

# 2020 Research Awards

## Project Title:

Cancer evolution biobank

## Lead Investigator:

**Prof A Barbour**

Clinician researcher, general surgery  
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## Collaborative Project Team:

**M Smithers, V Atkinson, L Auode, V Bonazzi,**

## Project Summary:

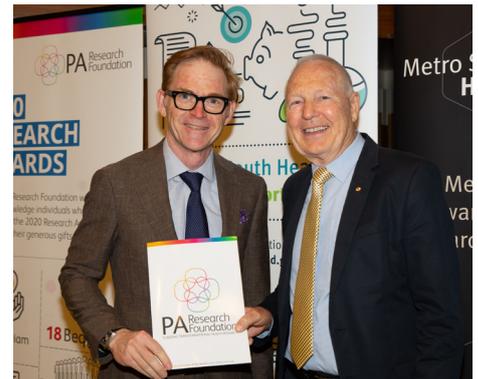
Cancer is a significant clinical problem in Australia and across the world. It is critical to develop novel therapeutic and surveillance modalities to improve the health outcome for patients. In melanoma, research to understand tumour mutations has led to the development of specific therapies that target commonly recurring mutations (present in 50% of patients). The discovery of immunotherapies has also benefited melanoma patient survival, however improved therapies are needed.

Progress in the prognostication and targeted treatment of OAC patients has been hampered by limited understanding of the genomics of this disease. Tumour genomic heterogeneity and evolution are understood to be features of poor outcome cancers. The processes driving intra-tumour heterogeneity (ITH) and evolution, especially during treatment, are not completely understood. This Cancer Evolution Biobank will provide the tools required to unravel complexities associated with tumour evolution and treatment failure.

While traditional tissue banks store a single blood and tissue sample per patient, we will store multiple samples from several time-points in a patient's journey to understand the differences in cell populations over time. Blood samples will be collected at different clinic visits. This will allow us to track changes in the tumour and blood biomarkers that are induced by treatment and link this back to patient outcome.

## Research Benefits:

The research that will be facilitated by the Biobank will improve health outcomes for Australians diagnosed with cancer by delivering high quality care through a person-centred approach. Our existing biobank facilitates 14 collaborative research projects encompassing genomics, immunology and blood biomarker discovery. The Cancer Evolution Biobank proposed here will build on these efforts and play a central role in leveraging external funding for translational research. The techniques available for studying ITH and cancer evolution are rapidly evolving. Our high clinical throughput and co-located research facility (TRI) uniquely places us to study cancer evolution



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