

# ANNUAL REPORT 2020-2021





# INTRODUCTION

CHAIR'S REPORT	04
CEO'S REPORT	06
RESEARCH REPORT	10
RESEARCH CASE STUDY	15
WHAT WE CURRENTLY FUND	16
RESEARCH CASE STUDY	24
FINANCIAL SUMMARY	26
STATEMENT OF FINANCIAL ACTIVITIES	28
BALANCE SHEET	29
TRUSTEES, ADVISORS AND PATRONS	30



# CHAIR'S REPORT

**I am delighted to be writing my first report as the Chair of North West Cancer Research. I would like to begin by thanking Nigel Lanceley, my predecessor, for all his endeavours over the last six years. My fellow Trustees and I have appreciated his calm and thoughtful approach, as the Charity has moved through some difficult waters and, in particular, the pandemic.**



There is no doubt that, working alongside the Board and the staff team, Nigel has overseen some significant change in the Charity and I am delighted that he will continue to serve as Honorary President after he steps down as a Trustee.

The last two years have been a time of immense challenge and change and the impacts of the pandemic will continue to be felt for many years to come. It has had an enormous effect on the delivery of cancer services by the NHS and there was a long period of time in which many people did not attend screening services or visit their GP. This will undoubtedly create a backlog of cancer cases – many of which will have had a delayed diagnosis, making treatment more difficult and potentially affecting the outcome for the patient.

As a positive, the pandemic has meant that the efforts of researchers, scientists, clinicians and health

workers have been appreciated in a new way and it has been great to see the rapid progress which research scientists have been able to make. We hope that the advances made in creating rapid tests and vaccines for Covid will also be applicable in cancer in order to advance the fight against the more than 220 forms of this disease.

However, cancer remains a complex problem.

Here in our region, we experience some of the highest levels of cancer in the UK and sadly, we also have high levels of mortality as a result of the disease. Some cancer types are far more common in our region than we would expect to see when looking at the national picture. The causes of this pattern we believe to be local environmental, social and lifestyle factors as well as underlying genetic traits.

As a regional cancer charity, therefore, we need to play our part in ensuring that people in our area have access to relevant and effective information in a way that helps their awareness of the early symptoms of cancer and encourages them to seek help when needed. Over the coming year, we will be expanding our education work, whilst continuing to fund life-saving research which seeks to drive innovation and improvement for the people of our region and beyond.

I would like to take this opportunity to thank my Board of Trustees, who continue to work hard on behalf of North West Cancer Research, supporting and guiding the Charity in taking forward its work and providing excellent advice to me and to the Charity's management team. I would also like to express my sincere gratitude to the CEO, Alastair Richards, to the whole staff team and to all those who have been involved with North West Cancer Research during 2020/21.

My final thanks must go to our valued supporters, without whose hard work, dedication and generosity we would not be able to carry out our life-saving work.

Excellent progress has been made in addressing the region's cancer needs but there is still more to do. We will be tireless in our pursuit of new knowledge and techniques which seek to understand the cause of, improve the care of and, ultimately, find cures for cancer.

A handwritten signature in white ink that reads "C Jones".

**Miss C M Jones BA, ACG**  
Chairman

# CEO'S REPORT

**For North West Cancer Research, the pandemic has been both a journey of discovery and a rollercoaster ride of uncertainty. We've learnt many new ways of working and had to discover new technologies in order to continue with our work. Working with communities and through our committees and groups has been all but impossible and so we have had to innovate to raise funds and awareness in other ways.**



Throughout the pandemic, it has been good to see our research continue, and other than a break of around 3 months in 2020, our dedicated researchers have been in their labs working tirelessly to complete their projects.

We are delighted that during 2020/21 we have been able to fund some great new work aimed at tackling cancer in our region. Amongst the newly funded projects are those aimed at prostate cancer, lung cancer, immunotherapy, palliative care and the links between the environment and cancer, amongst many others.

We are also excited to be working in partnership with a number of other local and regional charities in order to fund cancer research work which is relevant to our region.

During the year we have commissioned three projects which are jointly funded with other charities on such diverse areas as children's kidney cancer, lymphoma and understanding how cancer patients access remote appointments with their GP. This is a new way of working but one which we envisage seeing more of in the future. It makes sense to work together with others for the good of our region.

Financially, there have been many positives for us during the year. Our income from fundraising and donations recovered well from the first months of the pandemic and rose above the level we saw in 2019/20. In particular, we were delighted to see growth in our income from grant making trusts and from other charities. It was also a year in which legacy income grew – perhaps reflecting the sad times in which we are living. We are so grateful for those who leave us gifts in their wills and who help to provide for our research beyond their own lives.

So, what does the future look like for North West Cancer Research? We remain certain that there is a clear role for us in helping to tackle the high level of cancers in our region. Cancer rates are growing nationally, and in the North West and North Wales, we have some of the very highest rates. In 2022 we will publish our next Regional Report focused on the cancer types which are more common in our area and we will

accompany this with a new Impact Report, looking at the great work the Charity is funding to tackle cancer in our region.



We will continue to focus on understanding the cause, improving the care and finding the cure for cancer, but we will add to this in two areas. The first is in understanding our region and what makes us different. So often we talk about the higher cancer rates in our area and are asked why this is the case.

This is something which we need to really understand and improving our knowledge on this will help us to know how to fight cancer more effectively. We will also seek to grow our education, information and outreach to tackle the almost 40% of cancers which are linked to lifestyle factors and are therefore preventable.

In order to do all of this, we are reliant on our kind supporters and donors. We are indebted to them for their support and the way in which they continue to give. We thank each one of them individually for their commitment to the battle against cancer in our area. In 2022 we're looking forward to coming out to see you again and working alongside our volunteers and supporters to raise essential funds to advance cancer research work. I know that with your help and support North West Cancer Research will continue to grow and fund more ground-breaking work which will create a better future for people in our region and beyond.

