SHENGFANG SUN (BIOCHEMISTRY)

RESEARCH ADVISOR: DR. JOHN H. DAWSON

FIRST YEAR

Took four graduate courses: Biological Chemistry, Structural and Functional Nucleic Acid, Research in Microbiology and Immunobiology and Topics in Advanced Neural Cell

SECOND YEAR

Presented a biochemistry divisional seminar (fall): *Dehaloperoxidase (DHP)* and *Notomastus chloroperoxidase (NCPO): globins with catalytic functions*

FIFTH YEAR

Poster presentation at the Oakwood Products Graduate Student Poster Competition

2014 Outstanding Dissertation Award, USC Graduate School

AFTER GRADUATION

Postdoctoral Fellow at the Florida State University, in the lab of Dr. Hong Li (Department of Chemistry and Biochemistry)

FACTS:

FIRST YEAR

- Teaching assistant for Fundamental Chemistry (fall)
- Rotations in the lab of Dr. Qian Wang (fall) and Dr. John H. Dawson (spring)
- Selected Dr. John H. Dawson as research advisor and began research (spring)

SECOND YEAR

- Took one graduate course: Introduction to Crystallography
- Passed oral comprehensive and research plan (spring)*: Structural and functional studies of Amphitrite Ornata dehaloperoxidase that has dual physiological roles*
- Collaborated with the lab of Dr. Daping Fan (University of South Carolina Medical School) on the project of "A new recombinant human apolipoprotein E mimetic peptide"

THIRD YEAR

- Teaching assistant for General Chemistry (spring)
- Passed written comprehensive and original research proposal (fall): *Identification of intracellular proteins interacting with PCSK9: implications in the mechanism of PCSK9-mediated LDLR degradation*
- Presented a biochemistry divisional seminar (spring): S*tructural and functional studies of Amphitrite Ornata dehaloperoxidase that has dual physiological roles*

FOURTH YEAR

- Awarded J.R. During Graduate Student Travel Award
- Poster presentations at the 18th International Conference on Cytochrome P450, Seattle, Washington
- Teaching assistant for General Chemistry (spring)
- Collaborated with the lab of Dr. Rajagopalan Bhaskaran (Claflin University) on the project of "NMR discovery of the substrate binding site of *Dehaloperoxidase (DHP)*"

FIFTH YEAR

- Teaching assistant for General Chemistry (spring)
- Oral presentation at the USC Graduate Student Day
- Wrote and defended Ph.D. dissertation: *Insights into the evolutional adaptations and functional switching mechanism in dual function hemoglobin/dehaloperoxidase (DHP)*

REPRESENTATIVE PUBLICATIONS

"Mono-and bis-phosphine-ligated H93G myoglobin: Spectral models for ferrous-phosphine and ferrous-CO cytochrome P450" *J. Inorg. Biochem.* 2013. 127, 238-245.

"Complexes of dual-function hemoglobin/dehaloperoxidase with substrate 2, 4, 6-trichlorophenol are inhibitory and indicate binding of halophenol to compound I" *Biochemistry*. 2013. 6203-6210.

"Influence of heme environment structure on dioxygen affinity for the dual function Amphitrite ornata hemoglobin/dehaloperoxidase. Insights into the evolutional structure–function adaptations" *Arch. Biochem. Biophys*. 2014. 545, 108-115.

"Evidence for direct involvement of substrate TCP radical in functional switching from oxyferrous O_2 carrier to ferric peroxidase in the dual function hemoglobin/dehaloperoxidase from *Amphitrite ornata" Biochemistry*. 2014. in press.