

Postdoc Positions in Studying Conformation and Dynamics of GPCRs

Dr. Libin Ye's lab (www.libinye.com) in the Department of Molecular Biosciences (MBS) at University of South Florida (USF)—Tampa and Moffitt Cancer Center cordially invites candidates for 2 postdoctoral scholar positions in the directions of Bio-NMR and cell signaling. **The lab focuses on studying conformational transition, dynamics, and signal transduction of G protein-coupled receptors (GPCRs).** In our previous study, we were able to delineate the A_{2A} adenosine receptor (A_{2A}R) into four conformational states, including two inactive states and two active states, with the help of an optimized micro-electrostatically sensitive 19F-qNMR reporter and a judiciously labeling strategy ([Ye, et al., Nature, 2016](#)). Conformational transition and allosteric modulation were also investigated at the quantified conformational state level ([Ye, et al., Nature Communications, 2018](#)). Most recently, we proposed to use 19F-qNMR to evaluate ligand bias to circumvent “system bias” ([Wang, et al., Trends Pharmacol. Sci. 2021](#)). With the guide of full-length MD simulation and 19F-qNMR profiled conformational landscape, we created a set of conformation-biased mutants that enabled us to advance the previous 4-state activation model to 5-state ([Wang, et al., Nature Communications, 2023](#)). Most recently, in collaboration with Yifan Cheng's lab at UCSF, we successfully resolved the first ligand-free GPCR-G protein intermediate complex structure with the guide of 19F-qNMR ([in submission](#)). This success opens a new avenue to use 19F-qNMR-guided-cryo-EM in studying the structures and functions of intermediate complex for proteins of interest. Understanding of correlations among ligand-receptor interaction, receptor conformational response, and signaling outputs will expand our capacity in drug discovery.

Applicants with Bio-NMR especially the experience in membrane proteins are particularly welcome to apply. Interested applicants should send a cover letter, a CV, and contact information of three referees to Dr. Ye: libinye@usf.edu.