*Alastair*





# RESEARCH REPORT

## Governance

North West Cancer Research is a member of the Association of Medical Research Charities (AMRC) and this means that we follow externally laid down principles when deciding which research applications to fund. All projects are subject to external review by experts from the UK and beyond, as we seek to ensure that we only fund the best work and that projects break new ground in research.

Projects go before a research funding panel in order to rank them against other applications for funding, so that only the very best work is funded. These research panels are made up of experts from the academic and clinical communities across the UK. Potential conflicts of interest are carefully managed.

We seek to ensure each advisory group is closely aligned with the work funded to make sure that their expertise is focused on relevant research applications.

Following some recent changes in the criteria for our calls, we have specific advisory groups as follows:



### Cancer Discovery Advisory Group



### Translational Research Advisory Group



### Applied Research (inc. health inequalities) Advisory Group

Each group oversees a funding round and then, based on the merits of the applications received, the advisory group makes recommendations to the Board. The final decision on how many projects to fund lies with the Board of Trustees.

The Charity would like to thank all of the researchers, scientists, academics and others who have given their time this year in order to review and report on the project applications received. This process for gaining funding is highly competitive and therefore the task of reviewing applications is one of growing complexity.

## Public and Patient Representation in Advisory Groups

We strive to fund research that is relevant and important to our local population.

The patient voice is vital to influence our decisions on the importance of the funding applications we receive, as well as contributing to our future objectives.

We have engaged with public and patient representatives and are moving towards fully embedding them in our activities in order to bring the patient voice and perspective into our decision-making more fully. We are grateful for the time and effort these 'experts by experience' give and for their valuable contributions in our decision-making.

## Investing in the cause, care and cure of cancer for our region

In this financial year, we awarded around £1.4 million to new cancer research projects – a figure which was up slightly on the previous year. The pandemic has meant that we have taken a cautious approach to new funding but remain focused on funding important, high impact research which will make a difference for people in our area.

The year saw North West Cancer Research prioritise improvements in the experiences and outcomes of people with cancer in our region, as well as funding work seeking to identify the causes of cancer in the body. An exciting development during the year was the awarding of funding to a study which will map cancers within a Clinical Commissioning Group in our region in order to understand the environmental and social factors which have influenced these. This knowledge will then be provided to decision-makers in the region to help them to better target services, information and advice.

## Our research objectives continue to be:



### Improving the prevention, diagnosis and treatment of cancer in the region



### Understanding and addressing the inequalities in cancer across the region



### Encouraging collaboration between researchers in the region



### Improving dissemination of the results and impact of our research to the public

We support a wide range of ‘bench to bedside’ cancer research through our funding streams and continue to focus donations on research that seeks a cure for cancer, whilst also improving the lives of people living with cancer now.

Alongside this, we continue to invest in the researchers and scientists of tomorrow, and during the year, invested in new PhD funding programmes, along with summer studentships.

## Defining priorities

Ensuring the region’s cancer needs are represented in these research streams has been achieved by encouraging researchers to develop proposals that directly benefit people living in the North West and North Wales. This ensures our funding is aimed at tackling the differences in cancer levels or outcomes, as well as the differences or challenges to cancer treatments or services in the region. We are therefore not only driving impact for local people but also contributing to the wider understanding of cancer and clinical or supportive care. In addition, North West Cancer Research has responded to the high-level priority in the UK to improve cancer outcomes through early diagnosis initiatives.

Across all research programmes, we encourage researchers to develop proposals which aim to promote the earlier diagnosis of cancer and improve outcomes through initiatives that tackle this. Looking forwards to

2021/22, the Charity will review and reconsider our strategy and how we prioritise our funding in what will undoubtedly be a difficult economic environment.

However, it is certain that funding world-class research, focused on the needs of our region, will remain at the heart of what we do. We will add to this our growing range of information, advice and education services to take a joined up approach to cancer in our area.

## Working in partnership

North West Cancer Research has always worked in partnership with universities and NHS Trusts across our region, but in 2020/21 we have developed a new range of partnerships with other charities in order to fund research which advances our mission of reducing cancer in our region. During the year we have run three partnerships in association with other charities as follows:

### NWCR & Tenovus Cancer Care

Working with Tenovus we have jointly funded a study examining how the remote consulting tools used by GPs during the pandemic help and possibly hinder patients who have cancer symptoms.

### NWCR & The Bloom Appeal

The Bloom Appeal focuses on blood cancers such as leukaemia which are common in our region and so we are delighted to have funded a study with

them to advance our understanding of aggressive cases of lymphoma and chronic lymphocytic leukaemia.

### NWCR & Kidney Research Northwest

Kidney cancer is relatively rare but because of this it is hard to diagnose. With KRNW, we have jointly funded a pioneering study of Wilm’s tumour, a type of childhood cancer, in order to improve the treatment of this.

Our approach of working in partnership also means that we have joined and benefitted from the expertise of two alliances. These are:

### Cancer52

This charity brings together organisations which focus on less common cancers but which count for a disproportionate number of cancer deaths.

### NHS North West Coast Applied Research Collaboration

This grouping brings together NHS Trusts and universities in our region to drive forward pioneering research and to ensure that our efforts are not in isolation but are coordinated with others.

## Developing the cancer scientists of tomorrow

We continue to invest funds to help build and sustain research capacity in our region. This funding ensures the highest quality research occurs locally and develops the next generation of cancer researchers. Funding in this area is through a number of different streams:

### Research development grants

These are generally smaller grants which enable researchers to develop initial data which can then support applications for funding to the Charity and elsewhere.

