



**Recruitment for 2017  
NRF Grant-holder linked Doctoral Bursary**

**DIFFERENTIALLY EXPRESSED GENES IN EXFOLIATION SYNDROME, EXFOLIATION  
GLAUCOMA AND PRIMARY OPEN-ANGLE GLAUCOMA IN BLACK SOUTH AFRICANS**

We are inviting applications for an NRF grant-holder linked doctoral bursary for the above research project.

Glaucoma is the most important cause of irreversible blindness in South Africa. Primary open-angle glaucoma (POAG) and exfoliation glaucoma (XFG), caused by exfoliation syndrome (XFS), are the most important causes of glaucoma. POAG and XFS/XFG have well recognised genetic associations but the pathogenesis of these linked, but very different, conditions remains obscure. Evaluating changes in gene expression is a powerful tool to explore the pathogenetic pathways associated with glaucoma and is the goal of this study in black South Africans with XFS, XFG, POAG and normal controls. Correlating genomic DNA sequencing data with RNA-seq transcriptomic data will enable the identification of DNA-RNA differences. The phenotype, environmental contributors, genotype and gene expression profiles may also be correlated. This will provide novel information to improve our understanding of the mechanisms underlying these conditions that may, ultimately, result in new therapeutic targets that may prevent disease progression and blindness.

The position requires laboratory skills in molecular biology, background in genomics and bioinformatics skills. The research is nested in the partnership between Ophthalmology, Department of Neurosciences, Faculty of Health Sciences, the Division of Human Genetics and the multi-disciplinary **Sydney Brenner Institute for Molecular Bioscience (SBIMB)** at the University of the Witwatersrand, Johannesburg, in South Africa. The successful candidate will be required to undertake and promote cross-disciplinary research. The position is subject to approval by the National Research Foundation (NRF) and thus South African candidates are encouraged to apply, although other nationalities will be considered since these are scarce skills.

**Minimum requirements:**

- A Master's degree obtained within the last 5 years.
- Previous research experience in bioinformatics/genomics techniques, biostatistics, mathematics, as well as an ability to work with large data sets, would be an advantage.
- Doctoral support is for three years with renewal for the second/third year subject to performance and progress.

**Submitting your application:**

Please email your application through as follows:

- Your CV (max 4 pages).
- A cover letter (max 2 pages) indicating how your knowledge and skills would align to the research topic and what your expectations are should you be successful.
- Contact details for three potential academic referees.

Please make the subject of the email:

*APPLICATION-DoctoralBursary-YourSurname*

Email your application through to [susan.williams@wits.ac.za](mailto:susan.williams@wits.ac.za) whom you may also contact for further information.

Deadline: **31 January 2017**, though applications will also be considered beyond this if suitable candidates have not been identified.

*The grant-holder reserves the right not to make a nomination if suitable candidates are not identified.*