



Postdoctoral Research Associate Position in High-Throughput Biochemistry Laboratory

The Stanford Synchrotron Radiation Lightsource (SSRL), a Directorate of the SLAC National Accelerator Laboratory and Stanford University, invites applications for a Postdoctoral Research Associate with a strong background in biophysical chemistry and structural biology.

In this position, you will work within a rich scientific environment at SLAC and Stanford University establishing a novel high-throughput pipeline capable of returning structural and functional information about protein variants. In this role you will determine protein structures applying macromolecular crystallography methods. Further, you will generate variant libraries for high-throughput protein expression, generation of custom cell-free expression reagents for and perform microfluidics-based expression, purification, and functional characterization, extract kinetic data, generate models of how mutations are exerting effects and identify variants for additional structural characterization. You may also explore novel methods applying microfluidics for diffraction and x-ray spectroscopy measurements. The resulting high-resolution structural and mutational datasets you produce will support advances in AI-driven protein modeling and accelerate next-generation protein engineering efforts. Through this effort, you will work with numerous collaborators on a variety of projects. You will be involved in the publication of results.

Key responsibilities of this role are focused on:

- Generation of custom cell-free expression reagents
- Expression and purification of numerous types of proteins
- Perform experiments to crystallize proteins
- Co-crystallize proteins with compounds and fragments
- Prepare samples for data collection
- Solve and refine crystal structures
- Generate variant libraries within novel microfluidics
- Extract and process spectroscopy and imaging data
- Perform binding studies using bio-layer interferometry (BLI)
- Work collaboratively with SSRL scientists performing biological X-ray measurements

Required qualifications

- A PhD degree in biochemistry, biophysics, biotechnology, or related fields.
- The successful candidate will have a strong history in biochemistry and familiar with various types of equipment in a biochemistry lab.

- Establish cloning, expression, purification protocols and purify difficult recombinant proteins, including membrane proteins, from source cells and running chromatography systems.
- Knowledge of protein posttranslational modifications (PTMs) such as phosphorylation, glycosylation, etc.
- Experience with protein crystallization, co-crystallization, and crystal soaking with a variety of compounds and fragments.
- Familiarity with crystal handling and data collection at synchrotron facilities.
- Working knowledge of modern medicinal chemistry and drug discovery techniques.
- Experience determining protein kinetics (K_{on} , K_{off} , K_D).
- Familiar with the process of PDB validation and depositing protein in the PDB.
- Innovative team player with high energy for a fast-paced environment
- The successful candidate must be highly organized, motivated, able to work independently, and have strong analytical, organizational, and communication skills.
- An understanding of key methodologies of fragment and structure-based drug design.

Preferred qualifications

- Experience working with microfluidics
- **Effective Decisions:** Uses job knowledge and solid judgment to make quality decisions in a timely manner.
- **Self-Development:** Pursues a variety of venues and opportunities to continue learning and developing.
- **Initiative:** Pursues work and interactions proactively with optimism, positive energy, and motivation to move things forward.
- **Adaptability:** Flexes as needed when change occurs, maintains an open outlook while adjusting and accommodating changes.
- **Communication:** Ensures effective information flow to various audiences and creates and delivers clear, appropriate written, spoken, presented messages.
- **Relationships:** Builds relationships to foster trust, collaboration, and a positive climate to achieve common goals.

Application materials should include a **cover letter**, a **statement of research area** including a summary of accomplishments, a **curriculum vitae (CV)**, a **list of publications**, and names of **three references for future letters of recommendation**.

Please email all application materials to Dr. Crissy Tarver at cltarver@slac.stanford.edu.

SLAC is a U.S. Department of Energy (DOE) laboratory operated by Stanford University and based in Menlo Park, CA. The Macromolecular Crystallography Group is part of the Structural and Molecular Biology division of the SSRL directorate.