



Canolfan Ymchwil Canser Cymru  
Wales Cancer Research Centre



Ymchwil Iechyd  
a Gofal Cymru  
Health and Care  
Research Wales



# 2017-18 Annual Report





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The Wales Cancer Research Centre is funded by Welsh Government through Health and Care Research Wales.

This report has been compiled with input from our public and patient involvement group.



# INTRODUCTION



***“Our vision is to work with cancer patients and other partners to develop and deliver research excellence that benefits the health and welfare of people in Wales and beyond.”***

The Wales Cancer Research Centre is funded by the Welsh Government and is a key part of Health and Care Research Wales’ infrastructure.

research nurses, academics, clinicians, pharmacists, pathologists and biomedical scientists.

We perform and support cancer research of the highest quality, which builds on Wales’ international research reputation, with a clear focus on collaboration, innovation and improved patient outcomes.

An External Advisory Board guides the centre in its work. It includes 12 UK experts from across the cancer research spectrum and ensures that our research is of the highest quality and internationally relevant.

Our vision is to work with cancer patients and other partners to develop and deliver research excellence that benefits the health and welfare of people in Wales and beyond.

The centre has recently received £3 million funding renewal from Welsh Government, through Health and Care Research Wales, to continue our research until 2020, across four broad research themes: Pre-clinical, Translational, Clinical and Community.

We fund 41 full and part-time posts and aim to improve collaboration in cancer research by bringing these staff and their colleagues together across Wales. Our researchers fulfill a broad range of roles including



**Above: locations of our staff across Wales**

## OUR PARTNERS



# FOREWORD



As we arrive at the end of our third year, there is much to look back on and celebrate. I believe the centre has made a genuine impact on Welsh society, on the economy, and most importantly, on cancer patients and their families.

The Wales Cancer Research Centre was funded £4.5 million for our first three years of operation, and I am delighted that our funding from Health and Care Research Wales has been independently assessed as justifying a further £3 million, over the next two years. The people of Wales have seen a fantastic return on this impressive investment, with genuine benefits already being felt by cancer patients, their families and communities, with yet more to come, in the near future. Through grants won by our staff, we have brought more money into Wales to fund additional research, and created the equivalent of 79 extra full time jobs.

In fact, for every £1 of funding we have received, we have generated a further £6, strengthening our reputation and making Wales a better place to conduct research. In addition to £28.2 million grant income generated in the last three years, our expertise has been a significant contributor to the success

of Cardiff University's Centre for Trials Research which has been awarded an extra £5.5m from Cancer Research UK to support cancer clinical trials in Wales and throughout the UK.

We have worked closely with industry collaborators including AstraZeneca, Bristol Myers Squibb, Novartis and LEO Pharma to bring in additional funding and increase clinical trial activity. A noteworthy example of our industry partnerships is Prof Duncan Baird's spin-out company TeloNostiX which has obtained contracts with large pharmaceutical companies to include genetic testing in an ongoing clinical trial, which could provide better prediction of outcomes for cancer patients.

Patients and the public are ever at the heart of what we do, and continue to improve our work, contributing to outcomes such as consenting a third of tissue donations to the Wales Cancer Bank.

It's important that I put on record, on your behalf, the enormous gratitude we all owe to the many researchers and support staff, throughout Wales, who have contributed to bringing benefit to cancer patients and the wider community. The successes above will give you a flavour of the year's many achievements, set out in the following pages. I hope you enjoy reading on and I would encourage all our readers to get involved with our work, to whatever extent you can, in the coming year.

**Prof. John Chester**  
Director




**DIRECTOR**  
Prof John Chester




**PUBLIC & PATIENT INVOLVEMENT**

**LAY LEAD**  
Dr Jim Fitzgibbon




**ACADEMIC LEAD**  
Prof Annmarie Nelson




**COMMUNITY**

**THEME LEAD**  
Dr Anthony Byrne




**CLINICAL**

**THEME LEAD**  
Prof John Staffurth




**TRANSLATIONAL**

**THEME LEADS**  
Dr Richard Clarkson




Prof Richard Adams



**PRE-CLINICAL**

**THEME LEAD**  
Prof Julian Sampson



**WORK PACKAGE LEADS**


**Stratified Medicine**  
TBA



**Novel Therapeutics & Model Systems**  
Prof Andrew Westwell



**Cancer Genetics & Genomic Instability**  
Prof Duncan Baird





**Cancer Immunology**  
Prof Awen Gallimore




**Signalling & Stem Cells**  
TBA




**Palliative & Supportive Care**  
Prof Annmarie Nelson & Prof Simon Noble



**Screening, Prevention & Early Diagnosis**  
Dr Kate Brain



**Integration & Informatics**  
Prof David Ford





**Trials Through to Practice**  
Dr D Mark Davies

Dr James Powell

**Early Phase Trials**  
Dr Robert Jones

Dr Steve Knapper

**WALES CANCER RESEARCH CENTRE LEADERSHIP TEAM**



# LAY SUMMARY

Cancer is a disease no one wants to face, yet one in two of us will develop it in our lifetime. In Wales alone, around 120,000 people are currently living with cancer, and this figure is set to almost double in the next fifteen years.

The Wales Cancer Research Centre is conducting excellent research to improve treatments, clinical decision making and quality of life for patients.

We are building on, and extending, ground-breaking research which has contributed to a doubling in cancer survival in the last forty years. Now half of all cancer patients survive for ten years or more. We are working hard to do even better.

We employ 41 members of staff at all levels of research, including nurses, doctors, laboratory researchers and pharmacists. Together they carry out research at every stage, from understanding the scientific basis of cancer to developing treatments that improve the health and wellbeing of individual cancer patients.

- ◆ We are helping ensure better support for patients in end of life care
- ◆ We are focusing on screening, prevention and early diagnosis to combat cancer in the community.

Even with all these successes, our work is only partly done. Tackling cancer is a huge, global challenge, but we're successfully treating more cancers than ever before. We believe that, by working together, within Wales and internationally, we will meet the challenge.

We hope that the work of the Wales Cancer Research Centre, leading in several areas and collaborating effectively in others, will continue to play its part in helping us reach our goal.

## **Public, Patients & Carers**

At every stage of our work we aim to involve the public, carers and patients in our research. We believe that they are not just the focus of our research, but should be active participants, working with researchers to plan, manage, carry out and publicise our work. We have appointed, trained and provide on-going support to a team of eight members of the public who work with research staff across the Centre. In the last year they have ensured that the research we conduct is relevant, they have contributed to trial recruitment and improved the process for informed consent for tissue donors.

We regularly engage with the public to increase knowledge about the importance of cancer research, and how it's conducted in Wales. We organise events and bring our research to museums, festivals and busy public spaces. This allows the public direct access to our researchers through talks, activities and hands-on tours of our research sites. Our engagement work has impacted on young people's interest in studying science, public knowledge of personalised medicine and improved public awareness of clinical trials.

If you are a member of the public who is interested in getting involved in our research, please email us on [WCRC@Cardiff.ac.uk](mailto:WCRC@Cardiff.ac.uk) or call 02921 848970.

For instance:

- ◆ We are developing new treatments in the laboratory with a focus on genetics, immune systems treatments, stem cell research and drug development.
- ◆ We are moving discoveries from the laboratory into the NHS clinical setting with the aim of improving care for current and future patients. We're helping scientists, using samples donated by patients, to understand cancer better for improved patient treatment, diagnosis and quality of life.
- ◆ We are giving more patients in Wales the chance to take part in early phase clinical trials using the latest cutting-edge treatments.

