Stellenbosch
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SCIENCE
EYENZULULWAZI NGEZENDALO
NATUURWETENSKAPPE

Department of Biochemistry |
Isebe i-chemistry yobomi |
Departement Biochemie

Postdoctoral Fellowship in Computational Biology & Biophysical Analysis of Malaria Parasite Proteostasis

The Protein Folding Research Group with the Department of Biochemistry at Stellenbosch University is seeking a highly motivated Postdoctoral Fellow with strong expertise in computational biology, bioinformatics, and biophysics to join a multidisciplinary project investigating molecular chaperones and protein quality control mechanisms in *Plasmodium* parasites. This project integrates computational modelling, bioinformatics, and single-molecule biophysical approaches to understand how protein aggregation is regulated and how these pathways may be exploited for drug discovery.

Project Scope

The successful candidate will contribute to developing and applying bioinformatics pipelines to analyse chaperone networks, protein–protein interaction architectures, and aggregation-prone regions in *Plasmodium*. The role will involve conducting structural and biophysical modelling of chaperone–client interactions, such as molecular dynamics, coarse-grained simulations, or folding energy landscape analyses. The fellow will also interpret and integrate single-molecule fluorescence and confocal microscopy datasets using MATLAB or Python and provide computational insights that guide and refine experimental work within the lab.

Minimum Requirements

Applicants must have a PhD (obtained within the last five years) in Computational Biology, Bioinformatics, Biophysics, Structural Biology, Systems Biology, or a closely related discipline. They should have demonstrated expertise in computational modelling, structural prediction, or molecular simulation; bioinformatics analysis of protein sequences, domains, networks, or structural features; and the use of MATLAB for data processing, modelling, simulation, or fluorescence/image analysis. Applicants must also have experience working with biological datasets—particularly proteomic, structural, or sequence-based data—and be able to integrate computational findings with experimental questions in protein biochemistry.

Desirable Skills

Candidates will be at an advantage if they have knowledge of machine learning or statistical modelling for biological data; experience with Python, R, or workflow managers such as Snakemake or Nextflow; familiarity with protein folding, aggregation modelling, or biophysical simulation tools such as GROMACS, AMBER, Desmond or Rosetta; experience working with malaria parasite biology or mass spectrometry data analysis; or experience supervising students and contributing to collaborative research environments.

Fellowship Details

The fellowship is for a duration of one year, renewable for a second year depending on performance. The stipend is ZAR 300,000 per annum (non-taxable). Fellows are expected to reside in Stellenbosch and participate actively in group activities. Start Date: 1 April 2026

How to Apply

Submit a single PDF containing your cover letter (stating your motivation, research interests, and relevant computational/biophysical experience), curriculum vitae, and the contact details of two academic referees. Applications should be sent to **Dr Tawanda Zininga** at **tzininga@sun.ac.za** by **17 February 2026**.

forward together
sonke siya phambili
saam vorentoe

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