# POSITION DESCRIPTION

| | |
|---|---|
| **Title:** | PhD Scholar – Hudson Monash Paediatric Precision Medicine Program |
| **Group & Centre:** | Hudson Monash Paediatric Precision Medicine Program, Centre for Cancer Research |
| **Employment Agreement** | N/A |
| **Classification** | PhD Student |
| **Date Last Updated:** | August 2018 |

## Position Description Summary

The PhD program in paediatric cancer precision medicine is a full-time three-year program based at the Centre for Cancer Research at Hudson Institute of Medical Research. The PhD project will be tailored to meet the skills, experience, interests and goals of the successful applicant, but will be designed in a way to be specifically related to the Hudson Monash Paediatric Precision Medicine (HMPPM) Program (as detailed below). Students will be enrolled in the Department of Molecular and Translational Science at Monash University's Faculty of Medicine, Nursing and Health Sciences.

## 1. The Hudson-Monash Paediatric Precision Medicine Program

The Hudson-Monash Paediatric Precision Medicine (HMPPM) program aims to significantly improve treatment for childhood cancer patients with the greatest unmet clinical need – those diagnosed with brain cancers and solid tumours. The program is supported by the Children's Cancer Foundation (CCF) and led by A/Prof Ron Firestein, Dr Jason Cain and a team of scientists and paediatric oncologists at Hudson Institute, Monash University and the Monash Children's Hospital.

The HMPPM program includes the establishment of a living biobank of paediatric brain tumours and solid cancers – including living organoids or lab-grown 'mini-tumours' – to trial and develop new targeted treatments and improve survival rates for childhood cancer patients. The program also includes the establishment of a functional genomics pipeline, capitalising on the living biobank tumour samples to integrate genomic data (next generation sequencing) with functional data obtained from high-throughput genetic (Cas9/CRISPR) and results from global pharmacological drug screens. The comprehensive molecular analysis of individual patient tumours will help identify both new and existing therapies that can be rapidly implemented in the clinic. This approach will facilitate clinical implications of data from the functional genomics pipeline for individual paediatric patients.

With the HMPPM Program generating novel preclinical models of paediatric tumours and providing a screening platform for utilising such models to identify novel therapeutic targets, there will be considerable opportunities for PhD students to develop specific projects that directly arise from tools, technologies and data learned from these activities and for students to participate in multi-institutional collaborations and student/scientist exchanges across partnering sites.

## 2. Overview of the Position

Typical activities for this role include:

- Contribute towards the research effort of the HMPPM program and develop research expertise through the pursuit of defined projects relevant to Paediatric Cancer Precision Medicine
- Gain expertise in key research themes of precision medicine, such as functional and structural genomics, development of patient-centric preclinical models, and bioinformatics analytics
- Develop knowledge and skills required for effective translational research design and execution, with correlative science objectives
- Gain professional knowledge and skills in abstract presentation and manuscript preparation
- Develop an in-depth knowledge of epidemiology, natural history, treatment and outcome of childhood malignancy, especially solid tumours and brain tumours.
- Conduct literature review, develop research design and plan, and submit ethics and biosafety applications
- Present research progress at laboratory and Institute seminars internally as well as at external conferences and meetings
- Submit research publications to peer reviewed journals

## 3. Accountabilities, Characteristics and Responsibilities

| Area | Requirement |
|---|---|
| **Qualifications, Experience and Attributes:** | ▪ A tertiary qualification in Bachelor of Science or Honours or Masters or related discipline and appropriate level of expertise gained from a combination of experience, training or professional accreditation.<br>▪ Eligible to enrol for a PhD with the Department of Molecular and Translational Science of the Faculty of Medicine, Nursing and Health Sciences, Monash University. |
| **Supervision & Leadership** | ▪ Takes responsibility for coordinating others to complete tasks<br>▪ Follow complex direction<br>▪ May provide training to others<br>▪ May oversee or coordinate other research/technical staff and/or students |
| **Knowledge** | ▪ Gains expertise in functional and structural genomics, development of patient-centric preclinical models, and bioinformatics analytics<br>▪ Develops knowledge and skills required for effective translational research design and execution, with correlative science objectives<br>▪ Gains professional knowledge and skills in abstract presentation and manuscript preparation<br>▪ Develops an in-depth knowledge of epidemiology, natural history, treatment and outcome of childhood malignancy, especially solid tumours and brain tumours.<br>▪ Keeps up with relevant literature and technical advances<br>▪ |

| | |
|---|---|
| | ▪ Performs specialised tasks which require specific knowledge & proficiency in the work area's rules, regulations, processes & techniques<br>▪ Understands and identifies how their work impacts on other related functions<br>▪ Adapts procedures and techniques in consultation with others to achieve objectives<br>▪ Will contribute significant intellectual input into research direction<br>▪ Will contribute to the conceptualisation and development of research projects |
| **Communication & Profile** | ▪ Prepares data reports to a level appropriate for presentations and publications<br>▪ Contributes to the production of published works in refereed journals, books, conference or seminar papers<br>▪ Assists others with laboratory requirements<br>▪ Presents at Institute level and at external meetings |
| **Judgment, Innovation and Problem Solving** | ▪ Contributes intellectual input into the HMPPM research activities<br>▪ Will contribute to scientific and technical planning of scientific experiments<br>▪ |

