

PhD student position

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 (smFRET, HDX-MS) 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.

The project will be housed in the Department of Chemical Biology and Therapeutics (<https://www.stjude.org/research/departments-divisions/chemical-biology-therapeutics.html>), and Structural Biology (<https://www.stjude.org/research/departments-divisions/structural-biology.html>) 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 the lab. Accompanying courses will be taken in conjunction with the Department of Pharmaceutical Sciences at the University of Tennessee Health Science Center.

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 whilst living in an affordable city.

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 the end of February 2019.

Online application deadline is March 15th for admission to the Fall Semester starting in August 2019.

Relevant papers include:

- 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
- Balias 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

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