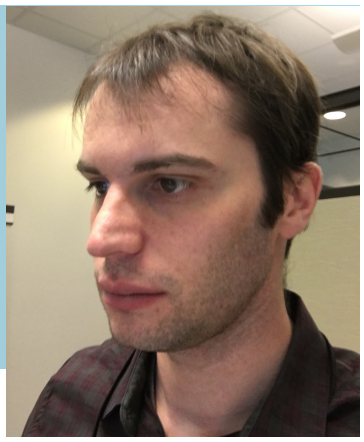
Lee A. Solomon

Postdoctoral Researcher
Nanophotonics and Biofunctional Structures group

Center for Nanoscale Materials
Building 440, Room A120G
Phone: 630-252-3295
E-mail: lsolomon@anl.gov

Argonne National Laboratory
9700 S Cass Ave., Argonne, IL 60439



Education

B.A./M. S. Biological Sciences, State University of New York at Buffalo
Ph.D. Biochemistry and Molecular Biophysics, University of Pennsylvania

Awards and honors

January 2011	PARC Scientific Exchange award
June 2011	GAPSA Travel Grant Awardee
September 2013	PARC Scientific Exchange award
April 2014	BSD Postdoctoral Symposium Best Abstract Award
April 2015	PSE Selection for Argonne Earth Day Presentation
June 2015	Nanoscience NY Soft Nano Best Poster Award (1 award granted out of 30 contestants)

Research interests

- Application of protein design to solve problems related to biology and the improvement of natural functions.
- Using protein design for the generation of artificial systems capable of non-natural applications.

Professional Experience

2014-Present **Post-Doctoral Scholar** – Argonne National Laboratory
Advisor – H. Christopher Fry

2014 **Post-Doctoral Scholar** - University of Chicago
Advisor - Jared C. Lewis

2006-2013 **Ph.D.** - University of Pennsylvania
Ph.D. Advisor - P. Leslie Dutton
The Physical Chemistry Underlying the Assembly and Midpoint Potential Control in a Series of Designed Protein-Maquettes.

2001-2006 **Combined BA/MS** in Biological Sciences – University at Buffalo
MS Advisor - Gerald Koudelka
Using Fluorescence Resonance Energy Transfer to characterize the orientation and structural changes of the 434-repressor protein bound to DNA

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Selected Publications

1. Koder R.L., Anderson J.L.R., **Solomon L.A.**, Reddy K.S., Moser C.C., and Dutton P.L.. Design and engineering of an O2 transport protein. *Nature* **2009**, *458*, 305-309

2. Lichtenstein B.R., Farid T.A. Kodali G., **Solomon L.A.,** Anderson J.L.R., Sheehan M.M., Ennist N.M., Fry B.A., Chobot S.E., Bialas C., Mancini J.A., Armstrong C.T., Zhao Z.Y., Esipova T.V., Snell D., Vinogradov S.A., Discher B.M., Moser C.C., Dutton P.L.. Engineering Oxidoreductases: Maquette Proteins Designed From Scratch. *Biochem Soc Trans.* **2012**, *40*, 561-566

3. Farid T.A.*, Kodali G.*, **Solomon L.A.***, Lichtenstein B.R., Sheehan M.M., Fry B.A., Bialas C., Ennist N.M., Siedlecki J.A., Zhao Z., Stetz M.A., Valentine K.G., Anderson J.L.R., Discher B.M., Wand A.J., Moser C.C. and Dutton P.L.. Design of a Single Chain Four-α-Helical Protein for Diverse Oxidoreductase Functions. *Nature Chem. Biol.* **2013**, 9 (12), 826-833
   ***** Indicates equal authorship

4. **Solomon L.A.**, Kodali G., Moser C.C., and Dutton P.L.. Engineering the Assembly of Heme Cofactors in Man-Made Proteins. *J. Am. Chem. Soc.* **2014**, 136 (8), 3192-3199

5. Fry B.A., **Solomon L.A.**, Dutton P.L., and Moser C.C.. Design and Engineering of a Man-Made Diffusive Electron-Transport Protein. In press in *Biochimica Biophysic Acta: Bioenergetics*

Publications: In Preparation or Submitted

6. Deshmukh S.A., **Solomon L.A.**, Kamath G., Fry H.C., and Sankaranarayanan S.KR.R.. Water Ordering Controls the Dynamic Equilibrium of Micelle-Fiber Formation in Self-Assembly of Peptide Amphiphiles. In Review at *Nature Communications*

7. Kodali G., Mancini J.A., **Solomon L.A.**, Esipova T., Roach N., Hobbs C.J., Wagner P., Mass O.A., Kunche A., Barnsley J.E., Gordon K.C., Officer D.L., Dutton P.L., and Moser C.C.. Design and Engineering of Water-Soluble Light-Harvesting Protein Maquettes. In Review at *Chemical Science*

8. **Solomon L.A.**, Kronenberg J., Fry H.C.. Heme Coordination Tuning Using a Peptide Amphphilic Platform. Submitted

9. **Solomon L.A.**, and Fry H.C.. Harvesting and Propagation of Light Energy in Peptide Amphiphile Assemblies. In Preparation