### Summer studentships

An opportunity for promising undergraduate students to experience hands-on research and laboratory work alongside one of our researchers.

### Masters in Research

Often funded in partnership with the KESS2 programme at Bangor University we fund Masters in Research programmes at three different locations with a particular focus on supporting clinicians to gain research insight and experience.

### PhD funding

This year we were delighted to have funded the PhDs of five new students in a wide variety of cancer related research fields.

## Encouraging collaboration and knowledge sharing

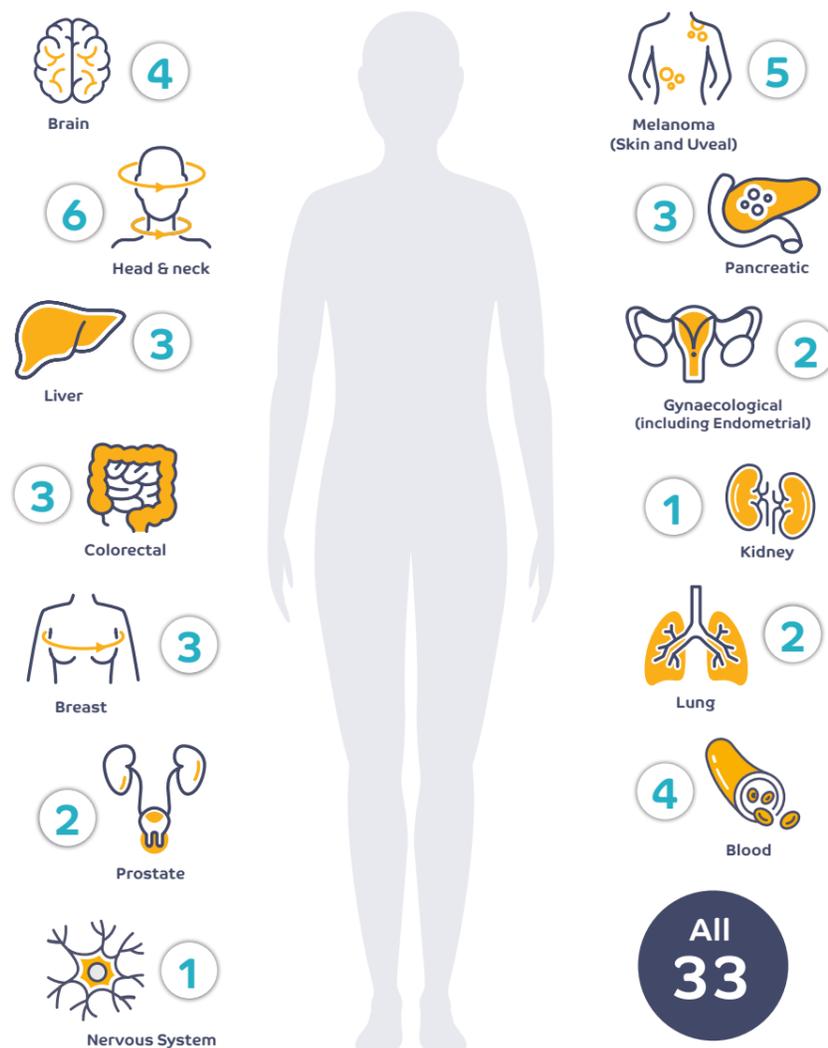
North West Cancer Research encourages knowledge sharing to ensure local researchers stay up to date with findings and can share their own research outcomes from papers published in a supportive peer-to-peer environment.



# RESEARCH PROJECTS BY CANCER TYPE

Our research projects are focused on multiple cancer types, ensuring we maximise the impact of our work across our community.

**67** active research projects



Total cancer types = 72 due to overlap in research areas covered by 67 individual projects including studentships and research development grants.

# CASE STUDY

Partnership working has become increasingly important to North West Cancer Research as we look to increase our resources for the benefit of the region.



Through a partnership with Kidney Research Northwest we have funded an innovative research project into kidney related childhood cancers at Alder Hey Children's Hospital.

Dr Bettina Wilm and her team are investigating whether chemotherapy-induced senescence (the process of deterioration) affects the behaviour of stem cells in Wilms' Tumour, the most common kidney cancer in childhood. The current treatment of chemotherapy, surgery and sometimes radiotherapy, means that most patients do well, but unfortunately 10-15% patients relapse and have poor outcomes.

The biological mechanisms that allow cancer to recur are still poorly understood but it can sometimes be explained by the persistence of dormant residual cancer cells. As relapse is the main cause of cancer-related death, understanding these dormant cells on a molecular level is essential for their eradication. While most cells within a tumour are not capable of forming new tumours, rare cancer stem cells are able to generate

tumours and become responsible for relapse and metastasis (when cancer spreads to a different body part). These cancer stem cells can be resistant to chemotherapy.

Chemotherapy and radiotherapy are known to induce cell senescence (ageing) in some tumour cells. When these cells stop dividing, it had been thought that they became permanently inactive. However, it has recently been discovered that senescent tumour cells can in fact become metabolically active again and produce chemical signals which may promote tumour growth and increase stem cell numbers nearby, leading to relapse and metastasis.

Finding ways to eradicate the senescent cells with specific drugs may improve the treatment prospects for Wilms' tumour patients. This is the first study to investigate therapy-induced senescence in pre treated Wilms' tumour and its relation to cancer stem cells and could provide a significant improvement in outcomes for patients.





