

Spring 2018



WCB newsletter

Clinical Director: Prof Richard Adams Manager: Dr Alison Parry-Jones
Scientific Director: Dr Richard Clarkson

FUNDING CALL — ASTRA

The Wales Cancer Research Centre (WCRC) has launched its **Access to patient Samples for Translational Research Award (ASTRA)**. This innovative funding stream is open to all cancer researchers in Wales, irrespective of field of study, seniority and geographical location. WCRC have introduced the awards to build capacity in research that uses biological samples. WCRC will award funds for access to and analysis of samples from Welsh biobanks, including, but not limited to, those already stored in the Wales Cancer Bank (WCB).

There will be calls to apply for an ASTRA over the next eighteen months. The likely value of each award will be in the region of £3,000 to £15,000. WCRC intend awards to cover various costs associated with sample collection, which include:

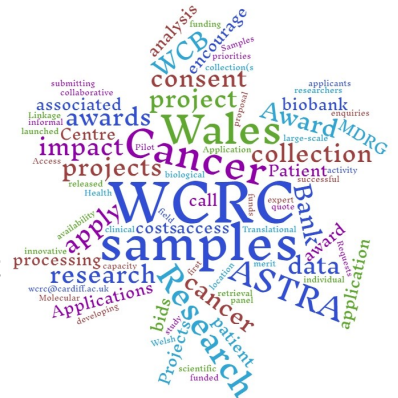
- Patient consent, sample collection and processing
- Linkage of clinical and research data
- Molecular analysis

WCRC encourage applications for projects that involve large-scale sample usage (over 100 samples). Applications from collaborative projects (including but not limited to MDRGs), activity which makes the best use of individual samples and/or the collection(s) as a whole, and/or former WCB Pilot Projects are also encouraged. Projects should be aligned to the priorities of the Wales Cancer Research Centre which is funded by Health and Care Research Wales.

The closing date for the first call was 14th February 2018. WCRC will announce the first successful bids on 1st March 2018, with a view to projects starting on 1st April 2018. WCRC encourage applicants to learn of sample availability before submitting their project proposal. The Wales Cancer Bank is currently developing a list of costs associated with sample collection, retrieval and processing. Further calls will be announced.

If you would like to use the Wales Cancer Bank for your samples, please email: wcbresearchapplication@cardiff.ac.uk for a quote.

Applications will be judged by an independent, expert panel on scientific merit, feasibility of sample access, and potential future patient impact. Requests for further information and informal enquiries should be addressed to Jo Baker at wrcr@cardiff.ac.uk



WCB Team News

Huge congratulations to Professor Malcolm Mason who received an OBE in the Queen's Birthday Honour's list, for services to the NHS and cancer research. Malcolm was the Cancer Research Wales Professor of Clinical Oncology, and has been a clinical researcher for over 30 years.



He has played an integral role in some of the most important and practice-changing clinical trials in prostate cancer in the last few decades. He was the founder of the Wales Cancer Bank which was the UK's first National biobank, and which is still seen as a model, both nationally and internationally.

WCB Director of Science Due to her increased commitments at Imperial College, London, Professor Geraldine "Gerry" Thomas has stepped down as WCB's Scientific Director.



Dr Richard Clarkson has taken up the reigns of WCB's Scientific Director.

Richard Clarkson is Senior Lecturer in cancer research at the European Cancer Stem Cell Research Institute, University of Cardiff School of

Biosciences. He is also a Theme Lead for Wales Cancer Research Centre.

Richard received his PhD from the Faculty of Medicine, University of Manchester and carried out research at the Universities of Queensland, Edinburgh and Cambridge before moving to Cardiff in 2005. Having worked for more than 10 years on the biology of the mammary gland and the regulation of epithelial cell apoptosis, Richard's research group now focuses on applying this knowledge to identify novel therapeutic strategies to eliminate or modify the cancer cells responsible for the spread of tumours around the body, the main cause of deaths in cancer patients.

