Australian National University

Position Description

College/Division:	ANU College of Health and Medicine
Faculty/School/Centre:	John Curtin School of Medical Research
Department/Unit:	Shine-Dalgarno Centre for RNA Innovation
Position Title:	mRNA Design Engineer – computational biology (Postdoctoral Fellow)
Classification:	Level A
Position No:	TBA
Responsible to:	Shirokikh Group Leader, The Shine-Dalgarno Centre for RNA Innovation
Number of positions that report to this role:	0
Delegation(s) Assigned:	

PURPOSE STATEMENT:

You will become a leading part of world-class industry-supported RNA research and development with immediate translational outcomes. You will be able to leverage the international standing of The Australian National University and connect with innovative RNA companies as part of the position. You will be mostly working on computational and bioinformatic R&D within RNA, transcriptomic, proteomic and genetic software and data. Talented, energetic and motivated scientists are sought to fulfill the position, capable of taking on highly dynamic research. The position may be extended, and commitment increased, depending on the success of its initial projects.

ANU has built an exceptional international reputation for its research and education within health and well-being in Australia, the developing world, and globally. This is achieved through basic biological and medical discovery research, applied research in clinical and health service settings, research-led teaching in biomedical sciences, and the translation of research findings into industry, practice, and policy. The ANU College of Health and Medicine comprises the School of Medicine and Psychology, the John Curtin School of Medical Research, and the National Centre for Epidemiology and Population Health. These schools work together to deliver world-class research and education across the spectrum of biomedicine and health-related fields, working in partnership with the health sector at local, national, and international levels.

The John Curtin School of Medical Research (JCSMR) is a leading centre of biomedical research in Australia with research programs addressing fundamental problems of significance to human disease. Within this environment, The Shine-Dalgarno Centre for RNA Innovation (SDCRI) aspires to drive impactful discoveries and innovations in RNA science to harness the next generation of RNA-based therapeutics and diagnostics, train and foster the future RNA research workforce, and mobilise this workforce and RNA discoveries to areas of strategic health and economic importance to the region and nation.

The mRNA Design Engineer – computational biology (Postdoctoral Fellow) is expected to undertake work within the Shine-Dalgarno Centre for RNA Innovation in an industry collaboration towards the design of next-generation mRNA therapeutics with improved properties.

KEY ACCOUNTABILITY AREAS:
Position Dimension & Relationships:
The mRNA Design Engineer – computational biology (Postdoctoral Fellow) will be a member of John Curtin School of Medical Research, and the Shine-Dalgarno Centre for RNA Innovation, accountable to the Shirokikh Group Leader and Director of the School. The mRNA Design Engineer – computational biology (Postdoctoral Fellow) will be expected to work collegially, leading by example to develop and maintain effective, productive and beneficial workplace relationships with all of the academic and professional School and College staff, students and honorary appointees, as well as with industry stakeholders. This position will also have a mentoring role for students and will engage in collegial and productive collaborations with local, national and where possible, international colleagues.

Role Statement:

In their role as an Academic Level A, mRNA Design Engineer – computational biology (Postdoctoral Fellow) is expected to:

1. Perform substantially independent R&D according to the plan developed by the project leadership, regularly report to and interact with the project leadership and steering group, provide input into the ongoing and strategic planning, execute the project and maintain timelines of the project execution.
2. Undertake substantially independent research under the project leadership guidance in the area of Computational RNA Biology with a view to publishing original and innovative results in refereed journals, present research at academic seminars and at national and international conferences and collaborate with other researchers at any level.
3. Collaborate with the project and stakeholder staff to actively seek and secure external funding, assist to prepare and submit research proposals to external funding bodies as appropriate.
4. Directly engage with the other project participants, and if necessary, clients, stakeholders, and SDCRI members involved in the project, gather and document R&D business requirements, perform, analyse, develop, apply, and evaluate computational information systems (henceforth "software") according to the project plan requirements.
5. Ensure they maintain the level of proficiency and knowledge that accelerate and facilitate the project completion against the competition.
6. Ensure that the software development adheres to enterprise coding standards, guidelines, and methodologies, and that the science and reporting, record keeping, and any confidential data handling are to the agreed and highest standards.
7. When appropriate, contribute to the teaching activities of the School at the undergraduate and graduate levels. This may include, but is not limited to, the preparation and delivery of lectures and tutorials, the preparation of online material, marking and assessment, consultations, and with students or acting as subject coordinators.
8. Supervise students working on individual or group projects at undergraduate, honours, graduate-coursework levels. Assist with supervision of research students.
9. Assist to supervise research support staff in your research area.
10. Actively contribute to all aspects of the operation of the School.
11. Assist in outreach activities including to prospective students, research institutes, industry, government, the media and the general public.
12. Maintain high academic standards in all education, research and administration endeavours.
13. Take responsibility for their own workplace health and safety and not wilfully place at risk the health and safety of another person in the workplace.
14. Understand and employ equal opportunity principles and policies in the University context.
15. Perform other duties as required that are consistent with the classification of the position.
16. Comply with all ANU policies and procedures and in particular those relating to work health and safety and equal opportunity.

