Australia was announced in April 2009, as a contributing member of the International Cancer Genome Consortium (ICGC) to investigate Pancreatic Cancer thanks to a proposal co-lead by Professor Sean Grimmond from the University of Queensland’s Institute for Molecular Biosciences, and Professor Andrew Biankin of the Garvan Institute of Medical Research. This has given rise to the Australian Pancreatic Cancer Genome Initiative (APGI).

The APGI is a large-scale team project designed to catalogue at an unprecedented scale genomic variations associated with pancreatic cancer. This 5-year project is primarily funded by the NH&MRC, with further support provided by The Cancer Council NSW, the Queensland Government, the Garvan Institute, University of Queensland and the Avner Nahmani Pancreatic Cancer Foundation. The total cost of the project is in excess of $75 million.

Information from the APGI will flow into the ICGC (http://www.icgc.org), with the data made available to the broad research community. This world-wide project was formed in 2008 to undertake the ambitious task of defining the underlying molecular events initiating and driving all common forms of cancer through a coordinated analysis of genomes, epigenomes and transcriptomes in large cohorts of patients.

The ICGC is expected to lay the foundation for personalised medicine, and be used to develop more effective ways to diagnose, treat and prevent pancreatic cancer. It is founded upon a central premise - that cancer is a disease characterised by genomic alteration, the majority of which remain unknown.

The APGI is a nation-wide project with international contributions and includes collaborations with some of the world’s leading Pancreatic Cancer scientists and clinical teams. You can read more about our collaborators at http://www.pancreaticcancer.net.au/apgi/collaborators.

The APGI comprises three major components: The Biospecimen and Data Core (BDC), The Genome Sequencing Center (GSC) and the Bioinformatics and Computational Analysis Core. A major requirement for this project is the analysis, acquisition, processing, and distribution of high-quality biospecimens. Therefore, the APGI established the BDC to receive and manage quality-verified tissues and blood products with associated clinical annotation, isolate biomolecules from those tissues, qualify and perform a quality control (QC) review of biospecimens during the process, and aliquot and distribute those materials to The Genome Sequencing Center.
The specific aims of the APGI are:

1. To prospectively accrue a cohort of around 400 patients across Australia who have undergone current best practice treatment for Pancreatic Cancer,
2. To acquire, process, analyse high-quality biospecimens that are fit for scientific purpose. Biospecimens are to be obtained from a network of prospective collections at multiple sites across Australia,
3. To deeply sequence tumour and normal genomic DNA,
4. To survey global gene expression by RNAseq methods, and
5. To determine methylation states.

Outcomes include:

1. Identification of novel key ‘driver’ mutations in pancreatic cancer,
2. Define molecular phenotypes (subtypes) of pancreatic cancer, and
3. Define biomarkers of prognosis and therapeutic responsiveness in pancreatic cancer.

The APGI plans to engage all members of clinical treatment teams in this project, such as surgeons, pathology staff, radiologists, gastroenterologists, medical and radiation oncologists as well as nursing staff to ensure the success of the initiative.

The project will involve the collection of high-quality biospecimens that are platform specific, with accompanying comprehensive clinico-pathological data. The goals of the national resource are:

- To optimise and standardise the quality of human biospecimens for the research that will drive the development of personalised cancer medicine,
- To overcome the barriers to cancer research due to limited availability of high-quality, platform appropriate human biospecimens, and
- To lay the foundation for tomorrow’s standard of care
Overview of Sample Acquisition

Additional Studies

EUS FNA (CORE) Biopsy

FNA (CORE) Biopsy

Presentation   Diagnosis   Treatment Plan   Surgery   Adjuvant Therapy   Monitoring   Recurrence   Death

Recruitment

Patient Consent
Sample Collection (Blood)
Recording of Serum Markers
Recording of Clinico-pathological Data

Date and Cause

Sample Collection (Blood)
Recording of Serum Markers
Recording of Clinico-pathological Data

Core Study

Resection Sample Collection
Operative Data Recording
Xenograft Generation