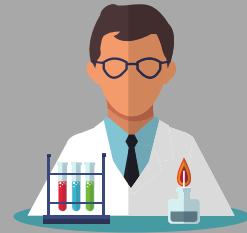


# OUR RESEARCH IN NUMBERS



For every £1 invested we have generated £6 for the Welsh economy.

Equivalent of 79 additional full time posts created through our research grants since our launch



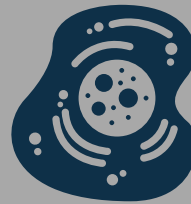
**£8.9m**

income generated over this year over 34 grants

**99**  
publications disseminated this year



17 clinical trials opened this year



**14,200** tissue samples were donated to the Wales Cancer Bank. **3,000+** samples issued to researchers this year



Our research papers can be considered highly regarded with an average impact factor of 8



2,700 members of the public engaged with our research at 15 events



Number of days travel saved for patients this year by opening early phase trials in Wales

111 public and patient involvement opportunities offered since our launch





# NEWSBITES

## 1 DIAGNOSTIC TEST

Examples of direct patient impact from the last year include the development of a new diagnostic tool, (known as ctDNA) for lung and colorectal cancer. Diagnosis was once routinely performed by a minor operation, but the new tool requires only a blood sample, avoiding an invasive procedure for some patients, reducing patient risk and NHS costs.

## 2 BLOOD CLOTS AND CANCER

People who have cancer are seven times more likely to develop a blood clot than similar non-cancer patients. Prof. Simon Noble has won a commercial project (Leo Pharma) worth over £2 million for a multi-centre study on cancer associated blood clots.

## 3 GENOMICS & PRECISION MEDICINE STRATEGY

We are influencing policy with input to the Wales Government's genomics and precision medicine strategy. We have been working on the panel for advanced genetic sequencing work across cancer types. We are making good progress here and in addition, are educating healthcare professionals in Wales on genomics in medicine.

## 4 RAPID REVIEWS

Health care professionals can now get help with crucial information for end of life care more quickly. Our rapid review service helps to answer their questions and so improve end of life care throughout Wales.

## 5 NATIONAL CONFERENCE

The Wales Cancer Conference brought together 300 cancer researchers, NHS staff and members of the public for the first time in the last ten years. Improving understanding of cancer care from both a clinical and research perspective should lead to better solutions.

## 6 INCOME TO WALES

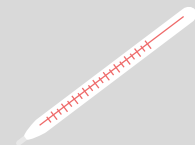
Since our launch, £28.2 has been brought into Wales by our researchers winning grants to continue or expand their work. This has also generated the equivalent of 79 full time jobs..

## 7 ASPRIN AND BOWEL SCREENING

Dr Stephanie Smits has won a Tenovus Cancer Care iGrant on bowel cancer prevention, as a co-leader, with Dr Sunil Dolwani. The project is looking at developing information on the use of aspirin alongside bowel screening for preventing bowel cancer.

## 8 BREAST CANCER PUBLICATION

A major study was published in a leading international journal from a collaborative team of Cardiff researchers made up of clinicians and pre-clinical scientists from the Breast Multi Disciplinary Research Group, and using samples collected by the Wales Cancer Bank fresh tissue pipeline



# OUR THEMES

## Pre-Clinical research

Our pre-clinical research involves laboratory studies that define the mechanisms of cancer development and progression. We identify potential diagnostics and treatments that can then be researched and delivered as routine clinical practice to improve patient outcomes.

Work in this theme streamlines and accelerates the translation of scientific advances into more effective, safer and more personalised cancer care. The theme covers the following topics:

- ◆ Cancer genetics and genomic instability
- ◆ Cancer immunology
- ◆ Signalling and stem cells

This stage of research takes the first essential steps towards the development of any new treatment.

## Translational research

Translational research involves bringing discoveries from the lab bench to the bedside and back again.

This theme “translates” findings into therapies for patients, and enables scientists, using samples from patients, to understand cancer better.

As different people have different outcomes from cancer treatments, it is important that we identify how best to treat patients in a tailored way.

Our work ensures the benefits of research are translated into clinical trials for patient benefit. We aim to ensure that the right patients receive the right treatment at the right time and work closely with pre-clinical researchers to identify ways of treating patients with more effective and less toxic treatments.

This work is undertaken in close collaboration with the Wales Cancer Bank and the Centre for Trials Research. Its two main focuses are:

- ◆ Novel therapeutics & model systems
- ◆ Stratified medicine





## Clinical research

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Clinical research involves implementing the findings of pre-clinical and translational research. This is the first stage where new treatments are tested in patients. Our clinical theme covers two areas:

- ◆ Early phase clinical trials
- ◆ Trials through to practice

This theme advances knowledge in clinical cancer treatment while providing wider and timely access to newly emerging treatments for patients in Wales. Clinical trial-associated economic activity in Wales is on the rise, partly thanks to our work. We are increasing recruitment to clinical trials across a range of cancer types and ensure that the benefits of trials are moved through into routine practice in the NHS.

## Community research

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The Community Cancer Research Theme builds on existing strengths of methodological innovation and grant capture across all areas of cancer care.

Our Palliative and Supportive Care research differs from others as it focuses on patient and carer, rather than disease related outcomes. Our multidisciplinary team researches across all care settings (including social care), and is establishing a repository of existing research evidence. We engage with clinical teams and policy makers to speed findings straight into practice, and continue to develop high-quality public and patient engagement.

Our Integration and Informatics work provides digital information systems to underpin the activities of the centre, including data management for clinical trials research and best use of tissue samples donated by patients for research.

Our Screening, Prevention and Early Diagnosis research aims to improve understanding of the motivations and behaviours which result in inequalities in uptake of screening programmes, particularly in high-risk, harder-to-reach groups. Through this research we aim to improve screening outcomes and expedite diagnosis, as soon as symptoms occur.



# KEY ACHIEVEMENTS

## DIAGNOSTIC TOOL SAVES PATIENTS NEED FOR INVASIVE TUMOUR BIOPSIES

Our staff from the All Wales Genetics Laboratory have been involved in, and now deliver, a clinical service that uses circulating tumour DNA for the detection of biomarkers of lung and colorectal cancer. Diagnosis was once routinely performed by biopsy, but the new tool requires only a blood sample from which levels of circulating tumor DNA can be assessed. Diagnosis is given based on this assessment, avoiding an invasive procedure for some patients.

This enables the monitoring of a cancer patient in real-time to aid treatment decisions, and avoids invasive and costly surgical procedures. The impact of this research (supported by our staff) has resulted in the technology being employed in clinical practice across Wales for lung and colorectal cancer. The laboratory is also receiving requests for analysis from clinical sites across the UK. This service is

a prime example of how we work closely with the NHS to ensure our research has a positive outcome in clinical settings.

The development and validation of this technology from a research tool to a clinical diagnostic service has taken several years and research projects. These have been

supported by the Wales Cancer Research Centre, working with the Stepping Stones Charity, Velindre Charitable Funds and AstraZeneca.

*This work means some patients can avoid an invasive procedure and can be better monitored. The service also makes savings for the NHS.*



## ASTRA

### Facilitating research using tissue samples donated by patients

This year we launched our 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.

