POSITION DESCRIPTION

POSITION TITLE:	Genomic Epidemiologist and Modeller
POSITION NUMBER:	5773
DIVISION / SECTION:	Global and Tropical Health
SUPERVISOR:	Principal Research Fellow, 2164
CLASSIFICATION LEVEL:	Academic Level C
SALARY RANGE:	$132,508 - $151,412 (pro rata)
STATUS (FTE):	0.8 – 1.0 FTE (part-time or full-time)
LOCATION:	Darwin, Northern Territory (negotiable)
DIRECT REPORTS:	Up to 2
INDIRECT REPORTS:	Up to 2
SPECIAL PROVISIONS:	Willingness to travel internationally several times per year for 1-2 week(s) at a time.

ABOUT MENZIES:

Menzies is a national leader in research and education that improves health outcomes for Aboriginal and Torres Strait Islander people and populations across our region. As a leader in global and tropical research into life-threatening illnesses, Menzies continues to translate its research into effective partnerships and programs in communities across Australia, the Asia-Pacific region and beyond.

ABOUT THE RESEARCH PROGRAM

Menzies School of Health Research is one of Australia's leading medical research institutes and is highly renowned for its translational and global health research programs. The malaria program at Menzies spans a diverse range of research activities aimed at both prevention and treatment, from epidemiology, diagnosis, pathophysiology, molecular parasitology, clinical trials, and evaluation of the impact and cost-effectiveness of public health interventions. We collaborate with partners across the globe in innovative programs aiming to accelerate malaria elimination.

The changing malaria landscape, particularly in peri-elimination settings in the Asia-Pacific and Americas presents national malaria control programs with critical questions concerning infection origin, outbreak drivers, and the chain of transmission within and across borders. Through collaboration with international partners at Harvard University and over 20 endemic country partners, the Menzies team have established a world-leading *Plasmodium* genomics program that is developing molecular tools to address these questions. Our malaria program also aligns with the GenRe-Mekong program, the WorldWide Antimalarial Resistance Network (WWARN), and the Australian Centre for Research Excellence in Malaria Elimination (ACREME).

The Menzies *Plasmodium* genomics program focuses on developing novel molecular surveillance tools that provide translational information on emerging parasite adaptations, transmission dynamics, the major routes of parasite spread within and across borders, and the impact of local treatment policies

on drug resistance and infection reservoirs. Our research program incorporates molecular biology, population genetics and genomics, software development and mathematical modelling to inform on the biology and epidemiology of Plasmodium species. We are working closely with partners in multiple malaria-endemic sites to support in-country implementation of the molecular surveillance tools and ensure their effective translation to generate locally informative data in a timely manner. Ultimately, the objective is to support the rapid containment and elimination of *P. falciparum* and *P. vivax*.

SUMMARY OF POSITION:

The Genomic Epidemiologist and Modeller will have the opportunity to develop a unique niche in *Plasmodium* molecular epidemiology, leading the development of new analytical frameworks that combine molecular and epidemiological data to model transmission chains in low endemic settings, including outbreak and resurgence events. The Genomic Epidemiologist and Modeller's project will also entail working closely with other members of the malaria team on parallel projects that aim to decipher the hidden biology and epidemiology of relapse; a reservoir that the transmission model will need to incorporate for *P. vivax* infections. The Genomic Epidemiologist and Modeller will also work closely with Menzies' malaria-endemic country partners to establish knowledge of the local epidemiological context and to ensure the translational relevance of the model outputs.

You will join our diverse, multidisciplinary team at Menzies and work on a global genomics program alongside local collaborators in the ACREME network, and international collaborators at Harvard University. Using unique collections of *Plasmodium* genotyping data generated with endemic country partners, you will lead the development and optimisation of analytical frameworks incorporating genetic and epidemiological data to model transmission chains. You will support colleagues and collaborators from malaria-endemic countries in the application of the developed frameworks to inform on transmission chains in malaria outbreak events and in regions with suspected cross-border transmission challenges. You will also provide an advisory role (on statistical and genetic components) in work with Menzies colleagues in a parallel *P. vivax* program aiming to optimise models for classifying recurrent infections using genetic and time-to-event data. The Genomic Epidemiologist and Modeller will be responsible for assisting in the ongoing oversight, reporting and quality assurance of the research activities, supervision of post-graduate students and engagement with other relevant project scientists and key stakeholders. You will be encouraged and supported to design new projects within the program, lead publications, and lead the submission of mid to large grant proposals.

