Position Description:

Two Graduate Student (PhD or MSc) positions are available immediately in the Zhang Laboratory at the Department of Molecular and Cellular Biology, University of Guelph.

Research Programs:

The overarching goal of our protein engineering laboratory is to develop synthetic probes to manipulate human cell signal transduction cascades to identify new biological mechanisms and devise innovative therapeutic strategies. Our lab has received funding support from both federal government granting agencies (e.g. CIHR and NSERC) and private foundations (e.g. Canadian Institute for Advanced Research). We are a dynamic team comprised of 1 postdoctoral fellow, 2 technicians, 2 PhD candidates, and 3 MSc students. We also actively engage in collaborations with researchers from Canada and around the globe in both academic and industrial sectors.

In the past few years, we are working on three research programs: 1) Development of inhibitors for E3 ligases and deubiquitinases (Guo et al. 2021, Gabrielsen et al. 2017); 2) Exploring new technologies for targeted protein degradation and stabilization in drug discovery (Aminu et al. 2022); and 3) Engineering novel protein scaffolds to modulate cell signaling (manuscript in preparation). Please feel free to contact Dr. Zhang to inquire about details of the potential research projects.

Recent Research Publications:

1. Aminu B#, Fux J#, Mallette E, Petersen N, Zhang W*. (2022) Targeted Degradation of 53BP1 Using Ubiquitin Variant Induced Proximity. ***Biomolecules*** 12, 479.

2. Guo Y#, Liu Q#, Mallette E#, Caba C, Hou F, Fux J, LaPlante G, Dong A, Zhang Q, Zheng H, Tong Y*, Zhang W*. (2021) Structural and functional characterization of ubiquitin variant inhibitors for the JAMM-family deubiquitinases STAMBP and STAMBPL1. ***Journal of Biological Chemistry*** 297, 101107.

3. Gabrielsen M, Buetow L, Nakasone MA, Ahmed SF, Sibbet GJ, Smith BO, Zhang W*, Sidhu SS*, Huang DT*. (2017) A general strategy for discovery of inhibitors and activators of RING and U-box E3 ligases with ubiquitin variants. ***Molecular Cell*** 68, 456-470.

Qualifications:

- Background in Molecular Biology, Biochemistry, Genetics or related discipline
- At least 1-year lab experience in protein biochemistry, molecule biology or mammalian cell biology
- Excellent organization, time management, and communication (oral and written) skills
- Problem solving and analytical abilities for experimental design
- Self-motivated, detail oriented, and with satisfactory work performance and attendance record

Application process:

Please send cover letter, CV, three references, and transcript to Dr. Wei Zhang by email (weizhang@uoguelph.ca). The Zhang lab (www.thezhanglab.com) is committed to promote diversity, inclusion, and multicultural competence in academia and we invite and encourage applications from all qualified individuals, especially from groups that are underrepresented in higher education.