We introduced the awards to build research capacity based around biological samples, awarding funds for access to and analysis of samples from Welsh cancer biobanks. These include, but are not limited to, those sourced through the Wales Cancer Bank.

The likely value of each award will be in the region of £3,000 to £15,000 and are primarily intended to cover costs associated with various aspects of the usage of donated samples. These include: patient consent, collection and processing of samples; linkage of clinical and research data; and some support for molecular analysis.

The first three successful projects are:

A new collaboration offers the potential to test one of our discoveries directly in patients.

Another project addresses the unmet need for a suitable marker for response to chemotherapy and biological therapy in colorectal cancer.

Tumour Mutation Burden (TMB) describes the volume of mutations, or genetic changes acquired by a tumour. The third project aims to validate and evaluate a commercially available platform (Qiagen) for the analysis of TMB.

We are expecting to make a second group of awards in the autumn.



# SPINOUT COMPANY TELONOSTIX



*This research is improving testing decision making for patients and professionals*

Our Cancer Genetics and Genome Instability pre-clinical work aims to understand the causes and consequences of the genetic damage that can lead to malignant progression. In doing so we have identified new diagnostic and prognostic markers to improve patient outcomes and inform clinical decision making. One example of this has come from the Baird lab (Cardiff University) that focuses on telomeres - the structures that cap the ends of chromosomes. Telomeres are akin to the ends of shoelaces; they protect the

chromosomes and the genes that they contain from damage. This triggers the cells to enter a non-dividing state called replicative senescence, that limits the number of times cells can divide and inhibits the development of cancer.

However, some cells do not respond to short telomeres and can continue to divide. These cells suffer large-scale chromosomal damage that can drive the progression to malignancy. Telomeres therefore mediate the balance between cancer and longevity.

Professors Fegan and Pepper (Cardiff University) they showed that telomere length can be used to define both the prognosis, and the response to treatment, of patients with blood cancers, including Chronic Lymphocytic Leukaemia, which is the most common blood cancer in adults. In order to bring this new technology to patients and the pharmaceutical industry, they have created a University spin-out company called 'TeloNostiX'. The company has established a testing facility and has already obtained contracts from a large pharmaceutical company to include telomere testing in an ongoing clinical trial. They are working with the Leeds In Vitro Diagnostics Co-operative to provide initial, cross-population health economics information, that may help build the case for the adoption of their tests for patients with Chronic Lymphocytic Leukaemia in the NHS.



chromosomes and the genes that they contain from damage. However due to a quirk in the way that DNA is copied, as cells divide and as we age, telomeres become progressively shorter, ultimately obtaining a length at which they can no longer protect the chromosomes

The Baird lab has developed the highest resolution approach available to measure how long a telomere is. They have also defined the length at which telomeres become dysfunctional and chromosomes start to become damaged. In collaboration with

TeloNostiX has obtained an InnovateUK investment accelerator award that has resulted in the development of a partnership with a large UK based investment company. This together with its recent commercial research contracts has led to the creation of a new job at their Cardiff based testing facility in the last 12 months.





*We're improving treatments for better survival rates and increasing investment into Wales*

## SPOTLIGHT ON: CANCER IMMUNOLOGY

Immunotherapy is a genuine breakthrough in cancer treatment, harnessing the power of the body's immune system to target cancer cells. It is imperative therefore that Wales plays a role in this exciting area. The contributions of researchers in Wales to the understanding of cancer immunology is acknowledged internationally. This is particularly impressive considering the small number of people who work in the field here.

Several prestigious cancer immunology grants have been awarded since we launched in 2015. Overall, these grants constitute funding in excess of £6m. Over 40 research papers have been published in that time.

Links with the pharmaceutical industry have increased substantially since 2015. Whilst strong links were already in place with the highly successful UK-based companies Immunocore and Adaptimmune, these have increased in scope to include a Wellcome Trust Collaborator grant of £1.7 million and a PhD studentship programme which comprises joint funding between Immunocore and Cardiff University.

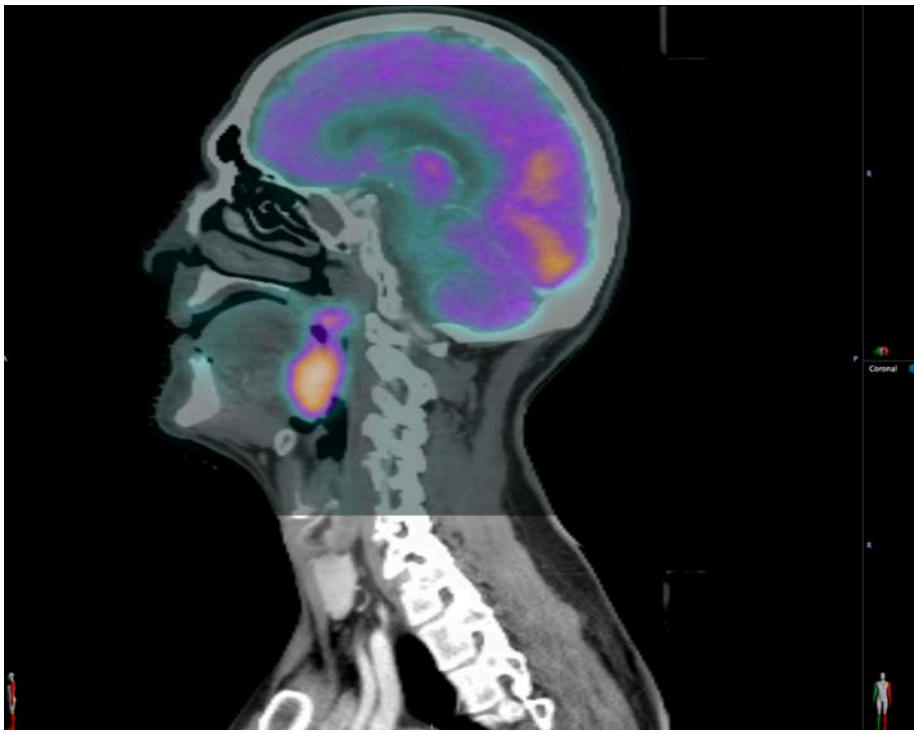
A substantial part of our cancer immunology research is done in

collaboration with oncologists and haematologists. Cardiff's Experimental Cancer Medicine Centre provided support to a clinical study called TaCTiCC (Trovax and Cyclophosphamide treatment in Colorectal Cancer). The results of this successful trial have been published in the JAMA-Oncology journal, reported at international meetings and importantly, have led to funding for a follow-on trial called BICC supported by one of our staff in the lab. BICC will test whether patients taking a drug called cyclophosphamide following surgery and chemotherapy will have improved outcomes. We anticipate that this trial will start recruiting late 2018/early 2019. Currently around 50% of patients with stage III colorectal cancer will relapse. This work may result in a lower recurrence of the disease in

patients after surgery.

Coffee shop and Women's Institute evenings have been hosted in several locations in South Wales to engage the public with the potential benefits of immunotherapies. Cancer immunology researchers have hosted charity supporter groups in their laboratories with some events designed specifically for patients and their families. Several events focused on school children have been held: these include talks at schools, a Science in Art project (including an art exhibition) and an interactive "Cancer Immunotherapy" event at Techniquet, Cardiff. Cancer immunologists have also been active participants in engagements events held at the national Eisteddfod and the Green Man festival.





