

## **Request for Applications**

The Africa Centre of Excellence for Neglected Tropical Diseases and Forensic Biotechnology is seeking to fill in 3 positions for the execution of two projects. The Centre is seeking to recruit competent candidates to fill in the following positions.

1. A computational assistant for two years
2. A female research assistant to support sample processing, documentation, and protocol development for 3 years.
3. A female PhD fellow

### Project 1

***Sickle cell reticulocyte transcriptome project:*** This project will entail a focus on fetal hemoglobin expression during development and maturation of red blood cells (RBCs) with a bid to characterizing F cells in sickle cell disease using single cell transcriptomics. This exciting project includes laboratory and computational studies and will be based primarily in the Department of Biochemistry and the Africa Center of Excellence for Neglected Tropical Disease and Forensic Biotechnology (ACENTDFB), Ahmadu Bello University, Zaria. Research collaborations exist with opportunities for international training. Project duration is 2 years.

### Project 2

***African materno-fetal system project:*** This project will entail a focus on the African materno-fetal system at single cell resolution. This exciting project includes laboratory, field and computational studies. Primary site of the research will be the Department of Biochemistry and ACENTDFB, Ahmadu Bello University, Zaria. Research collaborations exist with opportunities for international training. Project duration is 3 years.

### Job specification and Qualification Requirements

- 1) The **Computational Assistant** will be responsible to support the development and optimization of computational tools and workflows for the analysis of single cell transcriptomic sequence data from a variety of sequencing platforms using established and novel workflows in support of reticulocyte and other human cell transcriptome. The position will be initially for one year with possibility of extending based on performance

#### ***Key Areas of Responsibility***

- Analyze single cell transcriptomic data using established and novel workflows
- Maintain and develop single cell transcriptomic databases and documentation
- Carry out demultiplexing and alignment of BCL and BAM sequence files
- Create and manage scripts or workflows in R, Python, Perl, Bash and Snakemake
- Assist researchers with mining and analysis of diverse private and public databases
- Contribute to scientific presentations and publications
- Provide bioinformatics and biocomputing training
- Communicate computational, statistical and biological concepts clearly and effectively to a diverse audience.

### Computational Assistant Qualification Requirements

- Candidates with MSc/BSc in Bioinformatics, Computational or Systems Biology, Physical or Computer Science or related fields.
- Candidates with a Bachelor of Science Honours Degree and 3+ years of directly related experience in a research environment working with bioinformatics/computational tools will be considered.
- The candidate must have strong communication and writing skills in English.
- Two or more years experience working with Linux/R
- Experience with the use of Next Generation Sequencing (NGS) applications as well setting up of pipelines / workflows will be an added advantage
- Strong data visualization skills
- Proficiency in at least one programming language (e.g. R, Python, Java) and one statistical software (e.g. SAS)
- Experience in big data, high-performance computing and application of machine learning techniques is an advantage
- Solid understanding of basic and advanced statistical approaches as well as cell biology will be an advantage
- Experience in professional software development as part of a collaborative team is an advantage.

### **Who Can Apply**

Applications are open to qualified individuals of African descent.

### *Remuneration*

713,400 – 835,200 naira per annum

- 2) **Research Assistant** will be responsible to support the PI research activities with human cell isolation from tissues, cell imaging, and preparation of single cell libraries. The research assistant will also be responsible for supporting the project with molecular research protocol development and optimization

### ***Key Areas of Responsibility***

- Support tissue sample collection from patient donors
- Prepare single cell libraries from samples
- Maintain and develop protocols for human cell imaging and documentation
- Support research data management and analysis
- Assist researchers with mining and analysis of diverse private and public databases
- Contribute to scientific presentations and publications
- Provide cell biology methods training to research
- Communicate research data to diverse audience.

### Research Assistant Qualification Requirements

- Candidates with PhD/MSc in Biochemistry, Biology, Biotechnology, or related fields.

- Candidates with a PhD or MSc in Anatomy, Physiology or Pharmacology with strong experience in molecular biology research are strongly encouraged to apply
- The candidate must have strong communication and writing skills in English
- Be a highly motivated individual interested in pursuing rigorous developmental biology research.
- Be a person of integrity and have an eye for details.
- Have prior research experience in molecular and cell biology research as well as, computational/bioinformatics research experience with evidence of publications in reputable online journals.
- Be able to use R for data analysis and graphics.
- Experience with microscopic imaging will be an additional plus.

*Remuneration*

2,861,800 – 3,120,800 naira per annum

3) **PhD Fellow:** We are seeking to recruit a female full-time PhD fellow to join a research team to work on placenta cell(s) development during normal pregnancy

Prospective candidates for Ph.D fellowship must have MSc in biochemistry, biotechnology, Nutrition, Anatomy, Physiology, Cell biology, or related fields with strong evidence of research experience in molecular or cell biology methods and a record of high-quality publication(s) in peer-reviewed journals.

In addition, candidates should

- Be a highly motivated individual interested in pursuing rigorous developmental biology research.
- Be committed to a long-term research career in cell biology and genetics.
- Be a person of integrity and have an eye for details.
- Have prior research experience in molecular and cell biology research as well as, computational/bioinformatics research experience.
- Be able to use R for data analysis and graphics.
- Experience with microscopic imaging will be an additional plus.

Successful fellows will be expected to work on a project to identify, isolate and characterize placenta cell types in normal pregnancy. The result of this project is expected to establish major placenta and fetal cell type(s) and their interactions in normal pregnancy

- i. Successful PhD fellow will work under the direct supervision of the project PI. PhD fellow will be awarded her PhD degree in her department of enrolment
- ii. Successful PhD fellow must be prepared to submit at least one manuscript per year leading to publications in high-impact journal.
- iii. The PI is supported with funding from the Gates foundation and Chan Zuckerberg Initiative Foundation. The PI will support successful PhD Fellow for 1 year initially, with a possibility of an additional year extension based on performance and availability of additional funds. Funds will cover:

- a. A competitive monthly salary at a rate equivalent to (1,051,650 – 1,179,900 naira per annum)
- b. Research supplies and reagents

Successful PhD fellow may be required to take prescribed courses from specific departments to enhance their capacity.

### **Mode of Application**

Interested Candidates should apply by submitting the following as a single pdf document:

1. Statement of purpose
2. Career plan
3. Curriculum vitae (with a clear mention of at least two referees)
4. Interested applicants should send an official copy of their academic transcripts to the Procurement officer of the ACENTDFB, Ahmadu Bello University, Zaria

Completed applications should be submitted to the Procurement officer

[acentdfb@gmail.com](mailto:acentdfb@gmail.com) submission emails should be titled with the position applied for.

Under-represented researchers are strongly encouraged to apply. Applicants with MBBS degree interested in pursuing an MSc biochemistry or biotechnology or exceptional candidates coming directly from BSc studies may be considered. **Applications should be sent on or before 3 weeks from the date of this advert.** Only shortlisted candidates will be contacted.

For further inquiries please contact: the principal investigator at

[idowuaimola@gmail.com](mailto:idowuaimola@gmail.com)