ACRF ACCELERATE
An Impact Philanthropy Initiative

AUSTRALIAN CANCER RESEARCH FOUNDATION

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 [(1)].

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

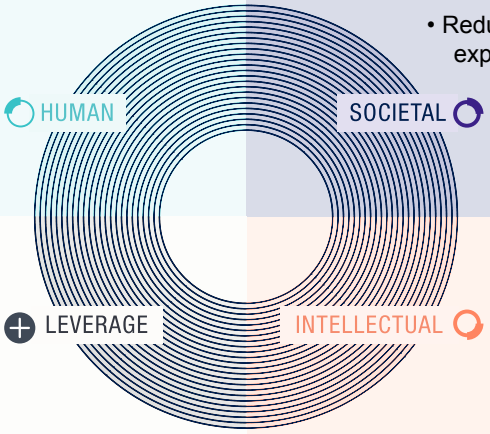
With input from health economics specialists, ACRF has developed a model to anticipate the future impact of projects that receive ACRF funding. Below is an overview of the outcomes the ACRF MTL is aiming to achieve:

HUMAN

- CDI theranostics will improve the prognosis of approximately 12,595 Australians at risk of dying from solid tumours each year [1].
- FAPi-based imaging will allow the detection of liver cirrhosis in approximately 69,000 Australians and has the potential to prevent early death in over 2,100 Australians [10].

SOCIETAL

- CDI has the potential to reduce cancer costs by $174M each year across 12,595 patients with solid tumour cancers in Australia [11].
- Reduce the burden on caregivers who experience an estimated 23% reduction in work productivity as a result of caregiving, costing employers approximately $12,784 per caregiver per year [13].



LEVERAGE

- In addition to the future funding the project will leverage, The Centenary Institute has pledged an additional $300,000, and the Cancer Institute New South Wales has pledged $300,000 for technical project personnel.
- $1.5M invested by ACRF alone has a potential return of $5.88M in the form of $3.92M in health gains and $1.96M in wider economic gains [14].

INTELLECTUAL

- A core team of 6 Chief Investigators, 13 scientists and researchers has the potential to generate $408,700 in value-added [14], and an estimated 17.5 publications [15].

For references, please visit acrf.com.au/philanthropy/accelerate-references

Contact information

For more detailed project information, or to make a contribution,
please contact Victoria Bonsey, ACRF Philanthropy Manager via email: philanthropy@acrf.com.au
or phone 0401 510 181 or 1300 884 988. www.acrf.com.au/philanthropy