## CONNECTING PATIENT INFORMATION TO INFLUENCE TREATMENT DECISIONS

The Cancer Imaging and Data Analytics research group at Cardiff University School of Engineering and School of Medicine work in collaboration with Velindre Cancer Centre and are developing ways of getting more digital information about tumours from tests such as CT, MRI and PET scans. Lots of different features that describe the tumour can be calculated from the images, and importantly, these features may give us a better idea about the behaviour of the tumour. This new field of research is called radiomics.

There is great interest in radiomics worldwide as it can help doctors decide which treatment might be best for each patient and how each patient might respond to treatment. Radiomics could also have a significant role in the development of personalised medicine which aims to give the right treatment to the right patient, at the right time.

The research group embarked on a study to try and link different types of information from the Wales

Cancer Bank with images from PET scans in patients with head & neck cancer. They successfully linked ten patients' radiology scans with their information held in the Wales Cancer Bank.

In future the group aims to develop a digital platform that can connect information stored in different databases across academic and clinical environments. They aim to extend their research to other tumour sites such as lung, prostate and colorectal cancer, and include more extensive DNA analysis in future studies with the Wales Cancer Bank.

*Linking NHS and patient information could help develop tools to help doctors decide the best treatments for individual cancer patients*



### WONDERFUL WELSH WOMAN

Dr. Kate Brain leads our Screening, Prevention and Early Diagnosis research. We were thrilled to hear that Chwarae Teg announced her as one of their Wonderful Welsh Women of the week. The charity's interview with her was used to inspire future female leaders in research. Their Wonderful Welsh Women work is aimed at a young audience and activity such as this is key to inspiring young women to take up science in further education.

Dr. Brain leads a programme of behavioural science research to help in the fight against cancer and recently received a Dean of Research Excellence award in the School of Medicine STAR awards. The charity spoke to her about her career journey, about the barriers she has faced and the women who have inspired her. To summarise Kate's advice to other women, here are her three tips for success:

- ◆ use your voice, even if sometimes it wobbles with emotion;
- ◆ don't worry about what other people think;
- ◆ be kind to yourself.

Dr Brain is a big advocate for promoting women in the workplace. Her interview will have been read by many girls making decisions about their careers and education.

Following this interview, Kate has been nominated for a Womenspire award.





# DNA REPAIR RESEARCH

The majority of cancers exhibit elevated levels of DNA damage and genomic instability - properties that enable cancer cells to become resistant to treatment. All cells possess elaborate mechanisms to repair damaged DNA. In some cancers defects in repair mechanisms can be exploited using small-molecules to induce cancer cell death and improve patient outcomes. Work in the newly-founded Staples laboratory in Bangor has focused on the molecular characterisation of a

series of previously unstudied proteins with important roles in genome maintenance.

They have identified a new protein that helps repair broken DNA, and are now focusing on understanding its functionality. Recent data suggests that it has dual genome maintenance functions. It repairs broken DNA, and also protects sections of newly-formed DNA that have been stressed to the point of collapse.

Cancer cells lacking this protein are markedly sensitive to drugs that cause DNA damage, including a number of DNA-damaging chemotherapies. Therefore, cancer cells that express low levels of the protein may be destroyed using treatments that target the DNA damage response.

We hope this research will enable more personalised (and therefore more effective) treatments for patients based on their DNA profile.



## DRUG AND RADIOTHERAPY COMBINATION TRIALS

This year has seen the first early phase drug and radiotherapy combination trials open to patients in Wales. This is a new area of work for us and will help develop a greater portfolio of trials available to patients in Wales. Studies we're

currently recruiting and setting up include:

### CHARIOT

This study aims to find the safest dose of ATR inhibitor VX-970 with chemoradiotherapy in oesophageal

cancer.

### ORCA 2

This study aims to find the best dose of olaparib and number of days to give it with chemoradiotherapy as well as investigating more about the side effects caused by this treatment.

### PARADIGM-2

This study aims to find the highest safe dose of olaparib with chemotherapy and radiotherapy, to find out if having olaparib helps chemotherapy and radiotherapy work better and to learn more about the side effects.





# WALES CANCER CONFERENCE

The Wales Cancer Conference, held in November 2017 at Cardiff's Principality Stadium, brought together experts in cancer research with NHS staff delivering the latest treatments in the first meeting of its kind for a decade. We were proud to have delivered the event (to an audience of 300), in collaboration with the Wales Cancer Network and Wales Cancer Alliance. The partnership between cancer research, the third sector and cancer multidisciplinary teams is critical to improving outcomes for patients.

The health care and research sectors came together with members of the public to discuss the changes needed to improve outcomes for patients in Wales by translating the benefits of research into improved care for cancer patients. The conference acted as a platform to showcase excellence in cancer care and research, and demonstrated the importance that the third sector plays.

The conference attracted a range of high-profile speakers, including Sir Harpal Kumar (Chief Executive

Officer, Cancer Research UK), Prof Jane Maher, (Chief Medical Officer, Macmillan Cancer Support), Prof Andrew Hughes (Professor of Experimental Cancer Medicine, The Christie) and Vaughan Gething AM (Cabinet Secretary for Health, Well-being and Sport).

We were delighted by the overwhelmingly positive feedback received from delegates and the enthusiasm for a repeat event.



## Quotes from delegates:

"An excellent, thought-provoking conference giving the wider perspective on current cancer care."

"An excellent two days very thought provoking and inspiring."

"I really enjoyed the two days and found it exciting. The bravery of the patients who spoke was outstanding and special thanks should go to them - it helped me to step back and think about how we are working now and what changes/choices need to be made available from the patient's perspective. Thank you."

"An excellent event. Great venue, good, speakers and conversations. Thank You!"



# PUBLIC AND PATIENT INVOLVEMENT IN CARDIFF UNIVERSITY'S SCHOOL OF PHARMACY

In an early scoping exercise, the need to increase the pool of Research Partners (members of the public) available to work with our pre-clinical researchers became apparent. Dr. Jim Fitzgibbon, our lay leader for public and patient involvement, met with Prof. Andrew Westwell (leader of our drug development and model systems work) and Stephen Thomas (research partner) to discuss how members of the public could get involved in the prioritisation, development, conduct and promotion of research and put forward potential ideas.

Following on from these conversations, a new initiative has

been developed to establish a lay faculty associated with the research and engagement functions of the Cardiff University School of Pharmacy and Pharmaceutical Sciences: a completely new project for the School of Pharmacy. This is a great example of how conversations can develop to encompass public involvement work beyond the centre.

The Faculty is still in its early stages but they have already reviewed grant applications and judged a student oral presentation award, following up with feedback about their involvement. They have been warmly received in the School and

look to play a valuable role in their work.

This new faculty also works alongside the pre-existing lay faculty in the Systems Immunity Research Institute: established in 2015 by Matthias Eberl with three members, it has now grown to include six members and is a core component of the Institute's public engagement and involvement work. The goal is that both groups will help to develop wide-ranging public engagement activities to the benefit of both the School of Pharmacy and the School of Medicine.

# WALES CANCER BANK

As part of our translational research, we support much of the work of the Wales Cancer Bank. The biobank collects tissue and blood samples donated by cancer patients and provides these to researchers worldwide to help with their work. This year saw a rise in the number of patient samples issued to researchers - a 6% increase on last year and a 430% increase since 2015. Samples were used by twenty three projects this year by researchers based in Wales, England, Northern Ireland and Holland.