## 4. Working Relationships

### Internal

- Supervisors
- HMPPM Program staff and students
- Laboratory Manager
- Other Centre for Cancer Research staff and students

### External

- Monash Animal Research Platform (if applicable)
- National / international collaborators

## 5. About Hudson Institute

Hudson Institute is a premier Australian discovery and translation medical research institute. By unravelling the biology underlying disease, the Institute will use this information for transformative and innovative solutions to major health problems.

Hudson Institute has diverse strengths and research excellence encompassing paediatric and perinatal medicine, cancers, infectious and inflammatory diseases, endocrinology and reproductive health. Progressing our research requires a focused and directed strategy that incorporates thematic and programmatic excellence across the Institute. The Institute Centres will coordinate their research activity to take advantage of novel approaches and new models of disease. Enabling technologies will be shared and new platforms developed to meet new research challenges.

As the major research partner at the Monash Health Translation Precinct (MHTP) the Institute will underpin the research agenda of the precinct and drive research solutions to disease, leading to better health outcomes. Sophisticated cutting edge technologies co-located with clinical and

laboratory research activities in the Translational Research Facility of the MHTP will enable the rapid translation of breakthrough discoveries to clinical care. Clinicians bring problems they have encountered at the bedside back to the laboratories to find solutions that will enhance patients' lives. The co-location of the Institute with Monash Health, one of the largest health care organisations in Australia, and our partnership with Monash University, the largest tertiary education and research organisation in Australia, enables the focus to be on patient needs. The research undertaken by Hudson Institute will address the major burdens of disease identified as priorities by the Federal Government and National Health and Medical Research Council and will integrate its research priorities with the themes of Monash Partners, a NHMRC accredited Advanced Health Research and Translation Centre.

Hudson Institute will be integral to the Faculty of Medicine, Nursing and Health Sciences (FMNHS) external relations strategic plan promoting strong relationships with hospital partners, driving interdisciplinary research in areas of national and global need and leveraging international partnerships.

To enable the vision of Hudson Institute to be world leading in research and translation, we must ensure our financial security, develop and nurture a highly skilled workforce, reward excellence and fully engage with the community to share and celebrate our ground breaking achievements.

## Vision and Values:

**Our Vision**: We strive to enhance human health and the quality of life through ground-breaking, collaborative, medical research discoveries and innovation, and ensure its direct impact on the community.

**Our Mission:** To capitalise on our multidisciplinary research strengths and academic and health partnerships to provide transformative and innovative solutions to major health problems.

**Our Values**:

Innovation: We inspire and enable world class researchers at the frontiers of science and medicine to find new and transformative solutions to people's greatest health challenges.

Collaboration: Our multidisciplinary, integrated approach creates an enriched, energetic environment that encompasses the entire lifespan; this allows our researchers and clinicians to leverage each other's knowledge to spark creative ideas and make unexpected discoveries.

Community: We care deeply about improving the health and wellbeing of people in the community and we are committed to rewarding their investment in science.

Excellence: Integrity and passion underpin our pursuit of the highest level of knowledge achieving significant outcomes whilst nurturing and inspiring the next generation of scientists.

## Other relevant information:

- Hudson Institute is a totally smoke free workplace.
- Hudson Institute is an Equal Employment Opportunity Employer.
- Hudson Institute has a commitment to Occupational Health and Safety. It is a condition of employment/study that staff and students comply with all health and safety related policy and procedures and take part in activities designed to improve the health and safety of the workplace.

- PhD scholarships will be open to all students (Australian or international) that are able to gain admission to the Monash University Doctoral program (PhD) in the Faculty of Medicine, Nursing and Health Sciences.
- PhD candidates will undergo selection, in accordance with Monash University guidelines, by the supervisors in the HMPPM Program.
- Remuneration is as per the NHMRC stipend for living expenses, tax exempt, for three years, plus a top up of AUD$5,000 per annum.

## 6. Endorsement

| | | | |
|---|---|---|---|
| **Name:** (Supervisor) | | | |
| **Signed:** | | **Date:** | |
| **Name:** (Employee) | | | |
| **Signed:** | | **Date:** | |
| **Name:** (HR) | | | |
| **Signed:** | | **Date:** | |