# CURRENT FUNDING

## LANCASHIRE AND CUMBRIA

### Summer Studentships at the Division of Biomedical and Life Sciences

Dr. Allinson  
£15,600 /2 years covering 2020 & 2021

### Development of mouse tail skin as a translational preclinical model for UV exposure and early melanomagenesis

Dr Mort, Dr Allinson  
£251,263 /3 years

### How does p53 link DNA damage signalling to innate immunity?

Dr Unterholzner £203,400 /3 years

### The role of NSMCE2-dependent SUMO modification in the replication stress response

Dr Elaine Taylor, Dr Mick Urbaniak  
£199,908 /3 years

### Living Well During and Beyond Treatment for Gynaecological Cancer: Exploring the Lived Experiences of Patients Undergoing Treatment for Gynaecological Cancer

Dr Lisa Anne Ashmore, Daniel Hutton, Dr Lynda Appleton, Dr Vicky Singleton, Dr Karen Whitmarsh, Janet Johnson £118,787 /2 years

### Funding for a Lecturer and Fellow in cancer research with x 2 PhD students

The funding provides support for the appointment of a Lecturer in Cancer research, along with a Fellow, two PhD students and lab-costs for 5-years. It has been match-funded by Lancaster University.  
£441,296 /5 years

### Small molecule induced degradation of centrosome clustering proteins: development of a novel, cancer-specific therapeutic approach

Dr Morgan Gadd, Dr Andrew Fielding  
£232,696 /3 years

### Analysis of an RNA export factor required for cell division and maintenance of genome stability

Dr Elaine Taylor & Howard Lindsay  
£231,271 /3 years

### Analysis of the role of CIZ1 in maintenance of genome stability and recovery from DNA replication stress

Dr Nikki Copeland, Dr Chris Staples, Dr Jason Parsons  
£257,081 /3 years

### Early predictive detection method for lung cancer via vibrational spectroscopy of liquid biopsy

Dr Danielle Bury, Francis Martin, Tarek Saba, Thomas Bongers, Camilo de Lelis Medeiros de Morais  
£129,054 /2 years

### PhD studentship: Understanding how cells regulate DNA replication to maintain genome stability

Dr N Copeland, Freya Ferguson  
£105,500 /2 years

### PhD studentship: How is the immune system alerted to replication stress and DNA damage in keratinocytes during immunosurveillance against cutaneous squamous cell carcinoma?

Dr Leonie Unterholzner, Jemma Creamer  
£105,500 /3 years

### Mapping geographically co-occurrent cancers in the Morecambe Bay area for designing targeted community-based interventions

Dr Luigi Sedda, Professor Alison Birtle, Dr Andy Knox, Ms Lisa Jones, Dr Hannah Timpson, Professor Peter Atkinson  
£170,543 /2 years

### Exploring the potential of CDK5 type-II inhibition: towards new glioblastoma treatments

Dr Joseph Hayes  
£4,000 /12 months

### Developing Raman spectroscopy as a diagnostic tool for prostate cancer – A potential non-invasive alternative to serum PSA (Prostate Specific Antigen) testing and prostate biopsies

Professor Ihtesham ur Rehman, Professor Alison Birtle, Ms Sarah Hart, Mr Colin Cutting, Dr Brendan Tinwell  
£249,990 /3 years

### Immunotherapy and Palliative Care Trajectories (IMPACT): a mixed-methods study mapping illness trajectories for people with advanced cancer receiving immunotherapy treatment to identify palliative care need

Dr Sarah Brearley, Professor Catherine Walshe, Dr Amy Gadoud, Dr Anastasia Ushakova, Dr Manon Pillai, Dr. Fiona Kiely,  
£239,536 /2 years



# CURRENT FUNDING

## NORTH WALES & CHESHIRE

**Involvement of Mec1ATM/ATR in mitochondrial DNA replication and its implications in cancer cell metabolism**

Dr Rita Cha  
£199,794.00 /3 years

**Autophagy dependent survival following Mec1ATM/ATR inactivation**

Dr Cha  
£196,116 /3 years

**KESS2 Studentship Funding**

Funding for four MRes students for 2018/19 along with two PhD students.  
£97,500 /3 years

**Patient centred benefit-risk assessment of treatment for colorectal liver metastases in North West England and North Wales.**

Dr Emily Holmes, Professor Simon Gollins, Mr Stephen Fenwick, Mrs Louise Jones, Professor Dyfrig Hughes  
£67,301 /1 year

**Understanding the role of primary cilia and its role in hub signalling: PhD studentship**

Dr Chris Staples (Supervisor), Angharad Wilkie (Student)  
£138,089 /4 years

**Understanding barriers and enablers to use of primary care remote consulting for suspected cancer symptoms among vulnerable populations**

Dr Julia Hiscock (Supervisor)  
– joint with Tenovus  
£75,000 /3 years

**KESS2 NWCR Institute Bangor University MRes student program 2021/2022**

Dr Edgar Hartsuiker  
£27,000.00 /2 years

**Finding My Way UK: Adaptation and replication testing of the benefits of online psychological support for cancer survivors**

Prof Nicholas Hulbert-Williams, Dr Lee Hulbert-Williams, Dr Lisa Beatty, Prof Bogda Koczwara, Dr Laura Ashley, Prof Neil Coulson, Dr Peter Hall, Prof Eila Watson, Mrs Sue Millington, Mr Richard Jackson  
£249,646 /3 years

**PhD studentship: ‘Caring, it’s just what you do isn’t it?’: The psychosocial impact of a cancer diagnosis on informal caregivers**

Dr Brooke Swash, Professor Nicholas Hulbert-Williams, Professor Valerie Morrison  
£93,064 /3 years

## MANCHESTER

**“Deciphering evolution of Small Cell Lung Cancer from diagnosis to post chemotherapy disease progression: a search for new drug targets”**

Professor Caroline Dive, Professor Fiona Blackhall, Dr Kristopher Frese, Dr Alastair Kerr  
£105,000.00 /3 years





