

# SA GRAPE AND WINE RESEARCH INSTITUTE

## Programme/Project Info for Prospective MSc and PhD Students

### **PROGRAMME: GRAPEVINE BIOLOGY/BIOTECHNOLOGY AND IMPROVEMENT**

Grapevine Genetics,  
Genomics and Metabolomics

The Grapevine Biology and Improvement programme encompasses the research of four interacting researchers at SAGWRI. Prof Melané Vivier has a strong interest in grapevine tissue cultures and transformation, Field-Omics, plant-pathogen interaction and water stress. Dr John Moore focusses on cell wall biology. Dr Philip Young is interested in secondary metabolism and aroma formation. And Dr Justin Lashbrooke is working on functional genetics and grapevine breeding. Projects in this programme may be co-supervised by several of these researchers as the projects are typically cross-cutting in their scope. In general, all research makes use of a combination of molecular tools, plant tissue culture, analytical techniques and computational approaches to answer questions surrounding grapevine cellular physiology in response to environmental and developmental cues.

### **OPPORTUNITIES FOR 2020**

1. Linkage map creation and QTL analysis in grapevine	<ul style="list-style-type: none"><li>• Justin Lashbrooke [SAGWRI], Clint Rhode [Dept of Genetics, SU]</li><li>• 1 MSc student for a quantitative genetics project</li><li>• To discuss project: Justin Lashbrooke <a href="mailto:jglash@sun.ac.za">jglash@sun.ac.za</a>;</li></ul>
2. Network Analysis and Modelling of Grape Ripening	<ul style="list-style-type: none"><li>• Justin Lashbrooke [SAGWRI], Jedrzej Jakub Szymanski [Leibniz Institute of Plant Genetics and Crop Plant Research, Gatersleben, Germany]</li><li>• 1 MSc student for a bioinformatics project</li><li>• To discuss project: Justin Lashbrooke <a href="mailto:jglash@sun.ac.za">jglash@sun.ac.za</a></li></ul>
3. Functional Genetics of Agriculturally Important Traits in Grapevine	<ul style="list-style-type: none"><li>• Justin Lashbrooke [SAGWRI]</li><li>• 2 MSc students for functional genetics projects</li><li>• To discuss project: Justin Lashbrooke <a href="mailto:jglash@sun.ac.za">jglash@sun.ac.za</a>;</li></ul>
4. Grapevine's Response to Water Stress Using Different Scion/Rootstock Combinations	<ul style="list-style-type: none"><li>• Melane Vivier [SAGWRI]</li><li>• Hons/MSc students for water stress projects</li><li>• To discuss project: Melane Vivier <a href="mailto:mav@sun.ac.za">mav@sun.ac.za</a></li></ul>

5. Exploiting Natural Berry Waxes to Protect Grapes Against Fungal Pathogens	<ul style="list-style-type: none"> <li>• Melane Vivier [SAGWRI]</li> <li>• Hons/MSc students for antifungal wax project</li> <li>• To discuss project: Melane Vivier <a href="mailto:mav@sun.ac.za">mav@sun.ac.za</a></li> </ul>
6. Increasing Pinotage Diversity	<ul style="list-style-type: none"> <li>• Melane Vivier [SAGWRI]</li> <li>• Hons/MSc students for antifungal wax project</li> <li>• To discuss project: Melane Vivier <a href="mailto:mav@sun.ac.za">mav@sun.ac.za</a></li> </ul>

## GENERAL CONTACT INFORMATION

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Website	<a href="http://www.sun.ac.za/english/faculty/agri/viticulture-oenology">http://www.sun.ac.za/english/faculty/agri/viticulture-oenology</a>