

Postdoctoral Research Fellowship 2025

The South African Research Chair in Integrated Wine Science invites applications for one post-doctoral fellowship.

Scope of Research: The yeast cell wall plays a crucial role in maintaining cell shape, structural integrity and cell-cell communication. However, the role that the main structural components chitin, β -glucan and mannoproteins play in environmental stress tolerance and yeast-yeast interactions has been largely uncharacterised. Our research group has primarily focused on how chitin content, spatial organisation and deposition impacts yeast growth and fermentation kinetics in wine environments. To this end a collection of high chitin mutant strains have been generated using a novel FACS based enrichment strategy. These mutant strains have been sequenced, several genomic datasets have been generated and key SNPs have been identified. This study will aim to further characterise these mutant strains using a combination of molecular biology, fluorescence microscopy and fermentation technology to better understand how chitin deposition and remodelling occurs in *Saccharomyces cerevisiae* and how this impacts its ability to tolerate abiotic and biotic stressors.

Requirements and/or applicable skills:

- PhD in Microbiology, Molecular Biology, Microbial Ecology, Biotechnology or a related field, obtained within the past five years.
- Experience in bioinformatics – including genomic (SNP analysis, genome annotation) and transcriptomic (RNA-Seq) data analysis.
- Experience in experimental molecular biology.
- Experience in advanced microscopic techniques – Confocal Microscopy, Correlative Light Electron Microscopy (CLEM), Focused Ion Beam Scanning Electron Microscopy (FIB-SEM).
- Good writing and organisational skills.
- Evidence of publications/research outputs in the fields of microbiology, molecular biology, microbial ecology, or a related discipline.
- Ability to collaborate effectively and work well in a team.
- Ability to work autonomously and to meet deadlines.

Responsibilities

- Experimental planning, execution, data analysis and interpretation
- If desired, co-supervision of postgraduate students.
- Contribute to project administration including progress reporting to funders.
- Publish research findings in peer-reviewed journals.
- Present work at research forums, conferences, and industry events.
- Assist with laboratory management.

Commencement of duties: May 2025

Closing date: 30th April 2025

Enquiries: Send a letter of application, accompanied by a comprehensive curriculum vitae, including list of publications and the names and contact details of at least two referees, to Prof. Florian Bauer, fb2@sun.ac.za

An annual fellowship of a minimum of R350 000 is available, subject to renewal for an additional year if satisfactory progress is made.

Please note that postdoctoral fellows are not appointed as employees, and their fellowships are awarded tax-free. They are therefore not eligible for employee benefits.

Florian F Bauer

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Please request that referees forward confidential reports by the closing date directly to fb2@sun.ac.za