



Postdoctoral Research Fellowship

Host: Dr Barbara van Asch (Genetics Department, Stellenbosch University)

Duration: two years (2025 – 2026), starting January 2025

Project overview

Eusociality is characterised by labour division into reproductive and non-reproductive castes, overlapping generations and cooperative brood care. Eusociality is rare and has evolved convergently in at least three insect orders (Hymenoptera, Blattodea and Coleoptera). So far, research on the genomic footprints of eusocial evolution has mainly focused on Hymenoptera. Blattodea have unique evolutionary pathways to eusociality that could be further disclosed by comparative genomics and evolutionary analyses. Of particular interest are genome architecture and identification of conserved or divergent genomic features that correlate with varying levels of social complexity. The genomes of termite species with higher and lower social complexity will be sequenced to chromosome level, annotated, and compared. The dataset will be extended to publicly available genomic data for fine-scale comparisons with related Blattodea, and to other social insects for broad-scale comparisons. Focus will be given to evolution of gene families.

Requirements

- PhD in with strong Molecular Genetics component (completed within the last 5 years)
- Excellent knowledge of HTS technologies (Illumina and Oxford Nanopore)
- Solid experience in bioinformatics pipelines and programming language
- Excellent written and oral scientific communication skills, and proved publication record
- Strong interest in intra- and interdisciplinary collaboration

The candidate is expected to:

- Manage HTS data and associated bioinformatics pipelines
- Perform all analyses required for processing and analyzing HTS data
- Reflect, formulate hypotheses, design experiments, and troubleshoot
- Prepare research papers for publication
- Perform supervisory / co-supervisory roles

How to apply?

- Send CV and motivation letter to BVA-APPLY@sun.ac.za
- Deadline: 30 November 2024