Dr. H. Christopher Fry
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Professional Background:

- **Postdoctoral Fellow**. University of Pennsylvania, Philadelphia, PA.
- **Postdoctoral Fellow**. Northwestern University, Evanston, IL.

Research Summary:

- Synthesis of novel macrocyclic molecules as cofactors for *de novo* designed proteins and non-natural molecules with enhanced and novel functions in a biomolecular framework.
- Design of peptides and synthetic molecules with novel functions that when coupled to a nanoparticle surface offer novel functionality useful in energy transduction.
- *De novo* design and synthesis of peptides (e.g., coiled coil peptides) and proteins encapsulating non-native electro-optic chromophores.
- Self-assembly of organic molecules for applications in photovoltaics.

Selected Recent Publications:

H. C. Fry; A. Lehmann; L. Sinks; I. Asselberghs; A. Tronin; V. Krishnan; J. K. Blasie; K. Clays; W. F. DeGrado; J. G. Saven; M. J. Therien. "Computational *de novo* design of a single chain tetra-α-helical protein encapsulating a non-linear optic chromophore," *in preparation*.

H. C. Fry; A. Lehmann; J. G. Saven; W. F. DeGrado; M. J. Therien. *J. Am. Chem. Soc.* "Design and elaboration of a *de novo* heterotetrameric α-helical protein that selectively binds an emissive abiological (porphinato)zinc chromophore." *J. Am. Chem. Soc., submitted*.

K. A McAllister; H. L. Zou; F. V. Cochran; G. M. Bender; A. Senes; **H. C. Fry**; V. Nanda; P. A. Keenan; J. D. Lear; J. G. Saven; M. J. Therien; J. K. Blasie; W. F. DeGrado. "Using alpha-helical coiled-coils to design nanostructured metalloporphyrin arrays." *J. Am. Chem. Soc.* **2008**, *130*, 11921.

H. C. Fry; H. R. Lucas; L. N. Zakharov; A. L. Rheingold; G. J. Meyer; K. D. Karlin. "Intermolecular versus intramolecular electron-/atom- (Cl-center dot) transfer in heme-iron and copper pyridylalkylamine complexes." *Inorg. Chim. Acta* **2008**, *361*, 1100.

H. C. Fry; H. R. Lucas; A. A. N. Sarjeant; K. D. Karlin; G. J. Meyer. "Carbon monoxide coordination and reversible photodissociation in copper(I) pyridylalkylamine compounds." *Inorg. Chem.* **2008**, *47*, 241.

D. Maiti; **H. C. Fry**; J. S. Woertink; M. A. Vance; E. I. Solomon; K. D. Karlin. "A 1:1 copper-dioxygen adduct is an end-on bound superoxo copper(II) complex which undergoes oxygenation reactions with phenols." *J. Am. Chem. Soc.* **2007,** *129*, 264.

G. M. Bender; A. Lehmann; H. Zou; H. Cheng; **H. C. Fry**; D. Engel; M. J. Therien; J. K. Blasie; H. Roder; J. G. Saven; W. F. DeGrado. "*De novo* design of a single-chain diphenylporphyrin metalloprotein." *J. Am. Chem. Soc.* **2007,** *129*, 10732.