

Postdoctoral job description

Are you looking to apply your skills in Integrative Structural Biology to the development of new approaches to explore organization of functional bacterial chromosome? The SIBYLS Group at Lawrence Berkeley National Laboratory is seeking a Postdoctoral Fellow in the field of Integrative Structural Biology. The SIBYLS group utilizes a multidisciplinary approach to study the structures and functional mechanisms of large macromolecular assemblies in promoting chromatin reorganization and transcriptional regulation. Our long-term goal is to modulate the functions of important DNA control elements and regulatory proteins or RNA's for the prevention and treatment of various microbial infections or cancers. SIBYLS is also a world class synchrotron resource for structural biologists located at the Advanced Light Source, Lawrence Berkeley National Lab. SIBYLS scientists maintain productive research programs in chromatin remodeling, DNA damage responses, and genome stability. In addition, SIBYLS staff has excellent access and exposure to unique facilities, including the National Center for X-ray Tomography, the Joint Genome Institute sequencing facility, and the Molecular Foundry nanoscience facility. The SIBYLS group also has strong interactions with its neighbor, the University of California Berkeley, providing an unmatched research environment that combines a world-class academic research environment with unique national user facilities.

Essential

Under the general supervision of Dr. Michal Hammel (LBNL) perform research including molecular and biophysical analyses of nucleoprotein assemblies in vitro and cellular imaging at the mesoscale. Approaches to be used include: (1) Soft X-ray tomography at the cell level (2) Static and time-resolved studies by small angle X-ray scattering (SAXS) at the nanoscale level (3) Crystallographic studies at the atomic scale (4) Integration of crystallographic structures, solution data and cell imaging to obtain biologically relevant structures (5) Biochemical and biophysical assays of complexes to define conditions that affect their assembly and activities. (6) In the collaboration with Dr. Sankar Adhya (NCI) integrate results from specialized cellular biology techniques.

Candidates for postdoctoral positions should:

- ➔ Hold or will have a Ph.D. degree in biophysics, bioinformatics, biochemistry or cell biology
- ➔ Passionate about using structural data to influence key scientific decisions
- ➔ Strong hands-on skills in molecular biology and protein biochemistry
- ➔ Proven ability to write own scripts in Linux environment and to utilize cheminformatics tools
- ➔ Broad knowledge in protein characterization, biophysics and bioinformatics with experience in homology modeling and simulation will be helpful to drive projects forward
- ➔ Outstanding candidates with different skill sets will be taken into consideration, spanning from structural biologists with experience in structural biology to cell biologists.
- ➔ Experience in SAXS, SXT or Cryo-EM preferred but not mandatory

Please Email Jane Tanamachi (jtanamachi@lbl.gov) for more information or questions.

Links:

<http://ncxt.lbl.gov/>

<http://newscenter.lbl.gov/2016/07/29/molecular-switch-triggers-bacterial-pathogenicity/>

