

## **Development and validation of cancer risk prediction tools within the Australian Cancer Risk Study**

### ***Background***

A PhD scholarship is available in genetic epidemiology, statistical genetics, or analyses of large-scale data, with an exciting opportunity to work on cancer risk prediction within the Australian Cancer Risk Study. The aim of our multidisciplinary research program is to deliver improved practice and policy-relevant genomics-informed risk prediction, increase the effectiveness of cancer screening and early detection services for the four most common cancers in Australia (breast, prostate, melanoma, colorectal cancer), and improve health of future Australians. The Australian Cancer Risk Study is funded through a grant from the Medical Research Future Fund (MRFF) Genomics Health Futures Mission.

The successful applicant will be based with the Daffodil Centre ([daffodilcentre.org](http://daffodilcentre.org)), which is a joint venture of the University of Sydney and Cancer Council NSW. The Daffodil Centre is a world-leading research centre on cancer control and policy – providing timely and relevant evidence to national and international policy-makers to inform best-practice decision-making in cancer control. It is focused on reducing the incidence, morbidity and mortality associated with cancer and on improving the quality of life of people with a cancer diagnosis.

### ***PhD project***

The successful applicant will work on the development and validation of cutting-edge cancer risk prediction tools, leveraging data from several large-scale cohorts including the Australian 45 and Up Study, UK Biobank, and other Australian studies. The data will include genomic information obtained through different platforms, including novel low-pass whole genome sequencing. The applicant will integrate the genomic information with lifestyle, phenotypic, sociodemographic and linked health data to capture different risk components and create risk tools tailored to the Australian population.

The applicant will be encouraged and supported to publish their research in high-impact journals and present their results at relevant conferences and to different stakeholders. They will work within a large collaborative team of researchers, consumers, health professionals, and policy stakeholders.

This PhD project will suit a student with strong quantitative and analytical skills. Ideally students should possess a master's degree in statistics/biostatistics, epidemiology, health data sciences, statistical genetics, or a related quantitative discipline. The project will suit candidates with either training or a very strong interest in genomics and public health. The ideal candidate will have an excellent academic record combined with strong communication skills.

### ***Supervisors***

The PhD student will have a supervisory team including Professor Anne Cust, Assistant Professor Julia Steinberg, and 1-2 early-career researchers. The student will be encouraged to join research student networks in the Daffodil Centre, the Faculty of Medicine and Health, and Cancer Research Network. The successful applicant will develop skills in risk prediction, genetic epidemiology, the analysis of large and complex datasets, and population health sciences.