Richard was responsible for developing the first tissue collection from breast cancer patients in Wales, which now forms an important part of the WCB portfolio. "He now has active research projects in several tumour types, including breast, prostate and pancreatic cancers".

New Recruits 2017 saw two new additions to the WCB research team; Stephanie Coakley who will be working across various sites across Cardiff,

and Ted Lewingco who will be based in UHW. They introduce themselves below.



Stephanie Coakley

Hello, my name is Stephanie and I joined the Wales Cancer Bank team in August 2017. Having trained as a doctor and worked within the NHS for a number of years, my interest in research and in particular the field of oncology has brought me to the Wales Cancer Bank and I'm excited to be involved in this important work. I hope I can make a useful contribution towards advances in cancer research and improved patient outcomes.

My role is comprised of two main components, firstly recruiting lung cancer and mesothelioma patients across the UHW, Llandough hospital and Velindre Cancer Centre sites for inclusion in the biobank. Secondly I will be working with clinicians to identify and recruit patients thought to benefit from participation in the Stratified Medicine Programme which is an exciting collaborative project between Cancer Research UK, the NHS and pharmaceutical industry. It aims to use genetic testing to target more personalised treatments for late stage non-small cell lung cancer patients as part of the National Lung Matrix trial.

Having previously worked at Velindre and the Gloucestershire Cancer Centres I have first-hand experience of the care of oncology patients and the vital but complex role that chemotherapy, radiotherapy and immunotherapy can play in their treatment. Any new treatments that can be tailored to a patient's individual genetic make up to improve both the quality and quantity of life and reduce unwanted side effects is an exciting project to be involved in.



Ted Lewingco

Hello, my name is Ted. I graduated from Cardiff University in 2016 with a degree in Biomedical Science. My first job after graduation was in the Biochemistry Department at

Morrison Hospital. I joined the Wales Cancer Bank team in early October 2017 working as a Laboratory Technician in the Clinical Trials section.

I hope my knowledge and previous experience can contribute toward the advancement of cancer research.

Advances from WCB: How new breakthroughs in cancer research have been facilitated by patients' donated samples...

New hope for drug resistant breast cancer

Breast tumour samples donated by patients at the Cardiff and Vale breast clinic, Llandough Hospital help identify a new second-line therapy for breast cancer.

Around 70% of breast cancer patients are diagnosed with **oestrogen-receptor positive disease**, where their breast tumours exhibit high levels of a factor that make the cancers sensitive to the fluctuating levels of oestrogen in the body. Oestrogen receptor positive breast tumour cells become 'addicted' to the oestrogen, replicating uncontrollably to increase tumour size, and potentially promote the spread of tumour cells to other parts of the body.

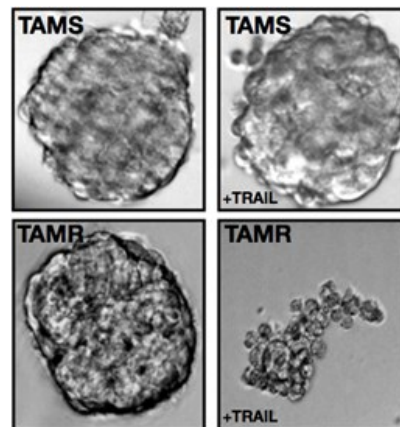
Treatment of oestrogen receptor positive breast cancer is very effective. **Anti-hormone receptor drugs** such as tamoxifen and fulvestrant block the effects of oestrogen on these tumours, and have significantly improved the survival rates of breast cancer patients. However, around one half of all patients receiving these therapies will, ultimately, become resistant to these drugs and may relapse with secondary breast cancers, which may be more aggressive and unresponsive to further anti-hormone receptor therapy.

While it may take many years for these tumours to acquire this resistance, once acquired the treatment options for relapsed patients are relatively limited and often involves aggressive chemotherapy. It is recognised therefore that there is a clear need for new **targeted therapies** for this at-risk patient group.