Volunteer consenters are very active in seeking permission from patients to donate tissue and blood samples at Velindre Cancer Centre. Volunteers recruit approximately one half of all patients recruited in Velindre. This volunteer consenting initiative came second in the Health

and Care Research Wales Public Involvement Achievement Awards in September 2017.

The SAIL databank has supported the Wales Cancer Bank information system for many trials including Add Aspirin, Furva and Stampede. This year the SAIL databank also supported a number of research studies using linked socio-demographic data including the lung cancer initiative campaign.



## WHAT ARE THE MOST IMPORTANT NEXT STEPS IN SOCIAL CARE FOR PEOPLE WITH CANCER?

In June 2016 we held a Social Care and Cancer Conference which brought together academics, government, statutory and third sector professionals with patient representatives to identify key service challenges and prioritise areas where research can support future practice change in relation to social care for people with cancer. Round table discussions were held that centred on the question:

*What are the most important next steps in social care for people with cancer?*

The information generated through discussions was analysed this year and themes were identified from the content by clustering together priorities that were of the same or very similar nature. Three main themes and 12 sub-themes were identified.

*The health and social care integration* theme included priorities concerned with better communication between

health and social care services, as well as between care providers, recipients of care and their families. Suggested priorities included developing new commissioning models, integrating health and social care budgets and harmonising procurement processes. Attention was drawn to the need for better patient and public access to services and information.

*Person-centred care* was another major theme. Suggested priorities included raising awareness of the holistic needs of people with cancer and their families, better use of existing resources and providing key workers to help address individual needs.

Sharing and implementing best practice were clear themes clustered under the *knowledge transfer* heading. This centred on the need for an accessible evidence-base that is grounded in practice and showcases what works well.



**Recommendations in our report will help influence positive change in social care delivery for people with cancer**

# WALES CANCER PARTNERSHIP

We established the Wales Cancer Partnership to improve research collaboration across the nation. The Partnership is an extension of our aims. It fosters closer relationships between all cancer organisations in Wales, bringing together our voices for the benefit of current and future cancer patients, their families and communities. Partners include higher education institutions, NHS health boards, cancer charities and pharmaceutical companies.

The Partnership has contributed to a better-connected community through information sharing. It has provided a greater understanding of the scope of current research infrastructure and identified some of Wales' unique strengths and gaps to enable informed planning.

In the last year, Partnership activity has included public engagement activity such as Tackling Cancer Together which brought together 30 different organisations and research groups, offering a platform for collaboration.

If you would like to find out more or join the Partnership, please visit [walescancerpartnership.com](http://walescancerpartnership.com) or contact us on [WCP@Cardiff.ac.uk](mailto:WCP@Cardiff.ac.uk).



# CURRENT MEMBERS OF THE PARTNERSHIP



# HOSPITAL AND INDUSTRY COLLABORATION DELIVERS NEW CANCER TRIAL TO WALES

For the first time, Cardiff's Clinical Research Facility (CRF) and Velindre Cancer Centre's Clinical Research Treatments Unit (CRTU) have joined forces with TC BioPharm Ltd., to deliver a study for patients with advanced cancers, looking into a new treatment, ImmuniCell® – a type of immunotherapy.

Immunotherapies harness the human immune system to fight cancer, in much the same way as your body might fight a cold. Without this collaboration, this complex new treatment would not be available to patients in Wales.



This trial is looking into a new form of targeted cell therapy treatment for patients with solid tumours, by using the body's own lymphocytes to try and boost the immune system into destroying the cancer cells.

The study will look at how safe the treatment is, whether it has anti-cancer activity, and also how a patient immune response changes following treatment. This study is being offered to patients with melanoma, renal cell cancer or non-small cell lung cancer, in the hope that boosting the body's natural immune system can fight cancer cells.

The first patient in Wales has been successfully enrolled into this study and it's hoped many more will follow.

Dr. Steve Knapper, who is overseeing the trial at the CRF said, "This case proves that by successful working together and collaborating within healthcare we can potentially have a positive impact on the health and wellbeing of patients in Wales. Both Research & Development departments at Velindre Cancer Centre and University Hospital of Wales were instrumental in making this collaboration possible. Many teams have pulled together to offer patients a new treatment that we hope will lead to improved patient treatments and outcomes."

By working together the ambition



**Dr. Rob Jones**

***"This is a very exciting time and will hopefully open doors for future successful collaborations enabling us to offer more complex studies to patients in Wales. We are proud to have to come together to deliver this study together with TC BioPharm which we hope will improve future anti-cancer treatments."***

is to increase the number of early phase studies open in Wales to give Welsh patients more treatment options closer to home.

***This could lead to a potential new treatment for patients with melanoma, renal cell cancer or non-small cell lung cancer. Better collaboration between NHS sites should result in more studies of this kind.***





# WORKING WITH INDUSTRY

Work has continued in developing ever closer links with industry. We recognise that in order to achieve growing collaborations, we must develop a business minded approach to developing links with key commercial and industry partners.

Previous work with a commercial partner had underpinned the discovery and pre-clinical development of a potential new drug for patients with breast cancer that has spread to other parts of the body. This work is in the final stages of pre-clinical testing before moving into a clinical trial setting.

Strategic partnerships are being discussed and developed, as we recognise that individually many people have good commercial links, which are often not as strong at an organisational level. We are currently in talks with AstraZeneca to develop shared areas of strategic research interest to pursue in partnership together.

Cardiff is a preferred Centre for Novartis and Bristol Myers Squibb, meaning they will approach us first should suitable trials emerge from these companies. Commercial trial



activity for the last financial year has brought in over £168k across 11 trials.

Following a successful benchmarking visit to Manchester Experimental Cancer Medicine Centre in February 2018, we are continuing to roll out key areas of improvement, based on best practice evidenced during our visit. We are planning further visits to commercially minded centres, including those with paediatric research activity, to

learn more about successful centre management with commercial and industry partners.

Our plans going forward will include pursuing the reinvestment of commercial funds into research to increase capacity and activity. We will continue to support future research opportunities, with particular focus on the delivery of immunotherapies and artificial intelligence, in conjunction with commercial partners.



# POTENTIAL NEW TREATMENT FOR ADVANCED CANCERS

Our researchers at Cardiff University have adapted a current cancer therapy, TRAIL, to find a new treatment for advanced cancers that are resistant to existing hormone therapy.

Up to 75% of women diagnosed with breast cancer will have a cancer driven by abnormal oestrogen signalling and almost all of these women will receive anti-hormone therapy, such as tamoxifen, to treat their cancer. Unfortunately, up to 40% of patients receiving these hormone therapies will develop resistance to them, leading to relapse with aggressive cancer.

Dr. Luke Piggott, who works on our drug development and model systems research at Cardiff University, said: "Part of our research focus is to develop new therapies, with low levels of side effects, for breast cancers that are resistant to anti-hormone treatments.

"TRAIL has already been tested in multiple types of cancer, but hasn't previously been proven to be beneficial to patients. But we believe we have demonstrated that patients who develop resistance to treatment will benefit from TRAIL therapy, as we have identified specific changes in the cancer cells from these patients, which mean that their tumours become sensitive to TRAIL treatment.

"Additionally, we have shown in this patient group that TRAIL treatment targets a specific type of cell in a tumour called a cancer stem cell. Cancer stem cells differ to the other cancer cells, as they are the cells responsible for initiating tumour growth and spread, and have also been shown to be resistant to therapy."

