



South African Research Chair in Cancer Biotechnology
Institute of Infectious Disease and Molecular Medicine

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MRC SHIP PhD fellowships

Applications are invited for **two PhD Research fellowships** in Cancer Biotechnology. This **new Tier 1 South African Research Chair**, hosted by the Department of Integrative Biomedical Sciences, has been awarded by the South African Research Chairs Initiative (SARChI) of the Department of Science and Technology (DST) and is administered through the National Research Foundation (NRF). The major aim of the research is the use of medical biotechnology including **antibody technologies, protein engineering & expression** to develop and evaluate knowledge-based innovative **recombinant immunodiagnostics and -therapeutics**. The main characteristics of these novel agents are: a) disease-specific activities, b) reduced unspecific side effects, and c) reduced immunogenicity.

MRC SHIP PhD fellowships (Duration: about 36 months)

Globally, breast cancer is the most prevalent invasive cancer in women. The WHO attributes the low survival rates of breast cancer patients in less developed countries including South Africa to the lack of early detection which results in a high proportion of women presenting with late-stage disease. Therefore, the development of the next generation of breast cancer diagnostics and therapeutics, in the guise of antibody based fusion proteins, is a key focus of our research group. SNAP-tag is a state of the art engineered 20 kDa version of the human DNA repair enzyme O⁶-alkylguanine-DNA-alkyltransferase. Within this project, we will generate breast cancer specific antibody fragments genetically linked to the SNAP-tag. After expression of these SNAP-tag based fusion proteins in mammalian cells and conjugation to BG-modified fluorophores, binding activity will be evaluated by fluorescence microscopy. Use of accompanying cytolytic human fusion proteins, to induce lysis of breast cancer cells, will also be incorporated into these projects.

Applicants are required to have:

- completed a Masters degree in Molecular Biology or Biotechnology, Immunology, Genetics, or related fields,
- established expertise in current biomedical biotechnology technologies, including work with animals or clinical samples;
- computer literacy and a good breadth of data and statistical analysis tools;
- demonstrated excellent communication skills;
- the ability to work well in a team, and
- the ability to work semi-autonomously, under pressure, and to meet deadlines

Preference will be given to qualified individuals who have experience in the **publication** of peer reviewed research articles. Preference will also be given to **innovative individuals** who are interested in the translation of basic science to **commercially viable products and technologies**. A stipend of R150 000 p/a is available to support successful candidates.

Candidates will be well **supported** in applications for **supplementary funding and professional development** activities. To apply, please **e-mail** a letter of motivation, full CV including details of any publications, conferences or other scholarly output, as well as the contact details of 2 academic referees who have taught/supervised the applicant.

Kindly email applications to stefan.barth@uct.ac.za. All applications should be clearly marked: **“MRC SHIP PhD fellowships”** in the subject line. Application deadline is **7th April 2016**.