## MERSEYSIDE

### **Determining ibrutinib's potential to treat human leukaemia's – novel uses for an exciting new Bruton's tyrosine kinase (BTK) inhibitor**

Prof D MacEwan, Prof A Pettitt,  
Dr J Slupsky, Dr A O'Donnell  
£162,443 /3 years

### **Gene edited reversal of FLT3-ITD mutations in acute myeloid leukaemia and its effect on chemotherapy resistance**

Prof D J MacEwan, Prof R E Clarke  
£181,676 /3 years

### **Evaluation of novel combination drug protocols for neuroblastoma using advanced imaging in a chick embryo model**

Dr Violaine See, Professor Paul Losty  
£117,382 /2 years

### **Forcing angiogenesis: Transcriptional control by integrin-dependent mechanotransduction during angiogenesis**

Dr Mark Morgan, Dr Katarzyna Wolanska  
£224,182 /3 years

### **Towards the clinical positioning of a first selective DUB inhibitor**

Dr Sylvie Urbe, Prof Michael Clague,  
Dr Barry L Pizer, Dr Claire Heride  
£141,569 /2 years

### **Non-canonical protein phosphorylation in human cancer cells**

Prof Claire Eyers, Prof Pat Eyers,  
Dr Andrew Jones  
£229,675 /3years

### **Absolute quantitation of endogenous Ras isoform protein abundance: Does codon bias explain the predominance of KRAS mutations in cancer**

Prof Ian Prior  
£127,257 /2 years

### **Kinome profiling and mass cytometry as tools to detect rewiring of B cell receptor signalling in the malignant cells of chronic lymphocytic leukaemia patients taking ibrutinib**

Dr J Slupsky, Prof. I Prior  
£217,307 /3 years

### **Integrating biomarkers to stratify adjuvant chemotherapy in pancreatic cancer patients**

Dr William Greenhalf, Dr Dan Palmer,  
Dr Eithne Costello  
£193,220 /3 years

### **Characterisation of the tumour-immune microenvironment in metastatic uveal melanoma**

Prof Sarah Coupland, Dr Carlos Rogerio de Figueiredo  
£132,434 /2 years

### **Function of stroma-derived gas6 in pancreatic cancer progression and metastasis**

Dr Ainhoa Mielgo, Mr Robert Jones  
£114,450 /3 years

### **Improving the biological response of proton beam therapy in head and neck cancer**

Dr Jason Parsons  
£202,129 /3 years

### **Tribbles pseudokinases: Analysis of cancer-associated signalling mechanischristianms**

Prof Patrick Eyers, Dr Dominic Byrne,  
Prof Claire Eyers  
£221,262 /3 years

### **The role of the ERK5 signalling axis in BRAF inhibitor-resistant melanoma progression**

Dr Mike Cross, Dr Rowan Pritchard-Jones, Dr Cathy Tournier,  
Dr Emanuele Giurisato,  
Dr Harish Poptani, Prof Clare Eyers  
£229,883 /3 years

### **A prospective study of genomic landscape of brain metastasis secondary to breast cancer utilising cell free DNA derived from cerebral spinal fluid Investigators**

Prof Carlo Palmieri, Prof Janet Brown,  
Dr Vinton Wai Tung Cheng, Dr Ellen Copson, Dr Athina Giannoudis,  
Mr Michael Jenkinson, Mr Richard Jackson, Dr Iain MacPherson, Prof Jacqui Shaw, Mrs Lesley Stephen  
£254,387 /3 years

### **Sensing tension: Bidirectional feedback mechanisms controlling breast cancer invasion.**

Dr Mark Morgan, Dt Tobias Zech,  
Dr Dean Hammond, Asst. Professor Pere Roca-Cusachs, Louise Jones,  
Prof John Marshall.  
£233,087 /3 years

### **DUB on the Tracks: USP31, a new regulator of microtubule dynamics in cancer cells**

Professor Michael Clague,  
Professor Sylvia Urbe  
£128,850 /3 years

### **“Imaging in the Window of Opportunity” Evaluating the role of advanced MRI techniques in detecting early response to immune checkpoint inhibition in a Head and Neck Cancer window of opportunity trial**

Mr Andrew Schache, Prof Harish Poptani, Dr Joe Sacco, Dr Rahcel Brooker, Ms Eftychia-Eirini Psarelli,  
Dr Kumar Das, Dr Maneesh Bhojak,  
Dr Rebecca Hanlon, Dr Gaurav Sundar  
£98,041 /18 months

### **Intron retention and alternative polyadenylation control of LAMA3 in head and neck squamous cell carcinoma; mechanistic insight and potential drug target**

Dr K Hamil, DR J Risk, Dr S Tew  
£188,511 /3 years



**Pharmacological stimulation of NRF2 to enhance liver regeneration following tumour resection**

Dr I Copple, Professor C Goldring, Mr M Elmasry, Mr S Fenwick, Professor D Palmer, Professor K Park  
£199,417 /2.5 years

**Validating candidate biomarkers for future use in pancreatic cancer detection amongst individuals with new-onset diabetes**

Professor E Costello-Goldring  
£171,343 /2 years

**Exploiting the soluble isoform of immune checkpoint receptor CTLA-4 to improve the treatment of cancer**

Dr Lekh N Dahal, Professor Mark Cragg, Dr Joseph Slupsky, Professor Sir Munir Pirmohamed, Dr Frank Ward  
£248,333 /3 years

**Investigation of volatile organic compounds to diagnose and stratify men with prostate cancer**

Professor Chris Probert, Professor Philip Cornford, Mr Henry Lazarowicz, Marta Garcia-Finana  
£299,991.92 /3 years

**PhD studentship: Understanding the relative biological effect of Proton Beam Therapy and determining differences in response of head and neck squamous cell carcinoma and uveal melanoma to x-ray and proton beam irradiation**