Targeted therapies are 'designer treatments' that are aimed at very specific abnormalities within cancers – that may only be present in a small subset of cancer patients, but are highly effective at treating their disease.

A recent study from a research group at Cardiff University, reported in the international cancer journal *Clinical Cancer Research* (clincancerres.aacrjournals.org/content/early/2018/01/20/1078-0432.CCR-17-1381) has identified an "Achilles heel" in breast tumours that had previously acquired

resistance to tamoxifen. Using samples donated to WCB by patients attending the Cardiff and Vale Breast Clinic in Llandough, the research group led by Dr Richard Clarkson (www.cardiff.ac.uk/research/cancer-stem-cell) has shown that 85% of patients who had developed resistance to tamoxifen went on to develop a sensitivity to an unrelated therapeutic agent TRAIL. Intriguingly, patients who did not develop resistance to tamoxifen were not responsive to TRAIL.



Breast tumours grown in the laboratory exhibited different responses to TRAIL depending on whether the tumour cells were sensitive to tamoxifen (TAMS) or had an acquired resistance to tamoxifen (TAMR).
From Clin Can Res. <http://clincancerres.aacrjournals.org/content/early/recent>

Luke Piggott, the lead investigator on the study, said: "TRAIL is currently not used to treat breast cancer as most breast cancer patients are resistant to it. However, our findings suggest that it could be prescribed for the minority of breast cancer patients who re-present with breast cancer after tamoxifen therapy."

A key finding of this study is that TRAIL is particularly effective at killing the **cancer stem cells** within these tumours (see *WCB Interest: cancer stem cells*) meaning that successful treatment would prevent further relapse and therefore could significantly improve disease-free survival.

"The next step is to test TRAIL in clinical trials" Luke explains. "We hope to lead these trials out of breast clinics across Wales, targeting patients with recurrent disease. We will work closely with WCB during these trials to ensure that we maximize the information on the effects of TRAIL in these selected patients."

WCB's ongoing mission is to facilitate basic, translational and clinical cancer research such as this, helping to provide improved outcomes for cancer patients across Wales and beyond.

WCB Interest: Understanding new ideas and advances in cancer research

“Cancer Stem Cells: the root of cancer”

Just as the seeds of a sycamore tree are the only part of the tree capable of growing new saplings, so too cancers contain a small number of ‘seeds’ that possess the exclusive capability to form new tumours. This is the conclusion of research over the past 15 years leading to the concept of the cancer stem cell. This hypothesis proposes that cancer stem cells make up approximately 1% of tumour mass, yet it is only these cells that are responsible for the re-

growth of tumours after therapy (precipitated by the fact that cancer stem cells are resistant to chemotherapy) and for the spread of primary tumours to new secondary sites around the body – a process termed metastasis. This has the potential to turn cancer therapy on its head. Rather than targeting the bulk of the tumour with conventional chemotherapy, new therapeutics are being developed that will selectively kill the small population of cancer stem cells within tumours. It is hoped that this will prevent regrowth and progression of tumours to advanced metastatic disease – thus improving survival rates for cancer sufferers.

News Bites

Lay Liaison and Ethics Group (LLEG)

Roy Norris has regrettably resigned from his position of Vice-Chair of LLEG. In April 2017 he was elected to his local council in Mid-Wales and felt no longer able to dedicate time to his role for the Lay Group. We extend our gratitude for his valuable services to the group and wish him every success in his political career.



Keith Cass MBE, a long-time member of the Lay Group, has very kindly stepped up to the role

of Vice-Chair, taking over from Roy.

Following a cancer diagnosis in 2006 Keith launched the “**The RedSock Campaign**” to promote prostate cancer awareness. Keith was awarded an MBE in 2013 for his services to all those affected by prostate cancer.

For more information on the activities of LLEG or to read the biographies of the Chair and Vice-Chair of LLEG please visit the WCB website:

<http://www.walescancerbank.com/become-a-lay-volunteer.htm>

Get in Touch.....

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The Wales Cancer Bank project is extremely grateful to all its funders, collaborators and host:

