

Postdoctoral Associate in X-ray and Electron Based Methods for Probing Biomolecular Structure and Function

One or two postdoctoral positions are available in development of experimental and computational/analysis methods for X-ray crystallography and small-angle X-ray scattering of biomolecules, and in the development of experimental methods for cryo-electron microscopy. The group of Prof. Robert Thorne at Cornell University studies a variety of biological physics problems relevant in probing and understanding biomolecular structure and function, and develops new methods for synchrotron X-ray and electron diffraction-based study of biomolecular systems.

The postdoctoral position(s) will focus on developing and applying methods for variable temperature and time-resolved crystallography, for cryogenic and time-resolved variable-temperature small-angle X-ray scattering, for single-particle cryo-electron microscopy, and for interpreting the resulting data to extract information about biomolecular structure, function, and energy landscapes. These methods will allow fundamental biophysical questions regarding enzymatic mechanisms, protein folding, allostery, and solvent structure and interactions to be addressed.

The work will make extensive use of the highly flexible facilities for X-ray science available at the Cornell High-Energy Synchrotron Source (CHESS) (www.chess.cornell.edu), and the outstanding microbeam capabilities at NSLS-II.

The work may involve CAD design and microfabrication (using Cornell's outstanding Nanofabrication Facility (www.cnf.cornell.edu)), protein expression and purification, X-ray data collection (at CHESS, NSLS, or APS), electron diffraction data collection and analysis using Cornell facilities, laboratory-based experiments, and modeling and analysis of data. The postdoctoral associate(s) will be expected to collaborate with CHESS staff scientists and other members of the structural biology and X-ray science communities at Cornell, and to assist in supervising graduate and especially undergraduate students.

Applicants may have a Ph.D. in biophysics, structural/molecular biology, chemistry, physics, applied physics, materials science or related fields.

The initial Postdoctoral Associate appointment will be for one year, with the expectation for renewal for at least one additional year. Start dates are flexible and can be as early as January 2020.

Application material should be submitted to ret6@cornell.edu. Complete applications will include a brief cover letter, a CV, a detailed summary of research experience and interests, and three letters of recommendation. Recommendation letters, if not initially provided, will be requested after application screening.

Diversity and inclusion are a part of Cornell University's heritage. The College of Arts and Sciences at Cornell embrace diversity and seek candidates who will create a climate that attracts students and faculty of all races, nationalities, and genders. We strongly encourage women and underrepresented minorities to apply. Cornell University is a recognized EEO/AA employer and educator, valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.