Dr Jason Parsons, Terpsi Vitti  
£105,500.00 /3 years

**Head and neck cancer/radiobiology/ DNA damage and repair**

Gabrielle Grundy, Dr Jason Parsons  
£448,683 /5 years

**PhD studentship: Investigation the role of hypoxia on brain tumour cell division utilising in vivo Glioblastoma models**

Professor Harish Poptani, Claire Kelly  
£105,500 /3 years

**PhD studentship: Characterising the temporal host and tumour response to neoadjuvant therapy in metastatic rectal cancer**

Dr Ainhoa Mielgo, Dr Jason Parsons, Mr Dale Vimalachandran, Mr Robert Jones, Professor Michael Schmid  
£104,961 /3 years

**PhD studentship: Insights into liver regeneration and novel strategies aimed at enhancing crucial hepatic repair**

Dr Ian Copple, Tobias Bunday  
£105,500.00 /3 years

**PhD studentship: Investigating the use of short activating RNAs (saRNAs) to upregulate tumour suppressor genes as a novel therapeutic approach in hepatocellular carcinoma (HCC)**

Dr Ian Copple, Georgina Gregory  
£105,500 /3 years

**PhD studentship: Defining and drugging the role of BAP1-mutation in the invasive behaviour of mesothelioma and uveal melanoma**

Professor Judy Coulson, Martina Tripari  
£105,500.00 /3 years

**PhD studentship: Cancer Proteomics: Deciphering the cellular targets of clinical protein kinase inhibitors**

Professor Patrick Eyers, Nefeli Boni-Kazantzidou  
£138,089 /4 years

**PhD studentship: Augmenting the tumour cell immune response through destabilisation of PD-L1**

Professor Mike Clague/Professor Sylvie Urbe, Georgia Guillbert  
£105,500 /3 years

**PhD studentship: Releasing the cell cycle arrest with PROTACs to enhance DNA-damaging therapies**

Dr Morgan Gadd/Dr Sarah Allinson/ Dr Jason Parsons, Lauryn Buckley-Benbow  
£105,500 /3 years

**Defining the hepatic metastatic niche in colorectal cancer on a single cell basis**

Dr Ainhoa Mielgo  
£12,400 /12 months

**YB-1 regulation during Tumour Hypoxia**

Dr Niall Kenneth  
£14,942 />12 months

**Examining the impact of proton beam therapy on DNA replication efficiency and stress in head and neck cancer and glioblastoma cell models**

Dr Jason Parsons  
£10,000.00 />12 months

**PhD studentship: Function of cancer-associated fibrosis in regulating tumour immunity and response to immunotherapy**

Professor Michael Schmid, Nicole Simms  
£105,500 /3 years

**Understanding how uveal melanomas utilise meiotic SYCP1 to become therapy resistant and harnessing it in the clinic**

Dr Urszula McClurg  
£11,000 />12 months

**Acceptable and efficient early screening tests for endometrial cancer (AESTEC) Study**

Professor Dharani Hapangama  
£13,086 />12 months

**Investigating whether chemotherapy-induced senescence affects the behaviour of cancer stem cells in Wilms' tumour**

Dr Bettina Wilm  
Joint with Kidney Research North West 149,954 /2 years

**PhD studentship: Creation of cell lines modelling complex karyotype in B cell lymphomas using CRISPR/Cas9**

Professor Joseph Slupsky  
Joint with The Bloom Appeal  
£105,000 /3 years



# CASE STUDY

**The rate of mortality to prostate cancer incidence in the North West is the second highest in England at 27% and patients are often diagnosed at a later stage.**

There is currently a blood test called a Prostate Specific Antigen (PSA) which can help diagnose prostate cancer. However, this test is not completely reliable as raised PSA is not specific to prostate cancer and may be due to a urine infection, ejaculation or exercise.

The high sensitivity yet poor specificity of PSA leads to false-positive test results and has led to controversy about its use. If the PSA is high, an MRI scan of the prostate is carried out to check for an abnormal appearance. This is useful but can still miss important cancers, especially in younger men under 50 years old and where the cancer is in certain areas of the prostate. MRI is then followed by uncomfortable prostate biopsies, which carry a risk of severe infection and bleeding but may still miss significant cancers.

So, there is a need to develop a more accurate diagnosis that is not only more comfortable and avoids unnecessary invasive investigations, but also the additional need to explore alternatives to biopsies,

which could be potentially delivered clinically locally.

Our study at Lancaster University and University Hospitals of Morecambe Bay NHS Trust (MBHT) will aim to develop a more accurate, non-invasive way to diagnose prostate cancer and bring this directly into the clinical setting. This will be done through a method called Raman Spectroscopy which will explore new biomarkers for prostate cancer. This technique has already proved successful in screening for breast cancer, and we know from other smaller studies that there is very good accuracy in being able to distinguish between prostate cancer or not, but more work is needed to be able to validate this information so it can benefit patients quickly.

Two hundred patients undergoing investigations for suspected prostate cancer will be asked to provide a sample of blood, urine, and saliva. Following collection of these samples the research team will use Raman Spectroscopy to explore new markers for prostate cancer.



**Raman Spectroscopy**



**MRI & Biopsies**



**Non-Invasive Diagnosis**

need for uncomfortable and invasive treatments, which deter many from presenting themselves for treatment until it is too late. This in turn will be life-saving and life changing, not just for the hundreds of men in the North West that must undergo invasive treatments, but also their families, as it will reduce waiting times for a diagnosis, which can cause a lot of stress and uncertainty.

