

CALL FOR PHD or MPhil/PHD STUDENTS

Applications are invited from suitably qualified candidates to read for **one** PhD and/or an MPhil/PhD on a full time basis, on a Tertiary Education Commission funded research project entitled “**Metabo-Logic - Modelling of energy metabolism to compare normal cells v/s cancer cells: a formal logic approach**”. Scholarships are partly funded by Université des Mascareignes and part funding can be obtained by applying for separate scholarship offered by TEC or MRC. Several visits to France (I3S Laboratory, Nice) are expected during the first two years (funded).

Description of the METABO-LOGIC project

Energy metabolism and biomass production play key roles in normal and in highly proliferative cells. And as such they are central to many diseases like diabetes and cancer. So far, we have been able to define a mathematical model for normal cells from classical knowledge in molecular biology using formal methods from Computer Science, based on mathematical logic.

The next step is to exploit this model at a higher level and tune it to study pathological cells (eg. normal cells v/s cancer cells). We already designed a software prototype, DyMBioNet, to explore the dynamics of such models. It also integrates the powerful software platform SMBioNet. Both software are developed in France. The Metabo-Logic project will need to redesign and complete the formal model to obtain models dedicated to liver and breast cells, for both normal and cancer cells.

Qualifications Required:

For PhD

- Applicants should hold a Master degree in Biology, Bioinformatics, Biomedical Science, Computer Science, Medical Sciences, and Nutritional Sciences or in any other related field.

For MPhil/PhD

- Applicants should hold at least an Honours undergraduate degree in Biology, Bioinformatics, Biomedical Science, Computer Science, Medical Sciences, Nutritional Sciences or in any other related field with at least an upper second class award.

Stipend

According to TEC : MPhil : Rs 16,500 PhD : Rs 18,300

*For this project, funding will also cover transport allowance, airfare + hotel / food accommodation (in case travel abroad) + 1 laptop

*Training in Computer Science and modelling software will be provided.

Profile

- Good research and communication skills.
- Good analytical skills and adequate knowledge in laboratory techniques.
- Good ability to understand mathematical logic or at least abstract matters
- Practical knowledge of the use of statistical packages for data analysis
- Have good communication and organisational skills

Responsibilities & Duties

- Perform studies as related to the research project
- Develop and optimise protocol wherever needed
- Analyse and interpret results
- Present information on research progress and outcomes to supervisor(s)
- Contribute to the production of research reports manuscript and presentation
- Willingness to travel to University Nice, France to work with co-supervisor(s)

Mode of Application

Letter of application together with a detailed Curriculum Vitae and photocopies of qualifications, birth certificate, marriage certificate (if applicable), testimonials and equivalence of qualifications (where applicable) should reach :

Mr Rajeev Khoodeeram
Université des Mascareignes
Avenue de La Concorde
Roche Brunes
Rose-Hill

The envelope should be clearly marked as ***TEC Metabo-Logic Project*** on the top right hand corner. Applications received after the closing date will not be considered.

The University reserves the right:

- to call for interview only the most appropriate and best qualified applicants
- not to make any appointment as a result of this advertisement

Closing date of application

16th March 2020 before 15:30

Start of the research project

Around April 2020