

Date: 09/09/2020

POST	Post-Doctoral Research Assistant(s) in Transcriptomics, quantitative genetics, Genomics, Functional Genomics
CONTRACT	Full-Time, Fixed-term appointment for up to 36 months subject to meeting project milestones
REFERENCE NO	
REPORTS TO	Prof Charles Wondji
ROLE PURPOSE/SUMMARY	<p>The Centre for Research in Infectious Diseases (CRID) seeks to appoint 5 post-doctoral research assistants to work with Prof Charles Wondji on a Bill and Melinda Gates funded project on the detection of molecular markers for metabolic resistance in malaria vectors. The project focuses on:</p> <ul style="list-style-type: none"> i- Detecting the genetic loci and variants driving resistance to insecticides in malaria vectors (RNAseq, PoolSeq, target enrichment sequencing), ii- Functional validation of the role of candidate genes and genetic variants associated with pyrethroid resistance and design DNA-based field applicable diagnostic tools and validate these in the field (GAL4/UAS transgenic expression in Drosophila, RNAi, metabolism assays with recombinant proteins), iii- Design and validation of DNA-based diagnostic assays to detect resistance to insecticides and assessing resistance impact <p>The project will combine transcriptomic analysis of genes conferring pyrethroid resistance, detection of resistance loci and polymorphisms using targeted enrichment and sequencing method, assessment of the role of complex genomic such as copy number variation, Structural variations in conferring resistance. This will also involve functional characterization of candidate genes and variants, including <i>in vitro</i> heterologous protein expression/analysis of resistance genes, <i>in vivo</i> GAL4-UAS transgenic expression in Drosophila, RNA-interference and bioinformatics. The project will benefit from the collaboration of the Liverpool School of Tropical Medicine and other partners.</p> <p>The successful candidate must hold a PhD in biological sciences with a solid background either in transcriptomics (RNAseq/qRT-PCR, Gene Ontology etc) quantitative genetics (GWAS), functional genomics or biochemistry or molecular genetics with experience working on insect vectors desirable but not critical. Ability to analyze next-generation sequencing data is also desirable.</p> <p>These positions will be very suitable for young African scientists abroad who may want to return on the continent to pursue a career in a dynamic local research environment. Successful applicants will also be encouraged and supported to pursue an independent career</p>

	by applying to personal fellowship or grants building on CRID success in supporting its scientists to obtain various fellowships including Wellcome Trust, FLAIR royal Society, GCRF and NIH.
SCOPE	<ul style="list-style-type: none"> • To Detect the genetic loci and variants driving resistance to insecticides in malaria vectors Africa-wide • Functionally validate the role of candidate genes and genetic variants associated with insecticide resistance and design DNA-based field applicable diagnostic tools and validate these in the field • To develop additional research questions and assist in the planning and preparation of research proposals • To assist in the supervision of graduate or post-graduate students. • To publish and present results to national and international audiences

ROLE SPECIFIC RESPONSIBILITIES

- To design and apply genomic and transcriptomic approaches to detect molecular markers for metabolic resistance in malaria vectors
- To design experiments to replicate and validate insecticide resistance associated mutations
- To develop additional research questions in collaboration with project partners
- Assist in the supervision of graduate or post-graduate students.
- Ensure the accurate communication of methodologies and data to other members of the group.
- Ensure the work is performed in a safe manner adhering to local and legal requirements.

	KEY RESPONSIBILITIES	KEY ACTIONS These set out how the Key Responsibilities will be achieved
1	<ul style="list-style-type: none"> • To Detect the genetic loci and variants driving resistance to insecticides in malaria vectors Africa-wide 	
2	<ul style="list-style-type: none"> • Functionally validate the role of candidate genes and 	



	genetic variants associated with pyrethroid resistance and design DNA-based field applicable diagnostic tools and validate these in the field	

3	<ul style="list-style-type: none"> To develop additional research questions and assist in the planning and preparation of research proposals 	

MANAGEMENT RESPONSIBILITIES

	KEY RESPONSIBILITIES	KEY ACTIONS These set out how the Key Responsibilities will be achieved
1	<ul style="list-style-type: none"> To assist in the supervision of graduate or post-graduate students. 	

FURTHER RESPONSIBILITIES

	KEY RESPONSIBILITIES	KEY ACTIONS These set out how the Key Responsibilities will be achieved
1	General	Any other duties commensurate with the grade and nature of the role
		To publish and present results to national and international audiences
		Responsible for working in a safe manner adhering to local and legal requirements
		Any other duties commensurate with the post

PERSON SPECIFICATION

Criteria	Competencies	Essential/ Desirable	Assessment
Education & Training	<ul style="list-style-type: none"> PhD in biological sciences or related field 	E	Application Form/CV
Experience	<ul style="list-style-type: none"> Experience in the design and execution of genomic and transcriptomic studies Strong molecular biology lab skills Strong molecular genetic analytical skills Proficient in the use of statistical software preferably R Experience working with insect vectors Experience with bioinformatics/analyses of next-generation data, transcriptomics data, Experience with functional genomics 	E E E D D D D	Application Form, Assessment and Interview
Skills & Abilities	<ul style="list-style-type: none"> Very strong analytical skills. Ability to identify problems and suggest viable solutions. Independent ability to lead and undertake research. An ability to collaborate with a variety of disciplines including vector biology, epidemiology and parasitology. Excellent verbal and written communication skills, with the ability to communicate at all levels. 	E E E E	Assessment and Interview

	<ul style="list-style-type: none"> • Excellent organisational skills. • Team player • Flexible attitude to work • Ability to generate research ideas • Ability to provide high quality training and supervision to technical staff 	<p>E</p> <p>E</p> <p>E</p> <p>E</p> <p>E</p>	
Knowledge	<ul style="list-style-type: none"> • Knowledge of modern molecular biology approaches. 	E	Assessment and Interview
Special Aptitude	<ul style="list-style-type: none"> • Enthusiastic approach to work • Ability to use initiative and work independently. • Willingness to travel 	<p>E</p> <p>E</p> <p>E</p>	Assessment and Interview
Circumstances	<ul style="list-style-type: none"> • Full time • Fixed-term, 36 months appointment 		

The application must be addressed to crid@crid-cam.net and should include:

- An updated detailed curriculum vitae;
- A letter of motivation
- Recommendation letter;

Deadline for completed applications: October 31st, 2020.

Shortlisted candidates will be called for an **interview** on the **09th and 10th November 2020** and the selected one will start the job on **December 1st, 2020.**