Raman Spectroscopy is a powerful light-scattering technique that can analyse samples, providing information on the proteins, fats and carbohydrates, as well as DNA and RNA. Changes occur in the levels of these with prostate cancer and by identifying these differences, it should be possible to distinguish between cancerous and non-cancerous samples. The results from the blood, urine and saliva collections analysed by Raman Spectroscopy will then be compared between the men with and without prostate cancer, to identify markers.

Alongside this work patients will continue to receive the usual diagnosis of MRI, prostate biopsies, confirmation of cancer (or not) by a pathology doctor.

The impact from this project could be transformational for men across the North West and beyond. It will provide early diagnosis without the





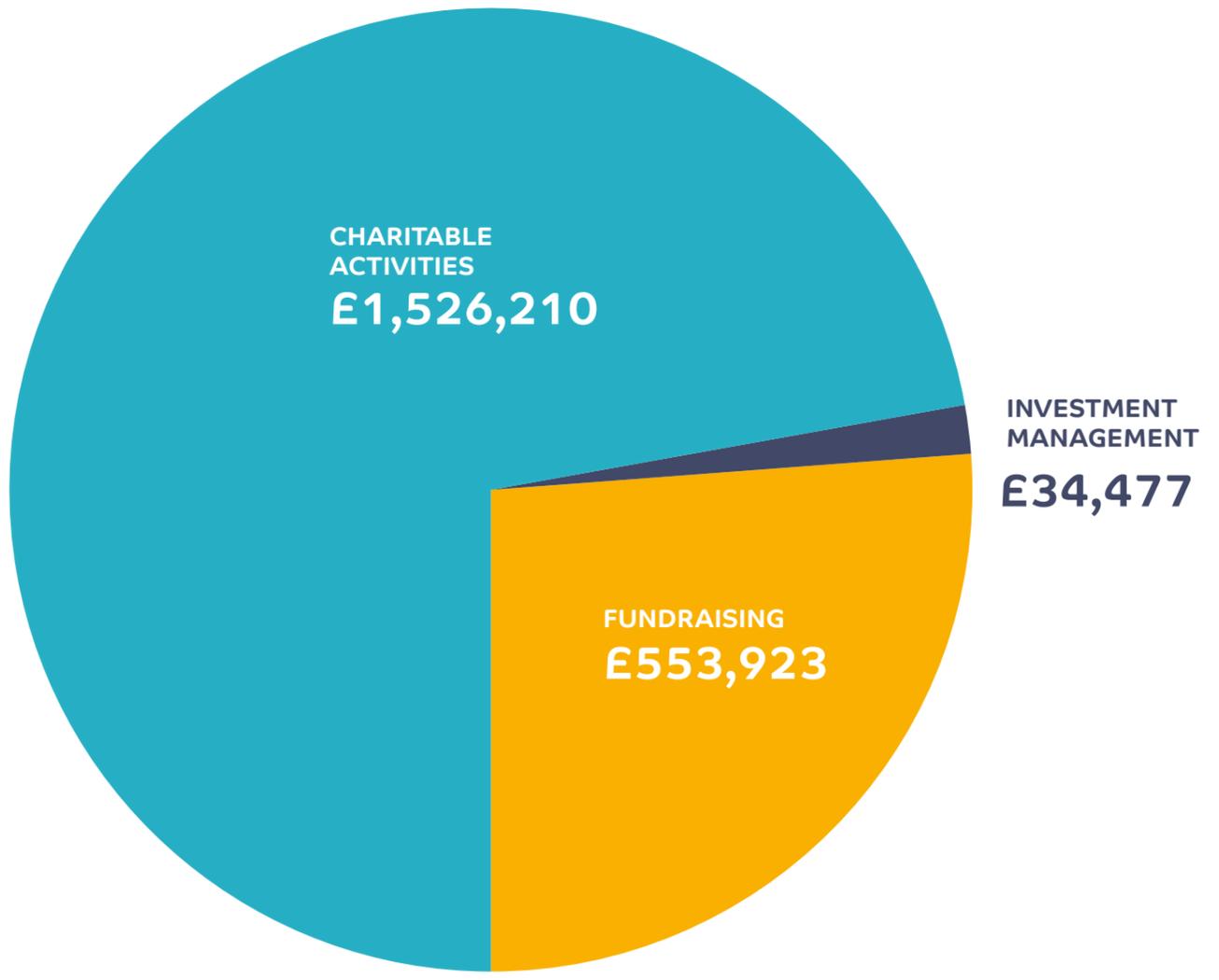
# FINANCIAL SUMMARY 2020-2021

This summary on pages 26-29 gives an overview of how we have performed during the financial year ending 30 September 2021. The full Annual Report and Financial Statements are available from the North West Cancer Research office or the Charity Commission website.

## INCOME



## EXPENDITURE



# CONSOLIDATED STATEMENT OF FINANCIAL ACTIVITIES

FOR THE YEAR ENDED 30 SEPTEMBER 2021

	Unrestricted and total funds 2021	Unrestricted and total funds 2021	Total funds 2021	Total funds 2020
<b>INCOME FROM:</b>				
Donations and legacies	1,627,796	164,977	1,792,773	1,330,439
Investment income	261,502	-	261,502	211,552
<b>TOTAL INCOME</b>	<b>1,889,298</b>	<b>3,000</b>	<b>2,054,275</b>	<b>1,541,991</b>
<b>EXPENDITURE ON:</b>				
<b>Raising funds:</b>				
Fundraising and legacy generation costs	388,946	164,977	553,923	509,029
Investment management	34,477	-	34,477	33,714
Charitable activities	1,522,876	3,334	1,526,210	1,633,188
<b>TOTAL EXPENDITURE</b>	<b>1,946,299</b>	<b>168,311</b>	<b>2,114,610</b>	<b>2,175,931</b>
<b>NET EXPENDITURE BEFORE INVESTMENT GAINS (Losses)/Gains on investments</b>	<b>(57,001)</b>	<b>(3,334)</b>	<b>(60,335)</b>	<b>(633,940)</b>
<b>NET MOVEMENT IN FUNDS</b>	<b>1,163,319</b>	<b>(3,334)</b>	<b>1,159,985</b>	<b>(868,641)</b>
<b>RECONCILIATION OF FUNDS:</b>				
Total funds brought forward	3,407,588	3,334	3,410,922	4,279,563
<b>TOTAL FUNDS CARRIED FORWARD</b>	<b>4,570,907</b>	<b>-</b>	<b>4,570,907</b>	<b>3,410,922</b>

