PhD project in Structural Biology/ Chemical Biology:
New approaches to explore and target hidden protein dynamics

The Fischer lab at St. Jude Children’s Research Hospital is recruiting a graduate student for a project that exploits protein dynamics for ligand discovery against pediatric cancer targets.

You will be part of a young interdisciplinary team that uses structural biology (crystallography, NMR), protein biochemistry, and single-molecule methods to characterize dynamic, disease-relevant protein states. By finding ligands against those flexible protein states, and revealing allosteric networks we can explore new ways to modulate protein malfunction in disease.

Our group is part of the Department of Chemical Biology and Therapeutics, and Structural Biology at St. Jude Children’s Research Hospital. With ongoing investments into exceptional structural biology, chemical biology and computational facilities, this is an exciting time to join our lab.

This work will provide a solid introduction to current opportunities in structure-based ligand discovery with relevance for both academia and industry. With its excellent core facilities, highly interactive and supportive environment St. Jude Children’s Research Hospital is a great place to do research and build a career while living in an affordable city.

Accompanying courses will be taken in conjunction with the Department of Pharmaceutical Sciences at the University of Tennessee Health Science Center.

Minimum admission requirements:
- a BS or MS degree in pharmacy, chemistry, biology, mathematics, engineering, or other appropriate disciplines.
- a minimum Grade Point Average of 3.0
- a combined Graduate Record Examination score (verbal and quantitative) of at least 300
- proof of proficiency in English (e.g. TOEFL)

Please direct your questions and application package including a cover letter, current CV, and 3 letters of reference to: Dr. Marcus Fischer (marcus.fischer@stjude.org) by February 3rd, 2020.

Online application deadline is March 15th for admission to the Fall Semester starting in August 2020.

Relevant papers include:
- Darby et al. (2019). Water Networks Can Determine the Affinity of Ligand Binding to Proteins. JACS 141, 15818-26. PMID 31518131
- Balius et al. (2017). Testing inhomogeneous solvation theory in structure-based ligand discovery. PNAS E6839-46. PMID 28760952
- Fischer et al. (2015). One crystal, two temperatures: cryocooling penalties alter ligand binding to transient protein sites. Chembiochem 1560-64. PMID 26032594
- Fischer et al. (2014). Incorporation of protein flexibility & conformational energy penalties in docking screens to improve ligand discovery. Nature Chemistry 6, 575-83. PMID 24950326

More info at: https://www.stjude.org/fischer