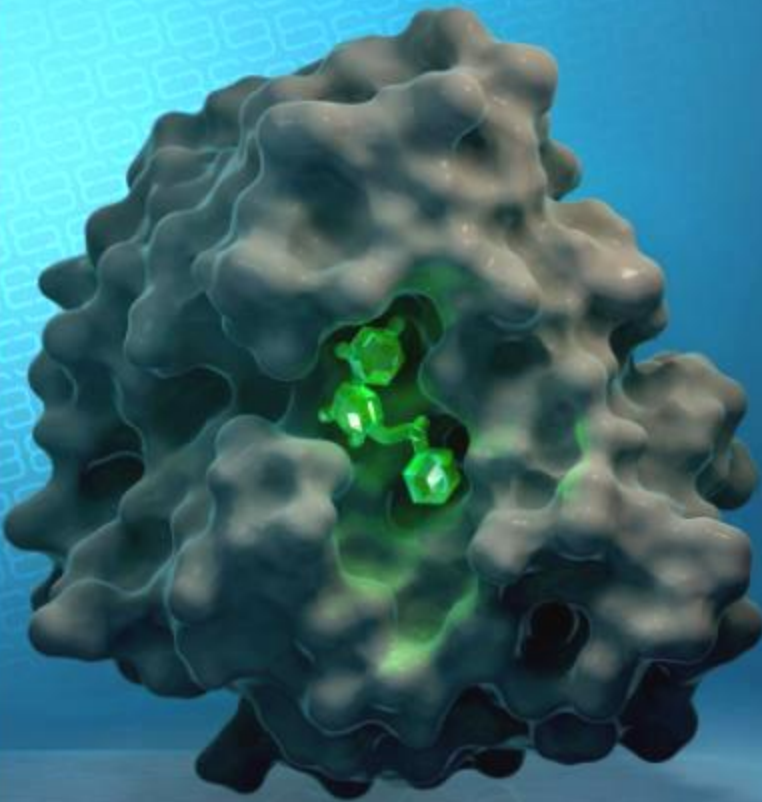


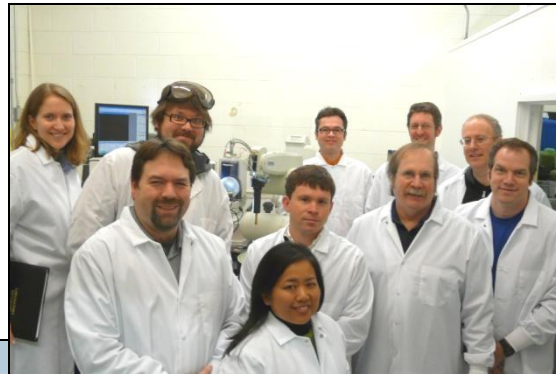
**Experience
Quality
Collaboration**

Gene to Structure Services



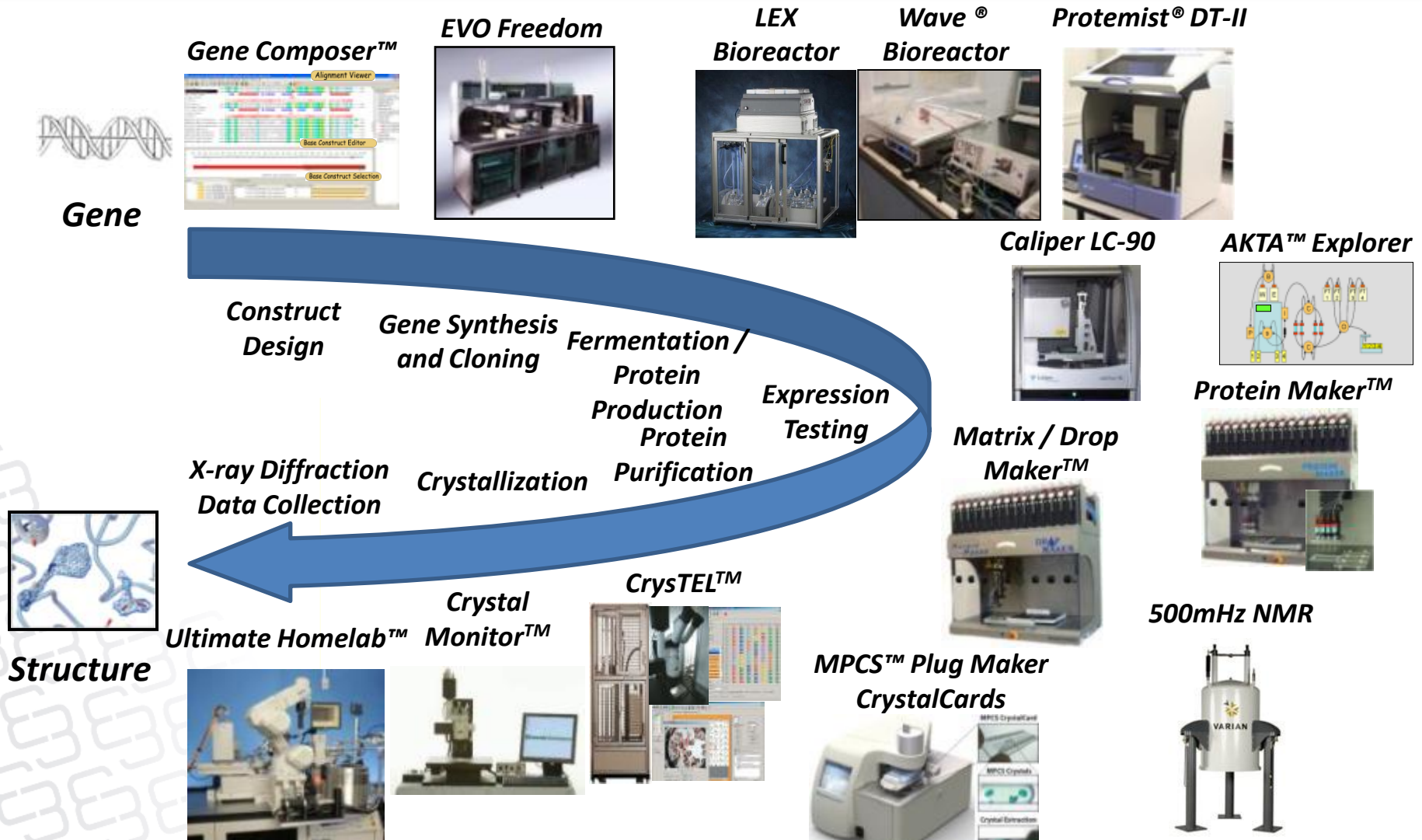
Emerald BioStructures: A Collaborative Research Organization With Gene-Structure-Lead Capabilities

- Located on Bainbridge Island, near Seattle, WA, 28,000 Sq. Ft.
- ~50 Employees: 16 Ph.D., 9 M.S., 25 B.S.
- Over 12 years experience in structural biology collaboration



