

Capability building through the Kia Niwha Fellowships

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Mini-lungs to study viral disease

Te Niwha's core purpose is to ensure Aotearoa New Zealand has world-class capacity to combat current and emerging infectious diseases. A crucial component to this is having people with the necessary skills, knowledge and drive to implement and lead initiatives – now and in the future. The Kia Niwha Leader Fellowships are designed to address a need for capacity building in the person space to promote development of these skills in future leaders.

I am incredibly appreciative to be a recipient of a Kia Niwha Leader Fellowship and thankful for the experiences throughout this fellowship that have allowed me to learn and develop my leadership skills and other core competencies. This fellowship has closely aligned with the core principles of Te Niwha – Tiakitanga (Accountability), Hononga (Relationships), Tūhonotanga (Partnerships), and Rangatiratanga (Leadership). Through a series of wānanga held throughout Aotearoa, these principles have been explored in depth through discussion and demonstration. This has included speaking with effective leaders in Aotearoa, particularly in the health space, including Sir Ashley Bloomfield and Glenda Raumatī. The shared knowledge and experience has been impactful in informing and improving my own leadership style. This includes emphasising authenticity and trust in working with others and being able to make informed decisions under pressure. Through interactions with communities and community leaders across the country, I have also heard and seen firsthand the impact of initiatives at a local scale, including addressing health, the environment, and business ventures. These have emphasised the importance of relationships in the continued success of these projects with translatable skills coming to the forefront, particularly in communicating ideas and intentions.

The Kia Niwha Leader Fellowship has also given me the opportunity to develop overseas relationships through an international placement. As well as developing new lab-based skills, I have created new relationships with researchers at King's College London and University College London, and have additionally reinforced existing relationships with collaborators across the UK and Germany. My research based around using mini-lungs as a platform to study infectious disease has been strengthened through this information and skill sharing. International partnerships are incredibly important for researchers in Aotearoa and support our research to remain at the cutting edge. These partnerships would be particularly relevant in the face of any newly developing pandemics to allow us to participate in global responses.

Respiratory disease is incredibly impactful to many people's lives and can lead to serious outcomes including hospitalisation or death. Viral infection is a major cause of respiratory disease, and particularly for newly emerging viral threats, the ability to quickly study and understand how a virus and a person's immunity is interacting is important to effectively treating infection. My research uses mini-lungs grown from donated patient tissue to study and understand these virus-immune interactions. This knowledge could have clinical impact through developing new interventions targeting virus-immune interactions in the lung. This would also have positive benefit to communities most at risk for respiratory infection, including the young and elderly. For researchers in Aotearoa, this model mini-lung system has a wide range

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of applications that can be developed, including for modelling diseases that affect the lungs such as asthma and cystic fibrosis. Importantly, this mini-lung model could also be used to study emerging viral disease to rapidly understand possible impacts on people in Aotearoa.

To me, being a Kia Niwha Leader Fellow has been an invaluable experience. It has greatly impacted how I approach research and leadership roles, and my experiences have fueled my drive to do research that helps communities and people. I believe that Te Niwha's mission to develop Aotearoa's capability to respond to infectious disease is a powerful and important one that should not be overlooked.