

Position Title:	Post-Doctoral Scientist
Reports To:	Team Leader, Steve Archer
Direct Reports:	Nil
Group:	Rumen Microbiology
Key Relationships:	Internal colleagues, Research Stakeholders, Scientists, Science People Leaders, Tertiary Institutions, External Stakeholders.
Location:	Grasslands Campus, Palmerston North

WHO WE ARE

We are passionate innovators, dedicated to making a difference in the future of New Zealand by delivering world-leading research through complex problem solving across diverse agricultural areas. We are respected by the scientific community for thought leadership, trusted by industry partners for the value we add to the sector, and highly regarded by farmers and governmental stakeholders for all we do to keep New Zealand at the forefront of global agricultural excellence.

We go beyond innovation to maintain AgResearch's role as a leading collaborator and contributor to New Zealand's worldwide agricultural reputation.

Our Vision is to drive economic prosperity by transforming agriculture while incorporating the fundamental concepts of sustainability, environmental responsibility and Mātauranga Māori.

POSITION SCOPE & PURPOSE:

The Post-Doctoral Fellow is expected to present Science Thought Leadership and research outcomes at an international level on a defined project. The agreed research outcomes will include a contribution to the intellectual environment of the research group and Science in general.

The Postdoctoral Fellow will be responsible for delivery of high-quality research within the Rumen Microbiology team, aligned with the RUMINING NZ-Ireland Joint Call project, with our Irish collaborators at Teagasc and University College Cork, Ireland. The AgResearch work in the RUMINING project involves the isolation and characterization of rumen microbial species involved in lactate production and consumption, investigating the mechanisms involved in



lactate utilization under controlled experimental conditions using defined, small-scale, metabolically interacting rumen microbial communities, defining the differential responses to soluble sugar supplementation of the microbiomes from LMY and HMY sheep to quantify lactate formation and its subsequent conversion to other VFAs using stable isotope tracing, and using RNA stable isotope probing to identify which organisms are involved in the metabolism of lactate.

The Postdoctoral Fellow will contribute to the characterisation of the *Sharpea-Megasphaera* metabolic interaction that underpins low methane microbiome in sheep and cattle. The Postdoctoral Fellow will use a recently-developed genetic system for *M. elsdenii* to generate gene-specific mutations in the lactate metabolism pathway to identify the functions of these genes and to help understand how the process is regulated.

This project will share resources with the RU_MINING project (NZ-IRE Joint Call), the Greener Cattle Initiative on *Hydrogen production and utilization in the rumen of beef and dairy cattle*, the MBIE Smart Ideas *Machine learning and CRISPR technologies to understand rumen methanogen interactions* and a Global Methane Hub project on *Genetic Toolkits*.



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KEY ACCOUNTABILITY AREAS

RESEARCH STRATEGY AND DELIVERY

- Acts as main investigator or co-investigator on dedicated research project.
- Undertakes experiments as agreed with the Principal Scientist or Programme Leader according to standard protocols and procedures, and in keeping with ethical and biosafety requirements.
- Contributes to administrative duties associated with conduct of research including ethics and grant applications.
- Establishes experimental design and planning of experiments in cooperation with the Principal Scientist or Programme Leader and conduct agreed experiments independently.
- Conducts studies of related literature and research to support the design and implementation of project, ensuring conceptual relevance, comprehensiveness, and currency of information.
- Conducts experimentation and data collection in accordance with the highest standards.
- Contributes to the interpretation and data analysis of experimental results.
- Maintains accurate and neat records of experimentation and experimental data to be adapted to standards suitable for publication.
- Performs general laboratory duties to ensure smooth operation and running of laboratory services as directed.
- Assesses, interprets and evaluates outcomes of research.
- Resolves problems effectively to ensure agreed outcomes are achieved at an optimal level.
- Presents research results and discussion of work at scheduled meetings to support meaningful conversations and sound decision-making.
- Contributes to secure funding where relevant and required.
- Consults with and reports regularly to the Principal Scientist or Programme Leader and produces reports of progress as agreed.
- Identifies new opportunities for delivering R&D solutions to the NZ pastoral industry in collaboration with appropriate people including Science Group Leaders, Portfolio Leaders, Science Impact Leaders and other Scientists to support overall research strategies.
- Displays a collaborative ethos, including a 'right teams' approach that optimally draws on knowledge and capability across the organisation to deliver the best possible research outcomes.

PROJECT MANAGEMENT

- Adopts and applies overall organisational project management methodologies.
- Leads a team of engaged, competent and motivated employees to achieve project goals and meet stakeholder expectations.



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- Inducts new members of students or the project team into the laboratory as appropriate.
- Trains new students with procedures and protocols for research as required.
- Plans, conducts and coordinates detailed phases of work in accordance with agreed project management principles.
- Contributes to high quality research outputs and achievement of project milestones within budgets.
- Coordinates project teams and is accountable for the day-to-day performance management relevant to the project.
- Delivers project reports as per project standards, agreement timelines, and set requirements.
- Manages the scheduling of experimental investigation and comply with relevant legislation and ethical approvals.
- Mitigates risks and issues, which may arise throughout the life cycle of the project.