Gene-to-Structure Pipeline

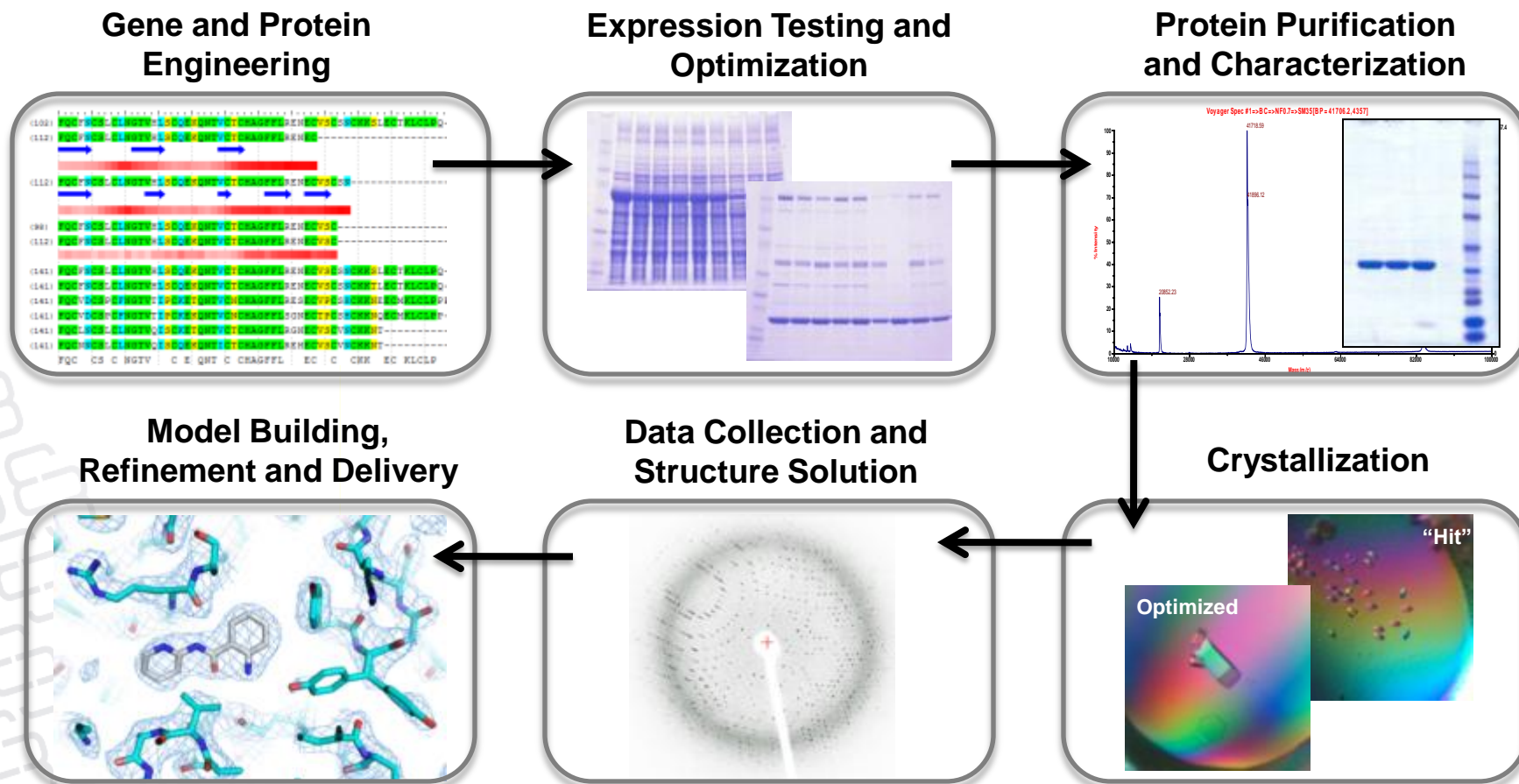
>2,000 crystals examined, generating 100s of structures per month



Gene-to-Structure Pathway

Efficient Core Lab Functions

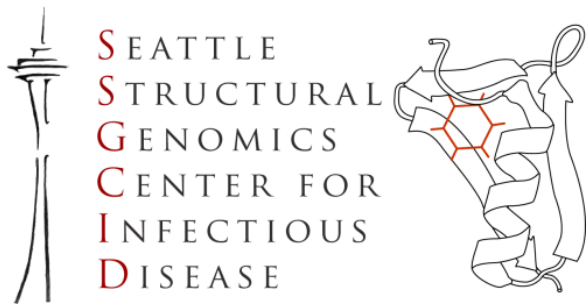
- Gene-to-Structure typically completed in ~30-90 days
- >85% Success Rate for Ligand-Bound Co-Structure Determination



Large Infectious Disease Contract

Solving 100s of Infectious Disease Protein Targets

- **S**eattle **S**tructural **G**enomics **C**enter for **I**nfectious **D**isease
 - **Goal:** Produce 500+ structures of novel infectious disease targets
 - **Impact:** Blueprint for structure-based drug discovery
 - **Funding:** \$13.5 M over five years
 - **Emerald is the only CRO that collaborates on such a large scale.**



Proudly Operated by **Battelle** Since 1965



Experienced Team

PhD crystallography team with >100 years combined experience

Difficult Targets are Our Specialty

- First PDE4 regulatory domain crystal structures: Burgin *et al.* Nature Biotechnology. 2010. 28(1): 63-70.
- First bacterial DNA polymerase (PolC) bound to DNA with transition state analog: Evans *et al.* Proc. Natl. Acad. Sci. 2008. 105(2):20695-700.
- First structures of topoisomerase I covalently bound to DNA with three classes of anticancer agents: Staker *et al.* 2005. J. Med. Chem. 48(7):2336-45.

