Jonas Wong
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Jonas Wong is a third-year PhD student in the Department of Medical Microbiology & Immunology at the University of Alberta, supervised by Dr. Wael Elhenawy. His research focuses on Crohn's disease (CD)-associated *Escherichia coli*, which began when he first joined the Elhenawy Lab as an undergraduate honors thesis student. He completed his Bachelor of Science (Honors) in Immunology and Infection in 2023 and has been admitted to the MD/PhD program beginning in Fall 2026.

Throughout his training with the Elhenawy Group, Jonas has received over $80,000 in competitive institutional, provincial, and federal funding to support his work, including the Canada Graduate Scholarship – Master's Program and the Alberta Graduate Excellence Scholarship. He has delivered oral presentations at national conferences and received multiple top-presenter distinctions. His collaborations with different institutions across the globe have resulted in several co-authored manuscripts currently in press or in revision.

His article, *The assembly of a hybrid type IV secretion system by a Crohn's disease-associated* Escherichia coli *strain*, published in *Nature Communications*, identifies a previously undescribed type IV secretion system (T4SS) in adherent-invasive *Escherichia coli* (AIEC). AIEC are frequently isolated from CD patients and contribute to intestinal inflammation. T4SSs are critical for bacterial pathogenesis, and many AIEC strains carry a T4SS that is canonically entirely encoded on a *tra* operon, which is located on an extrachromosomal plasmid. Jonas' work demonstrates that the clinically relevant AIEC strain NRG857c lacks two critical components, *traC* and *traV*, on the *tra* operon which are required for a functional T4SS. Instead, these homologs are encoded on the chromosome within an integrative and conjugative element (ICE). This unique, functional T4SS in AIEC promotes bacterial persistence and inflammation of the gut, highlighting T4SS components as potential targets for therapeutic and diagnostic strategies in CD patients.

Jonas intends to continue advancing his research program and pursue a career as a clinician-scientist.