# CONSOLIDATED BALANCE SHEET

FOR THE YEAR ENDED 30 SEPTEMBER 2021

	Total funds 2021	Total funds 2020
<b>FIXED ASSETS</b>		
Tangible assets	4,265	5,917
Investments	9,260,053	9,423,465
	<b>9,264,318</b>	<b>9,429,382</b>
<b>CURRENT ASSETS</b>		
Stocks	17,100	17,126
Debtors	837,604	679,710
Cash at bank and in hand	387,629	727,250
	<b>1,242,333</b>	<b>1,424,086</b>
<b>CREDITORS: amounts falling due in less than one year</b>	<b>(2,995,168)</b>	<b>(4,934,713)</b>
<b>NET CURRENT LIABILITIES</b>	<b>(1,752,835)</b>	<b>(3,510,627)</b>
<b>TOTAL ASSETS LESS CURRENT LIABILITIES</b>	<b>7,511,483</b>	<b>5,918,755</b>
<b>CREDITORS: amounts falling due after more than one year</b>	<b>(2,940,576)</b>	<b>(2,507,833)</b>
<b>NET ASSETS</b>	<b>4,570,907</b>	<b>3,410,922</b>
<b>CHARITY FUNDS</b>		
Restricted funds	0	3,334
Unrestricted funds	4,570,907	3,407,588
<b>TOTAL FUNDS</b>	<b>4,570,907</b>	<b>3,410,922</b>

# TRUSTEES, ADVISORS AND PATRONS



## Trustees and officers of the Board

### Mr N S Lanceley FCA, DL

Chairman and Chair of the Nominations Committee to March 2021

### Miss C M Jones BA, ACG

Chairman and Chair of the Nominations Committee from March 2021

### Mrs F Street

Vice Chair and Chair of the Investment Committee

### Mrs H Atherton

Chair of the Marketing and Fundraising Committee

### Mrs C Bond CPFA

Honorary Treasurer

### Mr M Haig

### Dr P Robertshaw PhD, Dip DM

### Mr S Claus LLB

### Mr P Webster

Appointed 10 February 2020

### Mr M Ore

Appointed 10 February 2020

### Dr S Kothari

Appointed 10 February 2020

### Dr M Carter

Appointed 10 February 2020

## Patrons

### The Most Reverend Malcolm McMahon

The Archbishop of Liverpool

### The Right Reverend Mark Tanner

The Lord Bishop of Chester

### The Right Reverend Paul Bayes

The Bishop of Liverpool

### The Right Reverend Gregory Cameron

The Bishop of St Asaph

### The Right Reverend Peter Eagles

The Bishop of Sodor and Man

### The Right Reverend Beverley Mason

The Bishop of Warrington

### Edmond Seymour Bailey

Lord Lieutenant of Gwynedd

### Mrs Tia Jones

Lord Lieutenant of Powys

### Mark Blundell

Lord Lieutenant of Merseyside

### Prof Dame Janet Beer

The Vice Chancellor,  
The University of Liverpool

### Prof Ian Campbell

The Vice Chancellor,  
Liverpool John Moores University

### Dr Steve Ryan

The President of the Liverpool Medical  
Institution

### The Most Honourable Charles Paget

The Marquess of Anglesey

### The Most Honourable

### David Cholmondeley

The Marquess of Cholmondeley

### Lord Mostyn

### Dame Lorna Muirhead DBE

### Henry Bowring

### Michael Potts FCA, DL

## Registered office

North West Cancer Research  
200 London Road  
Liverpool L3 9TA

## Independent Auditors

### Crowe U.K. LLP

The Lexicon, Mount Street,  
Manchester M2 5NT

## Bankers

### NatWest

247 High Street, Bangor,  
Gwynedd LL57 1RW

## Solicitors

### Brabners LLP

Horton House, Exchange Flags,  
Liverpool L3 9QJ

## Investment Managers

### Investec Wealth and Investment Ltd

The Plaza, Old Hall Street, Liverpool  
L3 9AB

## With Thanks

### Charles Brotherton Trust

### Elda Latin Charitable Trust

### The Red Rose Charitable Trust

### The Chrimes Family Charitable Trust

### Sir Donald and Lady Edna Wilson Charitable Trust

### Lord Leverhulme's Charitable Trust

### Groundwork UK

### Elda Latin Charitable Trust

### Sydney Littler Charitable Trust

### The Hospital Saturday Fund

### The Pilkington Charities Fund

### Liverpool Charity and Voluntary Services

### Eleanor Rathbone Charitable Trust

### BNI Foundation UK

### Raymond Ashcroft Will Trust

### The Charles and Edith Aveling Bounty Charitable Trust

### Investec Wealth & Investment Ltd

### Robert Luff Foundation Limited

### The L A Jones Charitable Trust

### Elizabeth Rathbone Charity





## North West Cancer Research

200 London Road, Liverpool, L3 9TA

Visit [nwcr.org](http://nwcr.org)  
or call **0151 709 2919**  
or email: [info@nwcr.org](mailto:info@nwcr.org)  
for more information

Registered Charity No. 519 357

