

# An emerging field of cancer research with the potential to revolutionise cancer treatment for solid tumours

## The challenge and opportunity

New approaches to tackling the cancer burden are urgently needed. In 2019 alone over 684,000 chemotherapy procedures and over 74,000 courses of radiation were delivered to patients across Australia <sup>(1)</sup>.

Theranostics is a novel approach which combines diagnosis and therapy at the cellular level. In a finely targeted search and destroy process, theranostics employ tumour markers to deliver a therapeutic radioisotope to kill tumour cells.

**To date, the application of theranostics has been limited to a very small range of malignancies but there is real potential to extend the benefit to all cancers.**

## Project in brief

- The ACRF Molecular Theranostics Laboratory (MTL) will enable world-leading research into the use of theranostics to treat all solid tumour malignancies. Initial research will focus on colorectal, stomach, liver, lung and brain (glioblastoma). Ultimately theranostics can also treat head & neck, breast, uterus, ovarian, pancreatic, prostate and sarcomas.
- Researchers at the ACRF MTL will leverage the breakthrough discovery of Chief Investigator Professor Philip Hogg – the Cell Death Indicator (CDI). This CDI theranostic will facilitate identification of dead or dying tumour cells (a common property of solid tumours), and then administer therapeutic radiation to target and destroy neighbouring living tumour cells.
- The ACRF MTL will be based at the Centenary Institute, Sydney NSW.





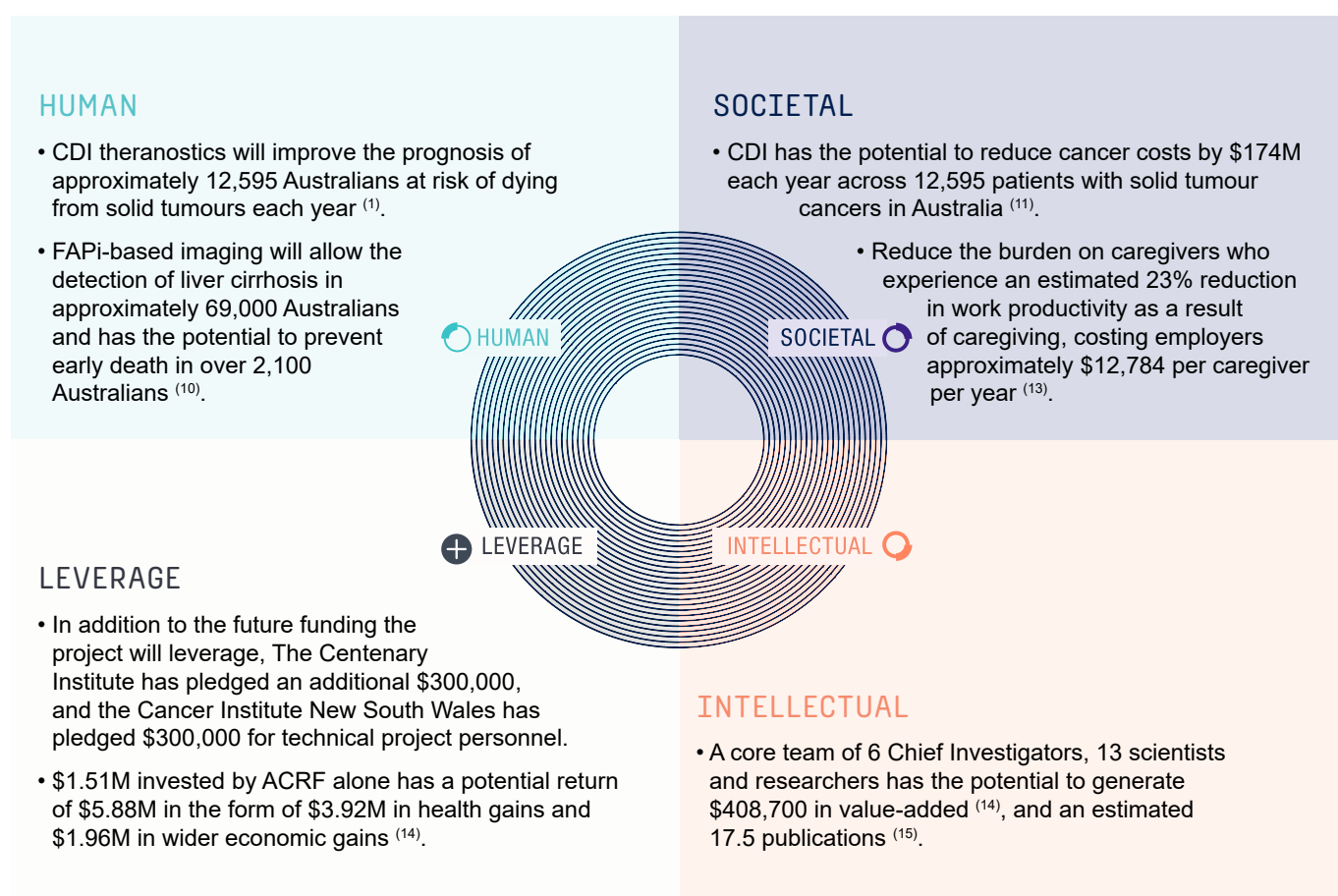
## Project costs

The \$1.5M funding will be used to build a laboratory equipped with all the state-of-the-art equipment necessary to undertake the three pioneering research programs:

- The development of a pan-tumour theranostic for all solid cancer types.
- The use of a new imaging agent to detect pre-cancerous cells in tumour tissue.
- The development of a new chelator-antibody complex for use in radiometal-based cancer imaging and therapy.

## ACRF Impact Model

With input from health economics specialists, ACRF has developed a model to anticipate the future impact of projects that receive ACRF funding. Below is an overview of the outcomes the ACRF MTL is aiming to achieve:



For references, please visit [acrif.com.au/philanthropy-accelerate-references/](https://acrif.com.au/philanthropy-accelerate-references/)



## Contact information

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