SCIENTIFIC EXCELLENCE

- Consistently delivers high quality, relevant research in accordance to credible science criteria.
- Produces manuscripts at a high internationally acceptable standard as per agreed timelines.
- Writes and publishes articles in peer-reviewed journals/digests that highlight findings from research.
- Demonstrates science credibility as the senior author in refereed journals and conference papers/reports.
- Authors patents, designs, processes and other commercial material as appropriate.
- Writes or contributes to publications or disseminating research findings using media appropriate to the discipline.
- Maintains an active involvement in the wider research community.
- Undertakes postgraduate student supervision as agreed.
- Presents research projects and findings at seminars and national and international conferences subject to available resources.
- Engages in collaborative research ventures with industry partners and other service providers, regionally, nationally and internationally as appropriate.
- Develops new concepts and ideas to extend intellectual understanding.

RELATIONSHIP MANAGEMENT

- Builds and maintains a strong culture of partnership with stakeholders, focussed on creation of impact in their sectors.
- Contributes to research and science outcomes through active discussion, participation and contribution of ideas and latest research in the field.
- Clarifies and incorporates input and expectations from partners and stakeholders into research



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designs as appropriate.

- Communicates up to date results and appropriate information to researchers, funders, commercial partners, farmers, advisory groups and the pastoral industry in general.
- Works with Portfolio Leaders, Stakeholder Relationship People Leaders, Science Group Leaders and other Scientists to maintain strategic partnerships and generate new opportunities.
- Networks with and presents seminars to industry stakeholders in the wider pastoral community.

HEALTH AND SAFETY

- Maintains current knowledge of AgResearch's Health and Safety Management policies, systems, and procedures.
- Ensures awareness of own responsibilities and the procedures to follow in relation to health and safety.
- Identifies and reports any hazards, near misses or incidents as per prescribed policy and procedures.
- Demonstrates safe workplace behaviour by taking all practicable steps to ensure own and other's safety in the workplace.
- Attends scheduled Health and Safety training and development initiatives on a regular basis.

ORGANISATIONAL OBJECTIVES

- Applies and implements prescribed project management methodology into all project work.
- Applies principles of continuous improvement by taking ownership for identification, analysis and investigation of work-related matters with the intent to improve, manage compliance and initiate best practice in our place of work.
- Actively participates in and contributes to performance conversations and personal development.
- Embraces the AgResearch Values framework and develops own behaviours to support these Values on a continuous basis.
- Takes responsibility to understand and apply AgResearch policy, processes, systems, and procedures on a daily basis.
- Commits to accurate and timely information sharing and recordkeeping as per set organisational standards.
- Performs additional tasks, duties and/or responsibilities as directed by your people leader.
- Assists and supports AgResearch business across different science groups and business units, as agreed with your people leader.



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PERSON SPECIFICATIONS

The person best suited to this position will possess the following:

EDUCATION & QUALIFICATIONS

- PhD degree in Microbiology or Microbial Bioinformatics
- Experience as a practising scientist in a directly related field of science.

CAPABILITIES & EXPERIENCE

- Experience in the application of scientific research, technology development, technology transfer and the application of complex specialist expertise.
- A publication record in research and development in Rumen Microbiology with relevant post-graduate scientific experience.
- Uses scientific methodologies for all research, including literature searching; hypothesis-based experimental design and statistical analysis; and follows rigorous development and documentation procedures for research protocols.
- Knowledge and interest in New Zealand pastoral agriculture industries.
- Follows rigorous development and documentation procedures for research protocols.
- Has a clear understanding of the principles behind intellectual property.
- Outstanding English communication and written capabilities.

COMPETENCIES



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Organisational wide competencies – these are the competencies determined by the organisation as critical to every role.	
Accountability	Accepts responsibility for one’s actions regardless of outcomes.
Caring About People	Displays sensitivity towards the attitudes, feelings, or circumstances of others.
Developing People	Provides support, coaching, training, and career direction to others.
Integrity	Acts honestly in accordance with moral or ethical principles
Driving Results	Accomplishes goals, completes tasks, and achieves results.
Leveraging Diversity	Respects and values individual differences to obtain a desired effect or result.
Relationship Building	Develops collaborative relationships to facilitate current and future objectives.
Self-Development	Actively acquires new knowledge and skills to remain current with and/or grow beyond job requirements.
Role based competencies – these are the competencies required to perform this role.	
Flexibility	Changes direction as appropriate based on new ideas, approaches, and strategies.
Planning & Organising	Coordinates and directs activities to help achieve business objectives.
Quality Focus	Strives to meet quality standards and produce quality work products.
Presenting to Others	Conveys ideas and information to groups.
Networking	Builds and maintains a system of strategic business connections.
Industry Insights	Applies knowledge of industry trends and outlooks to achieve organizational goals and objectives.
Teamwork	Collaborates with others to achieve goals.
Financial Insight	Applies financial knowledge to achieve organizational goals and objectives.
Driving Innovation	Stimulates creative ideas and perspectives that add value.
Customer Focus	Provides courteous, timely, and helpful service to encourage client loyalty.



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