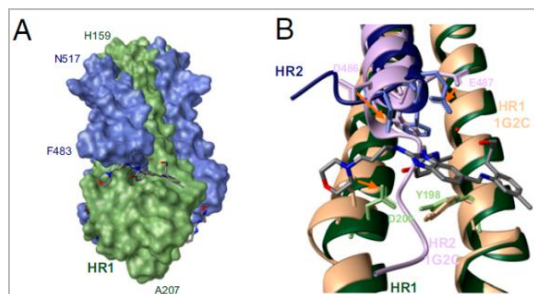
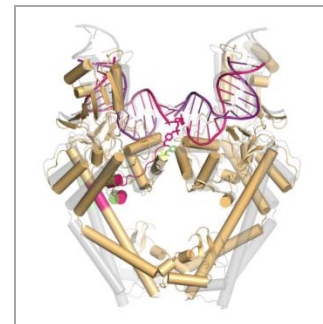


Recent Collaborative Publications

Univ. California Berkeley

“A novel and unified two-metal mechanism for DNA cleavage by type II and 1A topoisomerases”

Schmidt *et al.* 2010. *Nature*, 465:641-644.



Tibotec

“Binding of a potent small-molecule inhibitor of six-helix bundle formation requires interactions with both heptad-repeats of the RSV fusion protein”

Roymans *et al.* 2009. *Proc. Natl. Acad. Sci.* 107(1): 308-313.

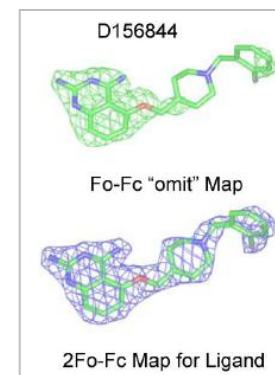
PDB ID: 3KPE

Families for Spinal Muscular Atrophy

“DcpS as a therapeutic target for spinal muscular atrophy”

Singh *et al.* 2008. *Chem. Biol.* 3(11): 711-722.

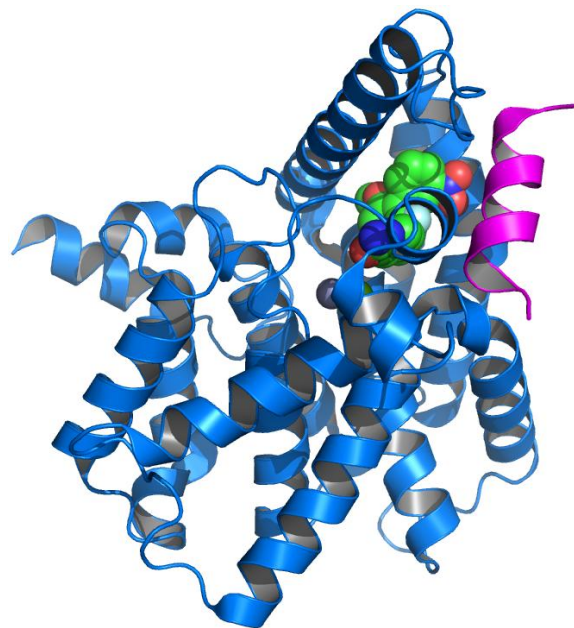
PDB ID: 3BL7, 3BL9, 3BLA



Structural Biology Services

Benefit from unique and proprietary platforms including:

- **Crystal Ready™** – rapid delivery of ligand bound co-crystal structures from our ready-to-go protein target - starting at \$9,000
- **Pipeline Crystals™** – rapid delivery of ligand bound co-crystal structures of any soluble protein described in the protein data bank (PDB) - starting at \$19,000
- **Fragments of Life™** – a new approach to fragment-based screening and lead identification
- **Gene to Structure** – collaborative research leveraging our highly automated pipeline for protein-ligand co-crystal structures, especially designed for difficult protein targets
 - **Design of expression-optimized synthetic genes**
 - **High throughput protein expression**
 - **Parallel protein purification**
 - **Assay development and HT assays**
 - **Biophysical interaction studies**
 - **NMR screening and characterization**
 - **Microfluidic crystallization**
 - **Membrane Protein expertise**
 - **High-throughput crystallization screening**
 - **Automated X-ray data collection &**
 - **Experienced team for high quality structure determination**



The faces of Emerald BioStructures



7/10/2010

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