



Postdoctoral fellowship position available

Applications from suitable candidates are invited for this position at the [South African Grape and Wine Research Institute](#) for a period of one year, which may be renewable for a further year (two years total) based on satisfactory performance and the availability of funds. The fellowship award will be R300,000 (tax free) per annum.

Project Title: Holistic investigation into the impact of yeast nutrient availability on wine flavour composition

Description of the project: This fellowship is part of a broad research investigation titled “[Premiumisation and value growth of South African Chenin blanc \(CB\) wines](#)” funded by South Africa Wine. It makes use of a multidisciplinary approach to identify drivers of premium quality South African Chenin blanc wines while ensuring profitability, with a specific focus on the balancing of yield and quality. Of particular relevance to this fellowship, grapes grown under different trellising systems in our experimental vineyard are compared, especially with regard to their yeast nutrient composition and their subsequent impact on yeast fermentation performance, metabolic footprint, and ultimately on wine sensory properties. Grape juices with divergent yeast nutrient profiles (viz. nitrogenous compounds, lipids and vitamins) will be inoculated individually with two genetically divergent strains of *Saccharomyces cerevisiae*. The uptake of nutrients will be monitored over time, together with fermentation kinetics, yeast biomass production, and intracellular composition of vitamins and lipids. Comprehensive metabolic footprints will be determined at the end of fermentation and sensory evaluation will be performed. The project intends to enhance our knowledge into the metabolic response of the two strains to the initial nutrient composition and to potentially link it back to the microclimates of the developing berries as influenced by the specific trellising system. Targeted nutrient supplementation will be investigated to steer metabolic fluxes where necessary. Follow-up investigations will then be performed to unravel the molecular mechanisms involved, which could include transcriptomic analysis on the most divergent treatments. Ultimately, the results will be compiled with those generated in other projects to provide guidelines to the industry to produce quality wines while limiting production costs.

The particular project of the successful applicant will deal with the microbiology aspect of the project. The postdoctoral fellow will be exposed to a wide array of techniques in the fields of microbiology, molecular biology (RNA extraction), bioinformatics (transcriptomic data analysis), analytical chemistry (HPLC, GC-MS), and oenology (winemaking). They will work in a lively multi-cultural environment and benefit from various research platforms: microbiology laboratory, analytical chemistry laboratory, sensory laboratory, experimental cellar, and experimental vineyard available at SAGWRI, as well as Stellenbosch University’s Central Analytical Facility on campus. The postdoctoral fellow will also be given the opportunity to provide support in the training of junior students where appropriate.

Host: Prof Benoit Divol, South African Grape and Wine Research Institute, Department of Viticulture and Oenology, Stellenbosch University.

Requirements: A PhD degree in Microbiology, Biochemistry, Biotechnology, Oenology or related fields, obtained within the last five years. Candidates with PhD degrees in other fields but with appropriate experience will also be considered. Preference will be given to candidates with academic background and technical skills in microbiology, fermentation technology, molecular biology and analytical chemistry. No knowledge of oenology is required, but willingness to acquire knowledge and skills in this field is mandatory.

Deadline and starting date: Applications for the position must be received by 19 June 2024. The starting date will be as soon as possible thereafter.

Application procedure: Submit a detailed *curriculum vitae* together with academic and publication records, as well as the names of two contactable academic references, by e-mail to Prof Benoit Divol (divol@sun.ac.za). Candidates should include a cover letter which highlights their motivation for the fellowship and the match between their skills and those that are required. Enquiries can be made at the same address.

Note: Postdoctoral fellows are not appointed as employees as their fellowships are awarded tax free. They are not eligible for employee benefits. The University reserves the right not to make an appointment if suitable candidates do not apply.