

Recruitment

Call for PhD students 2021 Sydney Brenner Institute for Molecular Bioscience (SBIMB) University of the Witwatersrand

The Sydney Brenner Institute for Molecular Bioscience, University of Witwatersrand, is pleased to announce the availability of bursaries for two PhD students to work on projects that develop and use mathematical & statistical models utilising *in silico*, *in vitro* and *in vivo* preclinical and clinical data to understand the drug-patient-disease interaction by analysing, drug concentration, effect and disease progression data over time for effective and safe dosing of medicines in the treatment of 1) breast cancer (Tamoxifen drug) and 2) hypertension. The aims are to collect, analyse and model data to develop pharmacogenetics guided treatment algorithms appropriate for black South Africans.

Drugs exhibit inter-individual variability in response to treatment, and these PhD projects aim to identifying and quantifying this variability in the use of various medicines in African patient populations in the treatment of breast cancer and hypertension. Understanding the influence of factors such as body weight, age, genotype, renal/hepatic function, and concomitant medications on drug exposure and response will be evaluated through modelling and simulation of the PK, PD and PGx data for refining dosage recommendations, thereby improving the safety and efficacy of the medicines by appropriately controlling variability in drug response. The ultimate goal is to contribute to decision-making for better drug therapies in patients and to foster rational use of medicines in patients of African ancestry. These PhD positions are funded by the South African Medical Research Council (SAMRC) under the Precision Medicine programme.

Eligibility

An appropriate Master's degree obtained within the last 5 years. The project would suit someone with a background in bioscience, medicine, systems biology, biomedical informatics, biomedical engineering, biostatistics, pharmacy, pharmacology, or genetics/genomics, preferably with existing knowledge of using mathematical and computational models to help interpret biomedical data. Sound statistical analysis skills with knowledge or interest in computer programming and bioinformatics would be an advantage.

Doctoral support is for three years with renewal for the second/third year subject to performance and progress. Only applications from South African citizens and individuals with Permanent Residence in South Africa will be considered. Students to start in Jan/Feb 2021.

Submission

Please email your application through as follows:

- Your CV (maximum of 4 pages)
- A cover letter (maximum of 2 pages) indicating how your knowledge and skills would align with the research topics, and what your expectations are should you be successful.
- Contact details for three academic referees

Please make the subject of the email:

APPLICATION-Doctoral Bursary- Pharmacogenomics

Email your application through to sbimb@wits.ac.za and jocelyn.gayenga@wits.ac.za

For further information you may contact the Principal Investigators:

Prof Collen Masimirembwa: collenmasimirembwa@yahoo.com

Prof Michele Ramsay: Michele.Ramsay@wits.ac.za

Deadline: **23 October 2020**, although applications will also be considered beyond this if suitable candidates have not been identified.

The principal investigators reserve the right not to make an appointment if suitable candidates are not identified.

The Wits Health Consortium will only respond to shortlisted candidates. Candidates who have not been contacted within two weeks of the closing date can consider their applications unsuccessful. In accordance with our Employment Equity goals and plan, preference will be given to suitable applicants from designated groups as defined in the Employment Equity Act 55 of 1998 and subsequent amendments thereto.