

Hello!

Welcome and thank you for your interest in the internship! Below are some brief notes about the internship for you to consider before applying:

Proteomics Internship Program

Our Proteomics internship program was established in September 2022. Trainees will learn modern proteomics approaches using state-of-the-art mass spectrometry instrumentation and acquire skills that will be useful for their future careers in academia or industry, including literature analysis, experimental design, optimization and troubleshooting, and data analysis/interpretation. Training and learning are guided and achieved by setting incremental specific goals. Interns work directly with me for the entire period of the internship. Such a close mentor-mentee relationship allows flexibility to adjust the learning objectives/experiences according to individuals' interests, time commitment, and career aspirations.

Training Structure

For interns who do not have prior proteomics knowledge, they will be trained through a 4-6 week proteomics "boot camp" exercise involving protein identification and quantification, followed by active participation in a 4-6 week method development pilot project focusing on structural proteomics (i.e., disulfide bond elucidation, cross-linking mass spectrometry, and hydrogen-deuterium exchange (HDX) mass spectrometry). For interns who have relevant coursework, they can choose to join the method development efforts right way. When established, these methods will be applied to several ongoing collaborative projects with UVM investigators and outside collaborators. Interns will have opportunities to present their findings at professional events, including VBRN Career Day and the UVM Student Research Conference. Depending on their career aspiration, trainees can allocate their time between method development and core facility operation. Trainees can also choose to work on users' projects under our supervision and report progress and findings back to investigators during consultation/discussion meetings.

Does it fit your career aspirations?

Please note that the lab is heavy on instrumentation and data analysis, something you will need to consider whether it actually aligns with your interests or career aspirations. The intern/research experience will prepare well for someone planning to attend graduate school in analytical chemistry/biochemistry or go into industry, but such experience might not be relevant or directly beneficial for medical school applications.

A short video from the Franklin Institute in Chemistry might provide you with some insights into what we do.

<https://www.youtube.com/watch?v=6lubIPzwUmQ>

Our previous interns' projects on UVM ScholarWorks

Several of our internship graduates present their work at the UVM Student Research conference:

- *Establishing and Streamlining Mass Spectrometry Workflows for Elucidating Cross-links for Protein Conformational Analysis* (<https://scholarworks.uvm.edu/src/2024/completepresentationlist/114/>)
- *Establishing and Streamlining Workflows for High-pH Reversed-Phase HPLC Fractionation For Proteomics Profiling* (<https://scholarworks.uvm.edu/src/2024/completepresentationlist/85/>)
- *HDX-MS Method Development* (<https://scholarworks.uvm.edu/src/2024/completepresentationlist/51/>)

Feel free to stop by the facility to check out their posters and chat with us!

We are located in FMRB 143. Look forward to hearing from you!

Best wishes,

Wai

Ying Wai Lam

VBRN Proteomics Facility

ylam@uvm.edu