**THE HEART RESEARCH INSTITUTE** is a centre of excellence in cardiovascular medical research, affiliated with the Royal Prince Alfred Hospital and the University of Sydney. With research conducted at two campuses, the headquarters of HRI are located in Newtown, and a second base within the grounds of the University of Sydney, at the Charles Perkins Centre, our mission is to prevent death and suffering from cardiovascular diseases, a complex array of diseases affecting the heart and blood vessels. Our research aims to address areas of unmet need in cardiovascular diseases including coronary artery disease, stroke, peripheral artery disease, hypertension, heart failure, preeclampsia, congenital heart disease and pulmonary vascular disease, as well as metabolic complications such as diabetes.

**THE CHARLES PERKINS CENTRE** is facilitating world-class research; the translation of knowledge into practical solutions; the development of innovative, cross-disciplinary teaching programs to inspire the next generation of researchers; and forging new research partnerships within and beyond the University to enable the centre to deliver unique insights and results. This ambitious mission is underpinned by two key components:

* An academic program that covers research and teaching
* A state-of-the-art world-class building completed in 2014

The partnership between The Heart Research Institute and the Charles Perkins Centre brings together our best minds from across the academic spectrum through cross- disciplinary collaboration to address the global crisis in obesity, diabetes and cardiovascular disease. For more information, visit The Heart Research Institute at http://www.hri.org.au and the Charles Perkins Centre at http://sydney.edu.au/perkins/.

**The Position**:

We are currently seeking a **Research Assistant** with a Biomedical Science/engineering background - with academic knowledge in the discipline of ***biophysics, biomedical engineering, microfluidics and biomechanics*** to join the multi-faceted Thrombosis Group within the HRI.

*The thrombosis group is a dynamic and highly successful collaborative research program, headed by Professor Shaun Jackson (NHMRC Investigator fellow and Director of Cardiovascular Research), and involving several local and international research groups, including Professor Zaverio Ruggeri (The Scripps Research Institute, USA), Professor Cheng Zhu (Georgia Tech, USA) and Professor Mark Cooper (Monash University, Australia).*

The successful applicant will work with Dr Lining (Arnold) Ju, an ARC DECRA research fellow within the Thrombosis Group at HRI and recently appointed Senior Lecturer within the new school of biomedical engineering at The University of Sydney, where he is establishing an engineering research group. The work will be complemented by several other associate investigators from the Thrombosis Group at HRI, including Professor Shaun Jackson, Dr Yuping Yuan, Assoc Prof Simone Schoenwaelder and UTS researcher Dr Qian (Peter) Su, an affiliate of the Thrombosis Group.

The RA will assist in **development of single-cell mechanobiological methods for discovering molecular mechanisms of platelet, neutrophil and red blood cell mechanical force sensing.**

This project will combine Biomechanical force probe (BFP)/micropipette technology with high-resolution microscopy leading to development of an advanced BFP/micropipette imaging platform. This platform will represent a world-first with capability to correlate mechanical stimulation profiles with the real-time cellular responses of single platelets with the superior temporal, spatial, and force resolutions at 0.7 milli-second, 3 nano-meter, and 1 pico-newton respectively. The whole system provides precise controls and quantitative readouts in both mechanical and chemical terms, which is particularly suited for live-cell mechanosensing studies over the traditional methods in biochemistry and cell biology that are usually population-averaged and non-real-time. Future studies will further upgrade the platform in the combination of patch clamping to realise single-molecule electrophysiology, imaging and manipulation in one system.

**We Offer:**

* A friendly, flexible and productive team environment.
* Real work-life balance.
* A competitive remuneration package, including travel and relocation allowances (where applicable) along with generous not-for-profit salary packaging options.

**Essential criteria – you will have:**

* A degree in a relevant area of medical science: Masters degree, Bachelor of Science/Bachelor of Biomedical Science degree with honours; including Academic knowledge in the discipline of biophysics, biomedical engineering, microfluidics and biomechanics.
* High levels of motivation and the capacity for independent work
* A track record of being team focussed
* Good interpersonal, written, and oral communication skills
* A strong interest and commitment to producing leading international research
* Experience in instrumenting or operating single-molecule force spectroscopies such as optical tweezers, magnetic tweezers, patch-clamp electrophysiology systems, micromanipulation and microinjection systems, or other biomedical experimental devices such as rheometers and parallel plate flow chambers;
* Familiar with using two or more of Labview, ImageJ, AutoCAD, MATLAB, 3D-max, PRO-E, SolidWorks and other software;

**Desirable criteria – you may have experience with (or be willing to learn):**

* Solid basic knowledge of biology and hands-on experience in PC2 biological laboratory, using flow cytometer, ELISA, Western blots, protein-protein interaction assays, protein/antibody purification and functional characterizations;
* Capability of independently output processing models and drawings, be capable of CNC programming, use other conventional processing platform equipment to manufacture mechanical parts, and use 3D printers for part manufacturing.
* Pre-doctoral track record with publications, conference papers, reports, professional or technical contributions with evidence of independent research ability.
* Excellent oral and written communication skills.
* Small animal models, tissue collection and histology

In addition to the criteria above, the successful candidate will be expected to contribute to the research program by performing a range of research related tasks which may include the following:

* Assist in the conduct of experiments
* Assist in the general supervision of students in the laboratory
* Assist in the preparation of documents (for grant applications, research/conference papers)
* Provide administrative and financial management support for research projects and programs including the maintenance of electronic and paper-based information systems, data bases, websites and records
* Maintain lab equipment and materials including waste disposal and ordering supplies

The position is full time. The appointment period is for a maximum term of 12 months up to 2 further years of renewal. You will be employed by the Heart Research Institute but will be located at the Charles Perkins Centre, University of Sydney.

This is an outstanding opportunity to develop skills and gain valuable experience conducting innovative research in state-of-the-art facilities. The high calibre of scientists, new technologies and cutting-edge equipment are just a few features that make the partnership between The Heart Research Institute, the Charles Perkins Centre, and the University of Sydney a new precinct of excellence in premier cardiovascular research.

**How to apply:**

Your application should include:

* a cover letter and detailed curriculum vitae (CV) addressed to Dr Arnold Ju addressing the essential and desirable criteria.
* the names and full contact details of three professional referees (including email addresses).

**Further information** can be obtained by contacting Dr Lining Arnold Ju by email at arnold.ju@sydney.edu.au

**Closing Date**: Applications close 13 February 2021

**Eligibility**: To apply for this position you must have an appropriate Australian or New Zealand work visa.

**Please note**: Due to the volume of applications expected, only short-listed candidates may be contacted.

*This is a Category A position according to the NSW Health Policy - Occupational Assessment, Screening Vaccination Against Specified Infectious Diseases. The successful applicant will be required to provide evidence of protection against the infectious diseases specified, at their own cost, prior to appointment.*

*The Heart Research Institute is an equal opportunity employer committed to equity and diversity*