Postdoctoral Scholar Position on Investigating CRISPR Mechanism at University of Southern California

The Qin Laboratory in the Chemistry Department of University of Southern California invites applications for two postdoctoral scholar positions supported by funding from NIH and NSF. The selected individual will use a combination of biophysical and biochemical techniques to investigate mechanisms of target recognition by the programmable CRISPR nucleases that are revolutionizing genome engineering. The appointment is available initially for three years contingent on satisfactory research progress. Funding starts in Fall 2018, and salary will commensurate with qualifications.

**Background:** Research in the Qin lab focuses on understanding structure, dynamics, and function of nucleic acids and protein/nucleic acid complexes. A specialty of our group is the development and application of a biophysical method, called Site-Directed Spin Labeling (SDSL), which utilizes a stable radical (i.e., a spin label) and Electron Paramagnetic Resonance (EPR) spectroscopy to obtain structural and dynamic information of bio-molecules. Our lab has developed new SDSL methods for investigating nucleic acids and protein-nucleic acid complexes in bulk solutions and at the single-molecule level. These SDSL tools are uniquely suited to investigate the high-molecular-weight CRISPR-Cas complexes, which encompass protein and nucleic acids.

We have established the use of SDSL to monitor conformational changes of DNA or protein within the CRISPR-Cas9 complex. Current projects, which are funded by NHI and NSF, center on testing hypotheses of target recognition by the type II CRISPR using a combination of spin-labeling, fluorescence spectroscopy, and enzyme kinetics assays. For more information, please visit [http://pzqin.usc.edu/pzqhome/](http://pzqin.usc.edu/pzqhome/).

**Qualification:** Candidate must have a Ph.D. in a relevant field, which includes but is not limited to Chemistry, Biophysical Chemistry, Biochemistry, or Molecular Biology. While all applications will be considered, priority will be given to candidates who have prior experience on either: (i) spin-labeling, EPR spectroscopy, or magnetic resonance studies of biological molecules; or (ii) protein-nucleic acid complexes, including protein expression, mutagenesis, and structural characterization. Excellent writing and communication skills, as evidenced by first author publications, are highly desirable.

To Apply, please email a cover letter, CV and contact information for three references to Professor Peter Qin, pzq@usc.edu