Dr Richard Clarkson's team of researchers at the European Cancer Stem Cell Research Institute tested TRAIL on tumour samples collected from cancer patients who

had developed resistance to anti-hormone therapy. Their findings showed that TRAIL selectively killed cancer stem cells from these patients but that tumours that had not developed resistance to tamoxifen were unaffected by TRAIL. Dr. Clarkson said: "Cancer stem cells are the cells responsible for relapse and for the spread of cancer. So by targeting these cells, along with the bulk of the tumour, we could transform the way we treat cancer, especially for those that are resistant to anti-hormone treatments."

More than three quarters of the anti-hormone resistant tumour samples showed a significant response to TRAIL, whereas one in twelve tumour samples that had not previously seen anti-hormone therapy responded. The experimental models showed tumour shrinkage after being treated with TRAIL and there was also a reduction in the number and size of tumours that spread to other organs.

This sensitivity to TRAIL correlated with lower levels of a protein called c-FLIP. This protein is responsible for preventing cell death, a key

trait in cancer cells. Further experimentation has shown that the removal of c-FLIP from TRAIL-resistant breast cancer made the treatment more successful. Dr. Clarkson's group, in collaboration with Cardiff University researchers Profs Andrew Westwell and Andrea Brancale, are now actively developing a drug to inhibit c-FLIP to maximise the number of patients who may benefit from TRAIL treatment. Early data from this ongoing work has shown that combining c-FLIP inhibition with TRAIL treatment leads to cancer stem cell death in all types of breast cancer, leading to a drastic reduction in tumour spread. Further testing is ongoing in other forms of cancer as the development of this drug continues towards planned initiation of an early phase clinical trial.

**Existing drugs that are safe but previously ineffective in cancer could be used to help patients who become resistant to cancer standard treatment.**





# PUBLIC AND PATIENT INVOLVEMENT

Our public and patient involvement group is at the heart of everything we do. They get involved in all areas of our work in a multitude of ways.

The **RAMAN trial** is working to develop a single faecal sample in combination with a new blood test to improve the accuracy of bowel cancer diagnosis. Early results indicate that the blood test is very good at correctly identifying patients with bowel cancer. It is hoped that combining this with the faecal sample test, we will further improve its accuracy and hopefully avoid the need for a colonoscopy which is expensive, unpleasant and can be harmful.

The study has been designed with the help of patients and members of the public (recruited through the Involving People Network) who have joined the Study Management Group to offer guidance and to help interpret the interview findings.

The **Bereavement study** looks at supporting people bereaved through advanced or chronic illness by developing a Core Outcome Set (an agreed minimum set of outcomes or outcome measures) for bereavement research and clinical assessment in palliative care. Public contributors have been involved throughout the study including joining the Study Management Group, acting as co-

facilitators at consensus meetings and supporting networking as well as reviewing relevant documents.

The **ABACus study** is a health check which aims to promote cancer awareness and help-seeking. It is a touchscreen questionnaire that has been designed for and used in disadvantaged Welsh communities, and now needs to be evaluated. With the help of people from Welsh communities, this research will develop and evaluate the health check. Public contributors are on the Steering Group and regularly provide feedback on documentation, questionnaires, ethics and methodology to contribute to the development of the study.

There are national treatment recommendations to prevent deep vein thrombosis (DVT) in cancer patients admitted to hospital. However, it is not known whether

these should apply to patients with advanced cancer admitted to specialist palliative care units, as treatment may not alter how long patients have to live or improve symptoms and quality of life.

The aim of the **HIDDEN study** is to find out how many cancer patients admitted to hospice units have a DVT and whether these cause problems. This will result in a better understanding of how we should treat people with advanced cancer.

This study has involved the public at the earliest stage, from the study design to formulating the research question and the researchers recognise that this early involvement was essential to create an interactive process. Public contributors were also members of the project management group, creating a visible presence in the study's management structure.



# SPOTLIGHT ON: EARLY PHASE TRIALS

In the last year, there has been a big increase in early phase clinical trials activity. Early phase trials are the first step in testing new medicines that have been developed in the lab in patients.

In an effort to improve patient access to early phase trials for those living in South West Wales, clinicians in Swansea have been involved in a collaboration with the early phase trials unit at Velindre Cancer Centre to set up an early phase outreach clinic in Swansea.

Our service based in Cardiff has saved a significant amount of patient travel time. For solid tumours over the last three years this has amounted to over 2,150 visits to the phase 1 unit at Velindre Cancer Centre which has saved over 460 days of travel for patients who would otherwise have been required to participate in trials based in Oxford and London. It makes a real difference to patients with a limited lifespan to be treated locally when their time is so precious.

Within the last year, Welsh participation in 'higher risk' early phase trials has increased, involving major drug companies Bayer, AstraZeneca and Novartis. These include trials to treat blood cancers such as acute myeloid leukaemia (AML). We anticipate that immunotherapeutic trial collaborations (like the one on page 18) will increase in coming years following the successful combined Wales/Midlands Innovate UK Cellular Therapies Centre bid.

Dr. Steve Knapper and Dr. Rob Jones have taken on the role of Chief Investigator (overall responsibility for running a clinical trial) on a number of early phase trials, including MONOCLE, FAKTION and FURVA.

The vast majority of studies on the Welsh early phase trials portfolio, in both solid tumour and blood cancer types include translational research elements.

Translational research aims to "translate" findings in fundamental research into medical practice and meaningful health outcomes. A good example of this is MONOCLE, a phase 2 study for patients with chronic myelomonocytic leukaemia (CMML). This study arose following translational laboratory work at Cardiff University. MONOCLE is now open to patients at 17 centres (in all four nations of the UK) with 'bolt-on' translational laboratory work in both Cardiff and Leeds Universities which will expand upon the clinical findings of the study and help define which sub-groups of patients are most likely to benefit from the drug.

In addition FAKTION and FURVA have translational research projects being carried out by PhD Clinical Research Fellows in the All Wales Genetics Laboratory. These projects

analyse patient specimens to generate biomarker predictions for stratified treatment decision making.

Moving new drugs through phase one trials into phase two and later phase trials is a lengthy process that typically takes five to ten years. Our clinical investigators have strong representation on the National Cancer Research Institute's Clinical Studies Groups and Sub-groups, and play major roles in coordinating national phase three trial strategy. This makes them ideally placed to take more new drugs 'further down the pipeline'. For example, over the last three to five years, some leukaemia trials have included several drugs that have previously progressed through lab research and early phase study based in Cardiff.







# COLLABORATING FOR PATIENT BENEFIT

We are collaborating closely with the Wales Cancer Implementation Group (CIG) and the Wales Cancer Network (WCN) to ensure appropriate alignment of research and clinical strategies, and to support timely translation of new evidence into better patient care.

An exemplar initiative is the development of a jointly funded

research associate post between our centre and the WCN. This post will identify and support research opportunities to underpin key components of clinical strategy. It will facilitate a scoping exercise of existing clinical research involving WCN Multi Disciplinary Teams (MDTs), and link clinicians with appropriate academic partners in Wales in support of clinically

driven research priorities. This will encourage innovation, with a broader range of academic partners, using the full breadth of methodological expertise available, across areas such as business, engineering and mathematics.