Skill Base

A Level A academic will work with the support and guidance from more senior academic staff and is expected to develop their expertise in research and development, and when appropriate teaching, with an increasing degree of autonomy. A Level A academic will normally have completed four years of tertiary study or equivalent qualifications and experience and may be required to hold a relevant higher degree.

A Level A academic will normally contribute to teaching at the institution, at a level appropriate to the skills and experience of the staff member, engage in scholarly, research and/or professional activities appropriate to their profession or discipline, and undertake administration primarily relating to their activities at the institution. The contribution to teaching of Level A academics will be primarily at undergraduate and graduate diploma level.

SELECTION CRITERIA:
1. A PhD (or awarding of PhD within six months of appointment commencement) in an area related to programming for biology computer science, molecular biology with bioinformatic component, computational biology, bioinformatics, statistics, or computational biotechnology, and experience in a related area.
2. Evidence of the ability to articulate and prosecute innovation research in the field of Computational RNA biology or bioinformatics for nucleic acid, proteomic, transcriptomic, genetic, biophysical, bioenergetic, biomaterial and similar sciences.
3. Expertise in advanced mathematical and statistical programming including methods and approaches of machine learning, deep learning and artificial intelligence, demonstrated through research projects and publications.
4. Demonstrated proficiency in one or more high-level programming languages such as Python, Java or R. Ability and willingness, as well as demonstrated expertise in high-performance languages such as C-family is desirable. Programming for the internet technologies can be additional bonus.
5. Strong commitment to data organisation and implementation of quality controls.
6. An ability and commitment to contribute to bids for competitive external funding to support individual and collaborative research activities.
7. The ability to assist in the supervision of students working on research projects.
8. The ability to work as part of a team and to meet deadlines.
9. Excellent oral and written English language skills and a demonstrated ability to communicate and interact effectively with a variety of staff and students in a cross-disciplinary academic environment and to foster respectful and productive working relationships with staff, students and colleagues at all levels.
10. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.

The ANU conducts background checks on potential employees, and employment in this position is conditional on satisfactory results in accordance with the Background Checking Procedure which sets out the types of checks required by each type of position.

Supervisor/Delegate Signature:		Date:	
Printed Name:		Uni ID:	

References:
General Staff Classification Descriptors
Academic Minimum Standards

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Pre-Employment Work Environment Report

Position Details

College/Div/Centre	CHM	Dept/School/Section	JCSMR
Position Title	Post Doc Fellow	Classification	Academic Level A
Position No.	TBC	Reference No.	

In accordance with the Work Health and Safety Act 2011 (Cth) the University has a primary duty of care, so far as reasonably practicable, to ensure the health and safety of all staff while they are at work in the University.

- This form must be completed by the supervisor of the advertised position and appended to the back of the Position Description.

- This form is used to advise potential applicants of work environment and health and safety hazards prior to application.

- Once an applicant has been selected for the position they must familiarise themselves with the University WHS Management System via Handbook guidance https://services.anu.edu.au/human-resources/health-safety/whs-management-system-handbook

- The hazards identified below are of generic nature in relation to the position. It is not correlated directly to training required for the specific staff to be engaged. Identification of individual WHS training needs must be in accordance with WHS Local Training Plan and through the WHS induction programs and Performance Development Review Process.

- 'Regular' hazards identified below must be listed as 'Essential' in the Selection Criteria - see ' Employment Medical Procedures' at http://info.anu.edu.au/Policies/_DHR/Procedures/Employment_Medical_Procedures.asp

Potential Hazards

- Please indicate whether the duties associated with appointment will result in exposure to any of the following potential hazards, either as a **regular** or **occasional** part of the duties.

TASK	regular	occasional	TASK	regular	occasional
key boarding	☒	☐	laboratory work	☐	☐
lifting, manual handling	☐	☐	work at heights	☐	☐
repetitive manual tasks	☐	☒	work in confined spaces	☐	☐
Organizing events	☐	☐	noise / vibration	☐	☐
fieldwork & travel	☐	☐	electricity	☐	☐
driving a vehicle	☐	☐			
NON-IONIZING RADIATION			**IONIZING RADIATION**		
solar	☐	☐	gamma, x-rays	☐	☐
ultraviolet	☐	☐	beta particles	☐	☐
infra red	☐	☐	nuclear particles	☐	☐
laser	☐	☐			
radio frequency	☐	☐			
CHEMICALS			**BIOLOGICAL MATERIALS**		
hazardous substances	☐	☐	microbiological materials	☐	☐
allergens	☐	☐	potential biological allergens	☐	☐
cytotoxics	☐	☐	laboratory animals or insects	☐	☐
mutagens/teratogens/carcinogens	☐	☐	clinical specimens, including blood	☐	☐
pesticides / herbicides	☐	☐	genetically-manipulated specimens	☐	☐
			immunisations	☐	☐

OTHER POTENTIAL HAZARDS (please specify):				
Supervisor/Delegate Name:	Jonathan Mond	Date:	28/3/2024	