Laidlaw Summer 2025 International Experience Blog

Over this summer, I had the privilege of spending 6 weeks at the University of Leeds's School of Chemical and Process Engineering under the guidance of Dr. Thomas J Robshaw to conduct a research project capturing ion-exchange filtration methods to defluoridate Tanzanian groundwater. While the lab research in Leeds was important in building my technical skills and scientific independence, the most impactful part of the experience came during my field trip to Tanzania from July 6–10.

Fig 1: NM-AIST during Tanzania Trip

Fieldwork as the Core of Learning

Being on the ground in Tanzania shifted my understanding of what research really means. In Leeds, I focused on batch experiments, resin development, and analyzing removal efficiencies. In Tanzania, I saw firsthand the communities and people whose daily lives are directly affected by the very problem I was studying. This context reframed everything. What mattered was not only whether a resin could bind fluoride effectively in the lab, but also whether a family could trust the water they were drinking, whether a community could afford to maintain a system, and whether local stakeholders saw value in adopting a new technology.

Fig 2, 3: Meeting with the Provost and Faculty of NM-AIST

The trip reminded me that water contamination is not an abstract chemical problem but a lived reality. I spoke with local academics, engineers, and community leaders who emphasized that technical

performance is only part of the equation. Equally important are cultural acceptance, cost, and education. This was a detail I would have never considered if my experience had been solely within the lab.

Growth Through Discomfort and Difference

The Tanzania trip also challenged me to navigate moments of discomfort. Being in a rural setting where language, culture, and resources differed significantly from what I knew in the U.S. or U.K. forced me to slow down and listen more than I spoke. There were times when I didn't fully understand the nuances of discussions or felt uncertain about whether my technical perspective was useful in the conversation. But in leaning into those moments, I grew more adaptable. I realized that true collaboration means suspending assumptions and allowing local expertise to guide the direction of the work.

Fig 4: Meeting with PhD students at NM-AIST

Lessons in Leadership

Leadership, for me, took on a new definition during this trip. In Leeds, I thought of leadership as organizing experiments, presenting findings, or guiding group discussions. In Tanzania, leadership looked like humility: asking the right questions, amplifying community voices, and translating technical details into accessible explanations. I learned that to lead internationally is to work with others to design solutions, not to simply impose them. This experience taught me that good engineering leadership is relational and ethical, not just technical.

Looking Ahead

Reflecting on the summer as a whole, the Tanzania field trip was the most important part of my growth. It grounded the research in human stories and gave purpose to the technical challenges I faced back in Leeds. I learned that discomfort can be a powerful teacher, that leadership often means listening first, and that research is most meaningful when it is accountable to the people it seeks to serve.

This experience deepened my commitment to pursuing engineering that advances health equity. It reminded me that while experiments may begin in the lab, their true measure lies in the communities they impact. The Tanzania trip solidified that lesson for me, and it is one I will carry into every future project I take on.

Fig 5: Graduate Seminar Presentation at NM-AIST