

# Position Description

**Date:** September 2026    **Ref:** 2086

## Position | Tūranga: Internship - Exploring Microbial Epigenomics in Livestock Using Long-Read Metagenomic Sequencing

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|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Responsible to   Tō kaiwhakahaere:</b>     | Science Team Leader, Tricia Johnson, Principal Scientists, Shannon Clarke and Suzanne Rowe, Senior Scientist, Ben Perry and Scientist, Rebecca Clarke |
| <b>Group   Tari:</b>                          | Digital Agriculture                                                                                                                                   |
| <b>Function   Wāhanga:</b>                    | <b>Animal Genomics</b>                                                                                                                                |
| <b>Team   Tīma:</b>                           | Animal Genomics                                                                                                                                       |
| <b>Location   Wāhi:</b>                       | Invermay, Dunedin                                                                                                                                     |
| <b>Employment Type   Momo Mahi:</b>           | Fixed Term – 12 weeks                                                                                                                                 |
| <b>Korn Ferry Grade   Taumata Korn Ferry:</b> | 12                                                                                                                                                    |

## Organisational context

The Bioeconomy Science Institute Maiangi Taiao is New Zealand's newest public research organisation, formed through the merger of AgResearch, Plant & Food Research, Manaaki Whenua - Landcare Research, Scion, and the New Zealand Food Innovation Network. Our purpose is to drive innovation and commercial outcomes in the bioeconomy, using research and technology to support enduring economic growth and resilience, a healthy environment and beneficial social outcomes for New Zealand. We pursue opportunities to lift innovation, commercial outcomes, and adoption of advanced technology to drive economic growth across New Zealand. Through world-leading science, we drive innovation across agriculture, horticulture, forestry, aquaculture, biotechnology, and manufacturing. We protect and enhance ecosystems, strengthen biosecurity and climate resilience, and develop cutting-edge bio-based products and technologies.

We honour Te Tiriti o Waitangi and embed te ao Māori throughout our transformation journey. As we come together, we are committed to learning and growing together through inclusive, equitable, and culturally responsiveness ways of working. All roles contribute, in ways relevant to their work, to giving effect to our Te Tiriti commitments through partnership, participation, protection and equity.

## Role purpose | Te Take o te Tūranga

This project will use Oxford Nanopore Technologies (ONT) long-read sequencing to investigate microbial epigenomics in livestock. Unlike traditional sequencing approaches, ONT can directly detect DNA methylation signatures such as 5-methylcytosine (5mC) and N6-methyladenine (6mA) from native DNA, providing unique insights into microbial regulation and adaptation. Working with rumen and buccal metagenomic samples, the student will refine lab and bioinformatic protocols to examine microbial DNA methylation and potential influences on gene expression, environmental adaptation, and traits relevant to animal health and productivity.

## Accountabilities | Ngā whakaritenga

- Process and analyse long-read metagenomic sequencing data from rumen and buccal microbiome samples.
- Detect and characterise microbial DNA methylation patterns using ONT base-modification analysis pipelines
- Investigate relationships between microbial epigenetic variation, gene content, and host traits.

## About you | Ō Pūmanawa

We are seeking a motivated student who:

- Is currently enrolled in an undergraduate or postgraduate programme in Bioinformatics, Genomics, Microbiology, Biotechnology, Animal Science, Computational Biology, Biological Sciences, or a related discipline.
- Has an interest in microbiome research, genomics, epigenetics, and the application of sequencing technologies to biological questions.
- Has experience with, or a willingness to learn, bioinformatics tools, data analysis, and handling large biological datasets.
- Demonstrates strong analytical and problem-solving skills, with attention to detail and the ability to interpret scientific data.
- Has good communication and organisational skills, with the ability to work independently and contribute effectively within a collaborative research team.

## Information And Records Management | Te Whakahaere | Ngā Mōhiotanga Me Ngā Putu Raraunga

- Ensure that information and records are maintained, created, and disposed of in compliance with relevant statutory, regulatory, and Institute policy requirements, documenting business transactions and activities securely and following established policies and procedures.

## Health, Safety, And Wellbeing | Hauora, Haumaru Me Te Oranga

- Contribute to a positive health, safety and wellbeing culture by taking reasonable care for their own health, safety and wellbeing and that of others; complying with legislative requirements, organisational policies and standard operating procedures; reporting hazards, incidents, near misses, and safety observations; and promoting psychological wellbeing through open communication and the early recognition of stress, fatigue, and mental health concerns.

## Organisational objectives | Ngā Whāinga Tōpūtanga Katoa

- Actively develops and applies the cultural capability relevant to their role and contributes to giving effect to the organisation's Te Tiriti o Waitangi Framework

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- Ensures that all information created or received during your work is managed as per the Institute's Information Management policy. This includes naming, storing, classifying, and ensuring it is available to other employees.
  - Takes responsibility to understand and apply Institute policy, processes, systems, and procedures daily.
  - Commits to accurate and timely information sharing and recordkeeping as per set organisational standards.
  - The accountabilities set out above are not exhaustive. Therefore, it may be necessary for you to undertake other reasonable accountabilities as required, which are within your abilities.