THE UNIVERSITY of ADELAIDE

Dame Roma Mitchell Cancer Research Laboratories

Better health through research

The **Dame Roma Mitchell Cancer Research Laboratories** (DRMCRL) have an international reputation for research into sex hormone action in hormone-dependent cancers, with emphasis on breast and prostate cancers.

We are the leading research centre in Australia dedicated to ***breast and prostate cancer research that spans discovery to clinical translation***. We uniquely leverage similarities between these cancers to forge new discoveries.

Our goal is to develop precision medicine treatment strategies to ***improve patient outcomes and quality of life***.

The DRMCRL is ***named in recognition of an iconic South Australian, Dame Roma Mitchell*** (1913-2000), a woman of many firsts: the first female Queen's Counsel, Supreme Court Judge of Australia, Governor of South Australia, and Chancellor of the University of Adelaide.

Located in the new Adelaide Health and Medical Sciences (AHMS) building, University of Adelaide, in state-of-the-art laboratories, the DRMCRL lies ***within the heart of Adelaide's BioMed City precinct***, one of the largest hubs of world-class health and biomedical facilities in the Southern hemisphere.

Director

Professor Wayne Tilley, PhD

A pioneer of sex hormone receptor action in breast and prostate cancers, Prof Tilley founded the DRMCRL in 2002 with his mentor Prof Villis Marshall (AC) to establish a world-class institution in SA dedicated to translational research in the field of hormone-dependent cancers. The DRMCRL is internationally recognised for research excellence, has been continuously funded by competitive research funding since inception, produces high impact scientific publications, has translated research findings into clinical trials, and actively engages in scientific and public outreach initiatives to disseminate new knowledge.

Scientific Program Leader

Associate Professor Theresa Hickey, PhD

Internationally recognised for research on sex hormone action in female reproductive tissues and disorders, with specific expertise in breast cancer. Joined DRMCRL as a post-doc (2007), became Head of Breast Cancer Research (2015) and is now Scientific Program Leader (2020). Passionate about facilitating translational research by developing clinically relevant models of disease, investigating new therapeutic strategies that involve the repurposing of drugs approved for use in people, and promoting therapies that are non-toxic to improve quality of life under treatment as well as prolonging survival.

Contact us:

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See our website for more details of our research program

https://health.adelaide.edu.au/drmcrl/

Our Research

A major research focus at the DRMCRL is to use contemporary genomic and proteomic platforms to interrogate steroid receptor activity in clinical samples or patient-derived models of breast or prostate cancer to understand disease progression and therapeutic resistance. Steroid receptors (e.g. estrogen, androgen, progesterone, glucocorticoid receptors) are ideal drug targets and the pharmaceutical industry is continually developing drugs that selectively modulate their activity, many already approved for use in people. We have a major program incorporating national and international collaborators investigating how such drugs can reprogram the oncogenic behaviour of steroid receptors, like the androgen receptor in prostate cancer and the estrogen receptor in breast cancer, to 'rehabilitate' their actions and redirect them toward more normal, benign behaviour. The DRMCRL received the inaugural Breast and Prostate Linkage Grant funded by Movember and the National Breast Cancer Foundation to use this approach to transform endocrine therapy for these diseases.

A key to performing successful translational research is to use models that more closely resemble human disease. The DRMCRL strives to use and develop clinically relevant pre-clinical models. We have pioneered an ex vivo culture methodology to sustain the viability and complexity of small pieces of patient tissue, normal and cancerous, to test their responses to specific treatments. The technique is now used world-wide in several disease contexts. We also employ patient-derived xenograft and organoid models of breast and prostate cancer, enabled by a broad international network of collaborators.

Consumer Advocate Engagement

The DRMCRL has an active consumer advocate team comprised of cancer survivors and community supporters. They participate in DRMCRL sponsored events including laboratory tours, public presentations and panel discussions. DRMCRL researchers value consumer perspectives throughout the research process; the exchange of experience, knowledge and expertise is an integral part of our applications for research funding and our success as an institution.