PRIMARY RESPONSIBILITIES:

The following responsibilities are not exhaustive and may include others as directed by the Supervisor:

1. Lead the data analysis and manuscript preparation for assigned tasks and contribute to these activities for broader projects within the team.
2. Co-supervise or supervise post-graduate students, junior researchers and external collaborators with data analysis tasks in genetic epidemiology or statistical modelling and with manuscript preparation tasks.
3. Co-supervise or supervise post-graduate students, junior researchers and external collaborators with manuscript preparation tasks.
4. Contribute to database management in accordance with ethical guidelines.
5. Contribute to the preparation and management of ethics applications relevant to the research program.
6. Maintain regular communication and effective engagement with team members at Menzies and relevant external collaborators.

7. Contribute to the academic program and broader Menzies objectives including attendance at divisional or institutional meetings and events.
8. Build and maintain effective working relationships with internal and external stakeholders
9. Develop and maintain a profile of scholarly publications in high-ranking journals.
10. Lead the development of funding applications for research projects from a variety of sources including national and international competitive grants, government funding and other sources.
11. Prepare and present research program findings to varied audiences including at seminars, and, subject to funding, conferences.
12. Understanding and awareness of relevant Workplace Health and Safety as well as Equal Opportunity principles and legislation, along with a commitment to maintaining a healthy and safe workplace for all Menzies staff, students, volunteers and visitors.
13. Carry out any other tasks as reasonably required by the Supervisor, Business Manager and/or Menzies Director.

SELECTION CRITERIA:

Essential:

1. PhD or equivalent postgraduate qualification in a relevant field with a record of relevant experience or an equivalent combination of experience and training.
2. Demonstrated ability to conduct high-quality population genetic or epidemiological analyses of large genetic or genomic data sets.
3. Demonstrated experience in mathematical or statistical modelling (e.g. Bayesian inference frameworks) of infectious diseases.
4. Demonstrated competence with coding in either R, python, perl or a related programming language.
5. Proven experience with the software, tools and databases for analyzing massively parallel sequencing data.
6. Ability to be solutions-focused and troubleshoot technical and process challenges.
7. Demonstrated skills and experience in staff, student, and team management, with a positive attitude and a commitment to building capacity and capability in others.
8. Demonstrated experience working independently and as a member of a cohesive team and showing leadership and initiative within a research and evaluation context, to set priorities, coordinate tasks and meet deadlines.
9. Experience in successful preparation of competitive grant submissions.
10. Demonstrate evidence high-level of written and verbal communication skills and the ability to produce, design and present research findings in a clear and engaging way to academic, professional and community audiences.
11. Ability to build strong productive relationships within an organisation and collaborative external partnerships. Well-developed capacity to consult, collaborate and negotiate effectively with people from diverse cultures and a wide range of stakeholders.
12. Demonstrated record of high-quality supervision of post-graduate students.
13. Excellent publication record related to pathogen genomics, as demonstrated by a record of publications in Q1 journals (Scimago) as first or corresponding author.

Desirable:

1. Specific experience in *Plasmodium* related pathogen genomics.
2. Experience in delivery of training in data analysis techniques.

COMMITMENT TO ABORIGINAL AND TORRES STRAIT ISLANDER WORKFORCE:

Menzies is committed to providing a culturally inclusive and supportive work environment, and ensuring our workforce is representative of the people with and for whom we work. We seek to amplify Aboriginal and Torres Strait Islander voices in all aspects of our work, and we strongly encourage Aboriginal and Torres Strait Islander peoples to apply for this position.

APPROVED BY: Menzies Human Resources
DATE: **02/07/2025**

ACADEMIC LEVEL C		
PACKAGE COMPONENT	**Minimum Value SRF1 ($)**	**Maximum Value SRF6 ($)**
Gross Salary	132,508	151,412
Superannuation (14% superannuation contribution depends on employee contributing 3% of pre-tax salary)	18,551	21,198
Salary Packaging Grossed Up (Based on utilising the full $15,900 salary packaging component plus the $2,650 Meal Entertainment Card)	8,469	10,103
Leave Loading (payable on the last pay before Christmas – first year will be a pro rata payment)	1,724	1,724
TOTAL SALARY PACKAGE	**$161,252**	**$184,437**