An early example of collaboration is assessing the potential impact of a study undertaken by the Marie Curie Research Centre on cancer Multi-Disciplinary Team (MDT) working and cancer services provision. The PACT Study has examined decision making by MDTs - and between patients and oncologists - in relation to palliative chemotherapy for non-small cell lung cancer. We are collaborating with WCN to identify immediate opportunities for clinical impact - with earlier provision of prompts to incorporate patient priorities and preferences, and to extend the work beyond lung cancer. It will link this work with the Making Choices Together and Value Based Healthcare programmes, as the basis for further integration of research and clinical initiatives which prioritise prudent resource use and patient-focused outcomes.



# DELIVERING HIGH QUALITY END-OF-LIFE CARE

Currently 22% of deaths in England take place in a care home (including nursing homes). A Wales Cancer Research Centre survey of organisations providing specialist palliative care services to care homes highlighted the good work they do and identified the key challenges they face. The report, undertaken by our staff in the Marie Curie Research Centre at Cardiff University, with input from the National Council for Palliative Care and Hospice UK, examined the role of specialist palliative care in providing support to care homes.

Although the survey was conducted in England, the findings are relevant to Wales, and the rest of the UK. High turnover of staff was a big obstacle to improving end of life care in care homes, affecting continuity of care and uptake of training. The report also found that specialist palliative care performance measures were

more focused on processes than results and that there could be more emphasis on capturing patient and carer experiences. The report makes several recommendations, including better data collection, a focus on patient care rather than numbers, and ways to improve staff training including raising awareness and attainment of key competencies in palliative care.

Alisha Newman, a WCRC-funded researcher in the Marie Curie Research Centre in Cardiff, and author of the report, said: "The report provides a set of recommendations that can be acted on straight away. However, more needs to be done to provide consistent and sustained support

to care home staff. The views and experiences of patients and families also need to be considered if we are to develop and deliver high quality, evidence-based and person-centred palliative care services in care homes in the future."

Prof. Annmarie Nelson, Scientific Director at the Marie Curie Research Centre and our Palliative & Supportive Care lead, said: "Our work takes a look at the relationship between specialist palliative care and care homes. By analysing the responses to the survey we have been able to reflect an encouraging overall picture of patient centred services, goodwill and the delivery of needs-based support despite the challenges in this setting."

*We have made research-based recommendations available to care homes to improve services for patients at the end of life.*

# PROSTATE CANCER RADIO THERAPY-DRUG COMBINATIONS WORKSHOP

A Prostate Cancer Radiotherapy-Drug Combinations Workshop was held in Cardiff on the 29-30 Jan 2018, hosted by the Wales Cancer Research Centre, CTRad and co-supported by Prostate Clinical Studies Group.

It brought together pre-clinical and clinical researchers working in key pathways for prostate cancer to help design appropriate early phase trials, ensuring they feed into later phase trial platforms in the future.

Led by Prof. John Staffurth, the event consisted of a series of short talks and discussions at Cardiff's prestigious Life Sciences Hub. 30 guests attended, mainly oncologists, along with scientists, trial methodologists and funders.

Prof. Staffurth said, "This was a

vibrant meeting of researchers and clinicians from the leading research centres in the UK. We discussed in detail the rationale, opportunities and practical issues associated with combining novel biologically

targeted agents with radiotherapy for prostate cancer. The meeting has initiated plans for us to introduce one of the agents into an ongoing clinical trial."





## CANCER QUEST @ TECHNIQUEST GLYNDWR

As part of our Wales Cancer Partnership initiative, we brought together eight cancer organisations during October half term to present their work to the public at Techniquest Glyndwr in Wrexham. Over the two days, we engaged with over 200 visitors at the science discovery centre.

The organisations put on a series of interactive activities targeted at children, to immerse them in the world of cancer research and to help normalise conversation around the disease. Children and their parents and guardians were able to get hands on with demonstrations over the two days. Activities included an experiment extracting DNA from strawberries, children looking at their own cheek cells under a microscope and a trip through a giant inflatable model of a bowel.

Jodie Bond, our Engagement Officer said, "We were delighted to work with Techniquest Glyndwr on this special event. It was really rewarding

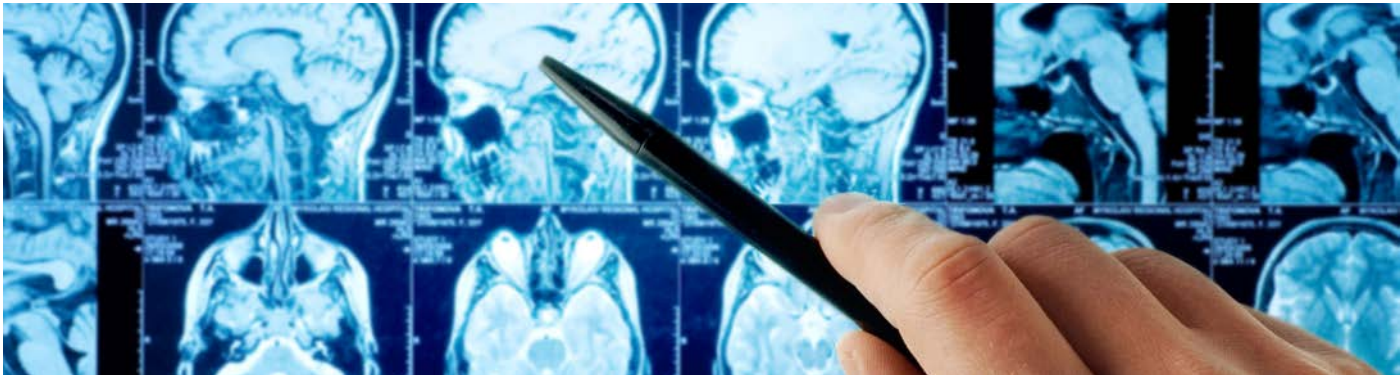
to see everyone working together to teach visitors about cancer and allow them to get hands on with the science behind cancer research.

"It was wonderful to see visitors' faces light up as they got hands on with laboratory equipment and played our interactive games. I hope that through getting children involved in our work at this event, we have gone some way to inspiring the next generation of cancer researchers. Collaborating with other organisations has allowed us to deliver more at a lower cost and help inspire more children to consider a career in STEM."

Over the course of this year we have delivered 15 engagement events to 2,700 people, instilling the importance of research and a need for continued public support. Our award-winning engagement work has inspired many young people to go on to study science, helping boost future levels of research talent in Wales.



# SPOTLIGHT ON: BRAIN CANCER RESEARCH



During the last year we have continued to foster a growing expertise in brain cancer research in Wales. There are increasing cancer imaging research opportunities and significant engagement between Dr. James Powell's (leader of our trials through to practice research) brain tumour team at Velindre Cancer Centre and Dr. Nick Morley at the Positron Emission Tomography Imaging Centre (PETIC) on a scan based trial in patients with primary brain tumours. This work has been supported by our centre.

In 2016 Dr. Powell obtained £140,000 to lead a brain imaging trial with the Cardiff University Brain Research Imaging Centre (CUBRIC) investigating the effect of radiotherapy treatment on neurocognitive function in patients with secondary brain tumours. During this project he supervised a Wales Cancer Research Centre clinical fellow who, in collaboration with CUBRIC, has developed an MRI scanning protocol which allows aspects of brain function to be measured simultaneously. In addition, the MRI protocol includes patients being scanned using the Connectom MRI scanner at CUBRIC, one of only three such scanners in the world. Patients in Wales entering this study are the first in the world to have been scanned using this technology. The project is progressing well with research findings presented at national and international neuro-oncology and radiotherapy meetings.

