

No 1  
Jun 2023

# RNA Platform NEWSLETTER



**Te Kāuru**  
Ferrier Research  
Institute



Earlier this year the Ministry of Business, Innovation and Employment Strategic Science Investment Fund (MBIE SSIF) announced a \$70 Million dollar investment to support the establishment and development of a cutting-edge RNA platform in Aotearoa. This newsletter aims to update you on the progress made so far and provide information on how to engage with the platform.

In April, Victoria University of Wellington and the University of Auckland were chosen as co-hosts for the platform, in close partnership with the University of Otago and the Malaghan Institute of Medical Research. This group is responsible for developing a platform plan. Upon acceptance of the proposed plan, the platform will be launched and operationalised.

Over the past two months, we have established a core team and we are excited to report on our team's progress in developing the RNA Platform.

# Process So Far

## Platform Team

Professor John Fraser from the University of Auckland and Professor Kjesten Wiig from the Malaghan Institute of Medical Research were appointed as co-directors to lead the efforts in building and designing the platform.

To ensure a comprehensive and inclusive platform plan, we have engaged a number of individuals from the research and tech transfer offices of our four partner organizations. Their expertise and support has been instrumental in shaping structure of the RNA platform.



Professor John Fraser  
from the University of Auckland



Professor Kjesten Wiig  
from Malaghan Institute of  
Medical Research

## MBIE Steering Group

We have been working closely with the MBIE-appointed Steering Group in designing the structural framework for the RNA platform. Together, we have developed a clear vision, mission, and initial structure that will guide our activities and drive innovation.

## Proposed Vision, Mission and Structure of the Platform

Please refer to the following graphic for a visual representation of the RNA Platform's vision and structure.



# RNA Platform Vision and Mission

## VISION

To build world-class and sustainable national capability for the development, manufacture, and commercialisation of RNA technologies in New Zealand

## MISSION

To build RNA technology capability for New Zealand through domestic and international collaboration to



Ensure an enabling and innovative environment by growing proactive relationships with Government, industry and Treaty Partners



Build research, industry and commercial expertise, including in Māori and Pacific peoples



Grow a collaborative and internationally connected knowledge-intensive industry that provides benefits to New Zealand



Contribute towards resiliency and enhanced pandemic preparedness in New Zealand and in the Pacific



Create RNA products that will enable better outcomes for our people, animals and plants

# RNA Platform Technical Domains/Pillars

Target selection	Payload design	Formulation	Preclinical testing	Quality control	Process development & manufacture	Clinical Testing
<b>OUTCOMES</b>						
Selection of disease indication/s and target antigen/s	<ul style="list-style-type: none"> <li>• Methods for design and optimisation of payload.</li> <li>• DNA template production</li> </ul>	Proprietary delivery systems that are safe and efficient and meet or exceed industry standards	Reactogenicity, immunogenicity, efficacy, maximum safety profile, tissue specific expression	Industry standard purification and quality controls are developed to ensure consistency and safety	Functional facilities for process development & (up to) gram scale clinical grade production of RNA payloads using current and future IVT and encapsulation technologies	Regulatory approvals for Phase 1 safety testing of Platform products
<b>EXPERTISE</b>						
Virology, immunology, vaccinology, molecular biology, RNA biology, computational biology	Molecular biology, nucleic acid preparation, analytical chemistry, protein and RNA chemistry	Synthetic and analytical chemistry, formulation science, biochemistry, molecular biology	<ul style="list-style-type: none"> <li>• Cell and tissue</li> <li>• Immunology</li> <li>• small animal models</li> </ul>	Chemistry, biochemistry process engineers	<ul style="list-style-type: none"> <li>• RNA biology</li> <li>• biochemistry</li> <li>• Chemical/process engineers, GMP Production</li> </ul>	Regulatory, clinical, safety
<b>REQUIREMENTS</b>						
Computational modelling	DNA fermentation & purification systems, RNA production, purification and QC	Facility for scaled production of LNP reagents and formulation methods	In-vivo vivariums and testing facilities	Purification facility to industry standards	State-of-art facilities and people for scalable, GMP manufacture of RNA product	Clinical trial providers, licensed and accredited laboratories
<b>CROSS-CUTTING</b>						

← Sustainable reagent supply – local production of essential reagents to enable on-call supply during pandemic conditions  
 Requires State-of-art laboratories and people for process development and scalable manufacture of RNA payloads and reagents for formulation →

← Flagship Projects- RNA therapeutics developed that are of relevance to Aotearoa/Pacific  
 Requires Individual project expertise and knowledge, testing and model systems →

# Process Going Forward

## Survey Launch

In order to gather valuable insights and information regarding the state of play in RNA technology and related research disciplines, we have launched a survey on our [website](#). This survey will help us identify key areas of expertise, research capabilities, and potential collaboration opportunities. Please complete [the survey](#) to ensure that we have sight of your research and capabilities and so we can include you in future Platform activities.

## Workshop Series

To further deepen our understanding of the capabilities and challenges in this space, we will be organizing a series of kick-off workshops.

These workshops will bring together researchers, industry experts, and stakeholders to discuss emerging trends, technological advancements, and potential research directions in the field of RNA.

The kick-off workshops will be designed to address specific questions that will inform the development of the Platform Plan and participants will be invited where their capabilities can inform those questions. Subsequently, there will be an ongoing process to develop and deliver the Platform Work

Programme. Over the 7-year life of the RNA Platform, Directors will make agile adjustments to the work programme with flexibility to best achieve Platform objectives. These initial workshops will, however, shape the thinking for Platform development so it is important that researchers engage at this early stage. Invitation based on Survey Information

Utilizing the survey responses, we will identify participants who have relevant expertise and are keen to contribute to the RNA platform's objectives. These participants will be invited to attend the workshops and actively engage in shaping the platform's future.

## Engage with the Platform

If you are interested in engaging with the RNA Platform, we encourage you to reach out to us.

Our team will be delighted to provide further information, answer any questions, and guide you through the process of getting involved in this exciting initiative.

[rnaplatform@vuw.ac.nz](mailto:rnaplatform@vuw.ac.nz)

<https://www.wgtn.ac.nz/ferrier/research/rnaplatform>