



UNIVERSITY OF CAPE TOWN

DEPARTMENT OF HUMAN BIOLOGY - DIVISION OF BIOMEDICAL ENGINEERING

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30 July 2014

Post-doctoral Fellowship in Multiscale Modelling of Cell Therapies for Myocardial Infarction

Applications are invited for one postdoctoral fellowship which is available as part of a three-year (2014-2017) Collaborative Postgraduate Training Project funded by the National Research Foundation of South Africa. The research project is concerned with multiscale modelling of cell therapies for myocardial infarction with the aim to develop computational tools to study and optimise the mechanobiological interplay between stem cells, therapeutic biomaterials and the infarcted myocardium.

The successful incumbent will be expected to contribute substantially to various parts of the interdisciplinary project involving cell biology and biophysics, biochemistry, tissue and organ biomechanics, and mathematical and computational modelling. The research will require interaction and communication with team members from different scientific domains, at the University of Cape Town and collaborating institutions. These are the University of California San Francisco, Stanford University, Harvard Medical School, University College London and the University of Southampton. Research visits of the incumbent to one or more collaborating institutions are anticipated as part of the training. The details of research can be tailored according to the incumbent's particular area of expertise. Research tasks will also include the reporting of research outcomes at regular project meetings and seminars and in progress reports, as well as the preparation of scientific papers for publication. Limited co-supervision of postgraduate students participating in this research will be part of the developmental training.

The fellowship will be tenable in the Mechanobiology Lab (www.biomechanics.uct.ac.za) of the Division of Biomedical Engineering (www.bme.uct.ac.za), Department of Human Biology in Faculty of Health Sciences. This fellowship will focus on development and application of finite element methods for myocardial infarct mechanics and the constitutive characterisation of myocardial soft tissue.

The value of the fellowship is R305,000 per annum. Individual application to the SARS for tax-exemption will be made by the University of Cape Town on behalf of the successful candidate. No benefits or travel allowance are included in the fellowship. The tenure of fellowship is one year, renewable for two further years contingent on satisfactory annual progress and availability of funds. The commencement of the fellowship is preferably as soon as possible but can be negotiated.

The successful incumbent has to have obtained the PhD degree within the last five years in Engineering, Physics, Biology or related disciplines and may not have held any permanent professional posts (specifically as academics). The incumbent should be experienced in computational modelling (in particular using finite element methods) and cellular biophysics and biomechanics.

The successful incumbent will be required to comply with the University of Cape Town's approved policies, procedures and practices for the postdoctoral sector.

Further information can be obtained from, and applications submitted to, Prof Thomas Franz (email: thomas.franz@uct.ac.za, Tel +27 21 650 1795). Application need to include CV, list of publications and contact details of three referees, and are accepted until the position is filled.

The University of Cape Town reserves the right to cancel incomplete applications, to effect changes to the conditions of the Fellowship and/or to make no awards at all. Only short-listed candidates will be contacted.



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PhD and MSc Scholarship in Multiscale Modelling of Cell Therapies for Myocardial Infarction

Applications are invited for one PhD scholarship and one MSc scholarship which are available as part of a three-year (2014-2017) Collaborative Postgraduate Training Project funded by the National Research Foundation of South Africa. The research project is concerned with multiscale modelling of cell therapies for myocardial infarction with the aim to develop computational tools to study and optimise the mechanobiological interplay between stem cells, therapeutic biomaterials and the infarcted myocardium.

The successful incumbents will be expected to contribute to an aspect of the interdisciplinary project involving cell biology and biophysics, biochemistry, tissue and organ biomechanics, and mathematical and computational modelling. The research will require interaction and communication with team members from different scientific domains, at the University of Cape Town and collaborating institutions. These are the University of California San Francisco, Stanford University, Harvard Medical School, University College London and the University of Southampton. At PhD level, research visits of the incumbent to one or more collaborating institutions are anticipated as part of the training. Research tasks will include the regular reporting of research progress outcomes at project meetings and seminars and in progress reports, as well as the preparation of scientific papers for publication.

The scholarships will be tenable in the Mechanobiology Lab (www.biomechanics.uct.ac.za) of the Division of Biomedical Engineering (www.bme.uct.ac.za), Department of Human Biology in Faculty of Health Sciences.

PhD scholarship: The value of the scholarship is R110,000 per annum with a tenure of three years. Annual renewal is subject to satisfactory progress. The scholarship is available immediately. The successful incumbent has to have obtained a Master degree in Engineering, Mathematics, Physics or related disciplines. Applicants with a Master degree in Biology or a related discipline will be considered if strong knowledge in Mathematics and/or Physics can be demonstrated.

MSc scholarship: The value of the scholarship is R80,000 per annum with a tenure of two years. Annual renewal is subject to satisfactory progress. The scholarship is available immediately. The successful incumbent has to have obtained a four year undergraduate / Honours degree in Engineering, Mathematics, Physics or related disciplines. Applicants with a degree in Biology or a related discipline will be considered if strong knowledge in Mathematics and/or Physics can be demonstrated. An upgrade to PhD can be considered contingent to academic performance and suitability of the candidate at the earliest 18 months after commencement of the MSc programme.

Further information can be obtained from, and applications submitted to, Prof Thomas Franz (email: thomas.franz@uct.ac.za, Tel +27 21 650 1795). Only South African citizens and permanent residents are eligible to apply. Application need to include CV, academic transcripts, list of publications and contact details of three referees, and are accepted until the positions are filled. Only short-listed candidates will be contacted.

The University of Cape Town reserves the right to cancel incomplete applications, to effect changes to the conditions of the Fellowship and/or to make no awards at all.