Dr Powell is improving access to high-quality randomised controlled trials (RCTs) for patients with brain

tumours in South Wales. He is currently Principal Investigator (PI) for several national and international RCTs in Neuro-Oncology at Velindre Cancer Centre and is PI on the first early-phase trial that combines radiotherapy with drugs to open in Wales (PARADIGM 2). He recruited the first patient in the UK to this trial - another first for Wales.

We are further developing this work by establishing a new study in patients with primary gliomas (a type of brain tumour) to better characterise these. This will also provide a new approach to targeting radiotherapy and treatment planning, assessing treatment response and guiding adaptive radiotherapy treatments in glioma.

Glioblastoma is an aggressive brain tumour and a cancer of unmet need. It is the most common primary brain tumour, carrying a poor prognosis. Despite being relatively rare, it causes a disproportionate impact, with more 'years of life lost' per patient than any other tumour. There is a developing interest in establishing a PET tracer for glioblastoma to aid assessment for prognosis, radiotherapy targeting and to provide an imaging marker for response assessment.

Dr Nick Morley is working on an observational study of patients receiving current standard care for glioblastoma. It will collect data from two additional PET-CT scans and will collect clinical samples. The study aims to improve our understanding of this disease and how to image it. This will benefit future patients with glioblastoma

and facilitate further clinical trials which make better use of current treatments, and help in the development of new treatment strategies.

Given the very guarded prognosis of patients with high grade glioma, we are also developing our research focus on their supportive and palliative care needs. The Marie Curie Research Centre has particular expertise in exploring patient and carer perspectives of illness and is working with the Supportive and Palliative Care subgroup of the NCRI Brain CSG to develop studies addressing the palliative needs of these patients. It has also developed a PhD studentship to examine screening tools for brain radiotherapy side effects and a work stream on innovative trial designs and the concept of an 'umbrella protocol' for supportive care studies in brain cancer.

We also led a highly-successful Brain Tumour Workshop in March 2018. It highlighted the range of brain tumour research being undertaken in Cardiff from discovery, through translational to clinical oncology and palliative care. The meeting brought our researchers together with several groups from Cardiff University, the Marie Curie Palliative Care Research Centre, The Brain Tumour Charity and Velindre Cancer Centre. Further seminars and a multidisciplinary research group are planned to promote collaborative working and research proposal development.



# RADIOTHERAPY RESEARCH BARRIERS

Our radiotherapy research barriers survey is a good example of clinicians collaborating to identify challenges across Wales in conducting radiotherapy research.

The survey was the first of its kind and went out to clinicians across Wales in December 2017 to radiotherapy recruitment and research staff. 46% of respondents

stated that they are able to dedicate less than one session (four hours) a week to radiotherapy research. 45% of respondents stated that they would like one additional session a week and 55% would like an additional two sessions a week.

Key themes that came from the respondents for changes required to enable more time were

additional support and a reduction in clinical workload. The main barriers identified were again high workload and the length of time it takes to open trials. A number of solutions were identified and will be raised within the Clinical Oncology Subcommittee at the Welsh Scientific Advisory Committee.



# INVESTING IN THE FUTURE

Aligning with the Welsh Government's ambition to invest in the future, we have seen a great deal of success in developing our researchers.

Dr. Hannah West (below) works on a stream of research focusing



on cancer genetics and genomic instability. We are delighted to report that she has recently been awarded a Sêr Cymru II Precision Medicine fellowship, which will allow her to continue her important research in colorectal cancer.

Dr West was also accepted onto the Future Leaders in Cancer Research programme at Cardiff University. She was joined by two members of our Screening, Prevention and Early Diagnosis team, Dr. Stephanie Smits and Dr. Grace McCutchan. This involves being put on the aspiring fellowship fast-track initiative,

which provides funds for training and development in addition to a bespoke training programme to support early career researchers to apply for Fellowships.

We are also delighted to say that two of our esteemed research colleagues with whom we work very closely have been recognised for their inspirational and outstanding work in the recent Queen's Birthday Honours List. Prof. Malcolm Mason has been awarded an OBE for services to the NHS and cancer research and Dr. Rachel Butler has been awarded an MBE for development of Genomics Services in Wales and across the UK.



# LOOKING FORWARD

Our initial three-year, £4.5m programme of research has recently been extended by two years, and a further £3m awarded to take the centre to 2020.

This new funding period brings with it an exciting time of change, and we are thrilled to be introducing new posts to improve our work in order to deliver more effective cancer care to patients.

We will continue leading practice-changing research by investing in researchers themselves to develop new clinical trials. These researchers include Dr. Nick Morley, Consultant Radiologist at Llandough Hospital, Dr. Dean Harris, Consultant Colorectal Surgeon at Singleton Hospital, and Dr. James Powell, Consultant Clinical Oncologist at Velindre Cancer Centre.

Another important role we are funding is a consultant to act as the Health and Cancer Research Wales Cancer Specialty Lead. Dr. Rob Jones, Consultant and Senior Lecturer in Medical Oncology at Velindre Cancer Centre and Cardiff University has been appointed this role to promote, champion and encourage involvement in cancer trials within NHS Wales, and have an overview of all trials across Health Boards.

Linked with this role, we have appointed a part time Project Support Officer, jointly funded by the Wales Cancer Network. The Network is responsible for NHS delivery of cancer services, and

through close working with them we hope to deliver research that is clinically relevant and more accessible to patients. The post-holder will provide support to increase awareness of cancer trials across Wales, contributing to recruiting more patients, and thereby rapidly translating trial results into future treatments. Our ambition is to expand the geographical range of patients who can take advantage of our services. To help move this ambition forwards, we are employing a consultant and a research nurse on a part-time basis to deliver a clinical session in Swansea to improve links between Wales' two main cities.

We are also investing more posts in our community research. The first of these is a research associate who will work directly with the NHS to identify research priorities. This post will also focus on development of brain tumour supportive care, coordinating UK collaborations to progress new trial designs, early palliative care and structured physical activity.

Dr. Grace McCutchan will fill the second post focusing on community research. In this role she will develop and test interventions in lung cancer. The post will progress screening and prevention, particularly in the areas of earlier diagnosis in colorectal cancer.

In addition, we have secured funding from Marie Curie for a PhD studentship which will examine the impact of radiotherapy on

cognitive functioning in high grade glioma (brain tumour) patients. The PhD studentship aims to identify a simple screening tool, which would trigger referral for specialist assessment. This could significantly improve patient quality of life and resource use.

We will employ an additional research associate post working with Steve Conlan (Professor of Molecular and Cell Biology at Swansea University) and researchers in Cardiff University to advance the development of biological therapies. These include harnessing the power of viruses and the body's own immune system to target cancer, with the hope that we can advance these therapies to clinical trials.

We will also be leading, with the Wales Cancer Network and third sector, the development of a Cancer Research Strategy for Wales (as identified in the Cancer Delivery Plan refresh). We will utilise skills, expertise and best practice held by all our stakeholders and communities to develop the strategy. Our aim is to ensure that research activity in Wales makes a tangible, measureable difference to the health, lives and outcomes of people in Wales.

We anticipate that these additional posts will bring more research funding into Wales, improve research collaboration and increase the availability of clinical trials to patients in Wales.







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