

Position Description

Research Associate/Post-Doctoral Fellow in Mathematical Biology

Position Number: 00059569
Position Title: Research Associate/Post-Doctoral Fellow in Mathematical Biology
Date Written: June 2019

Faculty / Division: UNSW Medicine
School / Unit: Kirby Institute
Position Level: Level A/B

ORGANISATIONAL ENVIRONMENT

UNSW is currently implementing a ten-year strategy to 2025 and our ambition for the next decade is nothing less than to establish UNSW as Australia's global university. We aspire to this in the belief that a great university, which is a global leader in discovery, innovation, impact, education and thought leadership, can make an enormous difference to the lives of people in Australia and around the world.

Following extensive consultation in 2015, we identified three strategic priority areas. Firstly, a drive for academic excellence in research and education. Universities are often classified as 'research intensive' or 'teaching intensive'. UNSW is proud to be an exemplar of both. We are amongst a limited group of universities worldwide capable of delivering research excellence alongside the highest quality education on a large scale. Secondly, a passion for social engagement, which improves lives through advancing equality, diversity, open debate and economic progress. Thirdly, a commitment to achieving global impact through sharing our capability in research and education in the highest quality partnerships with institutions in both developed and emerging societies. We regard the interplay of academic excellence, social engagement and global impact as the hallmarks of a great forward-looking 21st century university.

To achieve this ambition, we are attracting the very best academic and professional staff to play leadership roles in our organisation.

VALUES IN ACTION: OUR UNSW BEHAVIOURS

UNSW recognises the role of employees in driving a high-performance culture. The behavioural expectations for UNSW are below.



Delivers high performance and demonstrates service excellence.



Thinks creatively and develops new ways of working. Initiates and embraces change.



Works effectively within and across teams. Builds relationships with internal and external stakeholders to deliver on outcomes.



Values individual differences and contributions of all people and promotes inclusion.



Treats others with dignity and empathy. Communicates with integrity and openness.

OVERVIEW OF RELEVANT AREA AND POSITION SUMMARY

UNSW Medicine is a national leader in learning, teaching and research, with close affiliations to a number of Australia's finest hospitals, research institutes and health care organisations. With a strong presence at UNSW Kensington campus, the faculty have staff and students in teaching hospitals in Sydney as well as regional and rural areas of NSW including Albury/Wodonga, Wagga Wagga, Coffs Harbour and Port Macquarie.

The Kirby Institute is a leading global research institute dedicated to the prevention and treatment of infectious diseases. Established in 1986 in response to the then emerging HIV epidemic, the Kirby Institute now contributes to knowledge on a broad range of diseases, including viral hepatitis and sexually transmissible infections. Focussing on the coordination of national surveillance programs, population health and epidemiological research, clinical and behavioural research and clinical trials, the Kirby Institute's research projects are conducted in partnership with communities most affected by epidemics.

The Kirby Institute aims to find ways to control infections, develop new therapies and preventative vaccines, as well as providing critical leadership to decision makers in Australia and internationally on the most effective, efficient and sustainable strategies to address epidemics.

The Infection Analytics Program (IAP) includes a dozen applied mathematicians working on a wide variety of projects in infection and immunity. The team works closely with experimental collaborators in Australia, the USA and elsewhere to design and analyse experimental approaches to understanding the dynamics of host-viral interactions. The group is housed within the Kirby Institute in a purpose-built "dry lab" environment.

This Research Associate/Post-Doctoral Fellow will focus on the mathematical modelling of experimental data on viral dynamics of HIV during treatment and after treatment interruption to better understand HIV latency. This will involve developing familiarity with the HIV literature and the underlying biology, biostatistical analysis, and ODE and stochastic modelling.

The Research Associate/Post-Doctoral Fellow reports to the Program Head, IAP and has no direct reports.

RESPONSIBILITIES

Specific responsibilities for this role include:

Level A

- Conduct modelling analysis of host-viral interactions in HIV infection.
- Statistical analysis and fitting of models to experimental data on animal and human SIV / HIV infection dynamics.
- Successful co-ordination and contribution intellectually and practically to the design, planning, and execution of projects.
- Conduct design and performance of research including all data management and mathematical/computational analysis.
- Liaise with collaborators to assist in planning/interpretation of the experimental work and making connections between models and data.
- Timely and accurate analysis and reduction of data for presentation.
- In collaboration with the Program Head and the research team, prepare and submit articles for peer-reviewed journals, research grants, academic manuscripts, reports and ethics applications.
- Represent the Kirby Institute at national and international meetings and attend relevant briefings.

- Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that your actions or omissions do not impact on the health and safety of yourself or others.

Level B (In addition to the above):

- Independently plan and execute the methodological aspects of research projects relating to the conduct of analysis and modelling studies.
- Undertake research projects and collaborate with the research team to identify specific components of research.
- Prepare research grant proposals, scientific papers, protocols and conference abstracts.
- Supervise research and/or data analysis performed by other team members.
- Independently develop strategies to ensure effective and efficient research management.

SELECTION CRITERIA

- Post graduate degree, preferably PhD, in mathematics / physics / statistics or other quantitative discipline.
- Demonstrated mathematics, statistics, or computer programming skills relevant to modelling of experimental data.
- Interest in modelling in immunology and infection dynamics.
- Proven evidence of publications in peer reviewed journals.
- Strong analytical and quantitative skills, preferably with experience in data analysis.
- Excellent written and oral communication skills.
- Ability to work effectively as a member of a multidisciplinary team.
- Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training.

Level B (In addition to the above):

- Significant track record in publication, presentation, and assistance in grant submission in chosen field.
- Highly developed data analysis skills and experience in a broad range of modelling and / or statistical packages.
- Demonstrated ability to conceptualise novel research questions in areas relevant to public health or health services research, and to develop these into research outputs.
- Evidence of an increasing trajectory of research excellence and productivity.
- Demonstrated experience preparing grants for research in a related discipline.

It is not the intention of the position description to limit the scope or accountabilities of the position but to highlight the most important aspects of the position. The aspects mentioned above may be altered in accordance with the changing requirements of the role.