

IMPACT REPORT





INTRODUCTION

I am delighted to introduce the latest North West Cancer Research Impact Report.

Since our last impact report, we have continued to diversify our portfolio of world-class research to focus on the needs of our communities. This report brings our impact up to date.

North West Cancer Research has been putting the region's cancer needs first for over 70 years and since 2000, we have invested almost £50m into life-saving research. Our focus is increasingly on improving knowledge on the cause, the care and the cure for the disease and ensuring that the work we fund is relevant to patients and the people in our region.

As a region, our overall levels of cancer are stubbornly higher than the national average, and particular types of cancer are much more common here than in the rest of the UK. For example, in the North West of England, you are 24% more likely to get oesophageal cancer than the rest of the UK and in North Wales, that figure rises to 37%. Head and neck cancer levels are high across the region.

Statistics like these drive us forward and remind us how vital our work is. We need to understand what causes these variations and take action, in order to provide information and solutions for our communities. It is also important that our research is well targeted and effective in its aims.

We have thought a great deal about how we focus our research funding. We want to ensure that we fund work throughout the research spectrum to include studies from the laboratory bench all the way to the patient's bedside and further – for those living with and beyond cancer. Because of this we have funded work which develops the research community and the next generation of scientists, and we have also funded work with doctors based in our hospitals and research active clinicians. Our work has included studies on the effectiveness of psychological support for cancer patients, alongside research looking for bio-markers and ways of detecting cancer sooner. Crucially, we have also funded work in a wide variety of cancers – including cancers of the prostate, breast, lung, head and neck and others.

We are increasingly working in partnership with others, identifying other charities and organisations who share our passion for fighting cancer. We are finding many allies to work with who wish to improve the health of our region.

Our education and outreach work has been expanded to ensure that our communities are aware of cancer, its symptoms and importantly how they can lower their risk of developing cancer. Nearly 40% of cancers are preventable and so we are determined to help our communities achieve a cancer-free future.

None of this would be possible without a key group of people - our supporters, who provide us with the resources we need in order to fund our work. We have so much to thank them for and we want them to know that we appreciate all that they do for us and in helping to create a cancer-free future for the region.



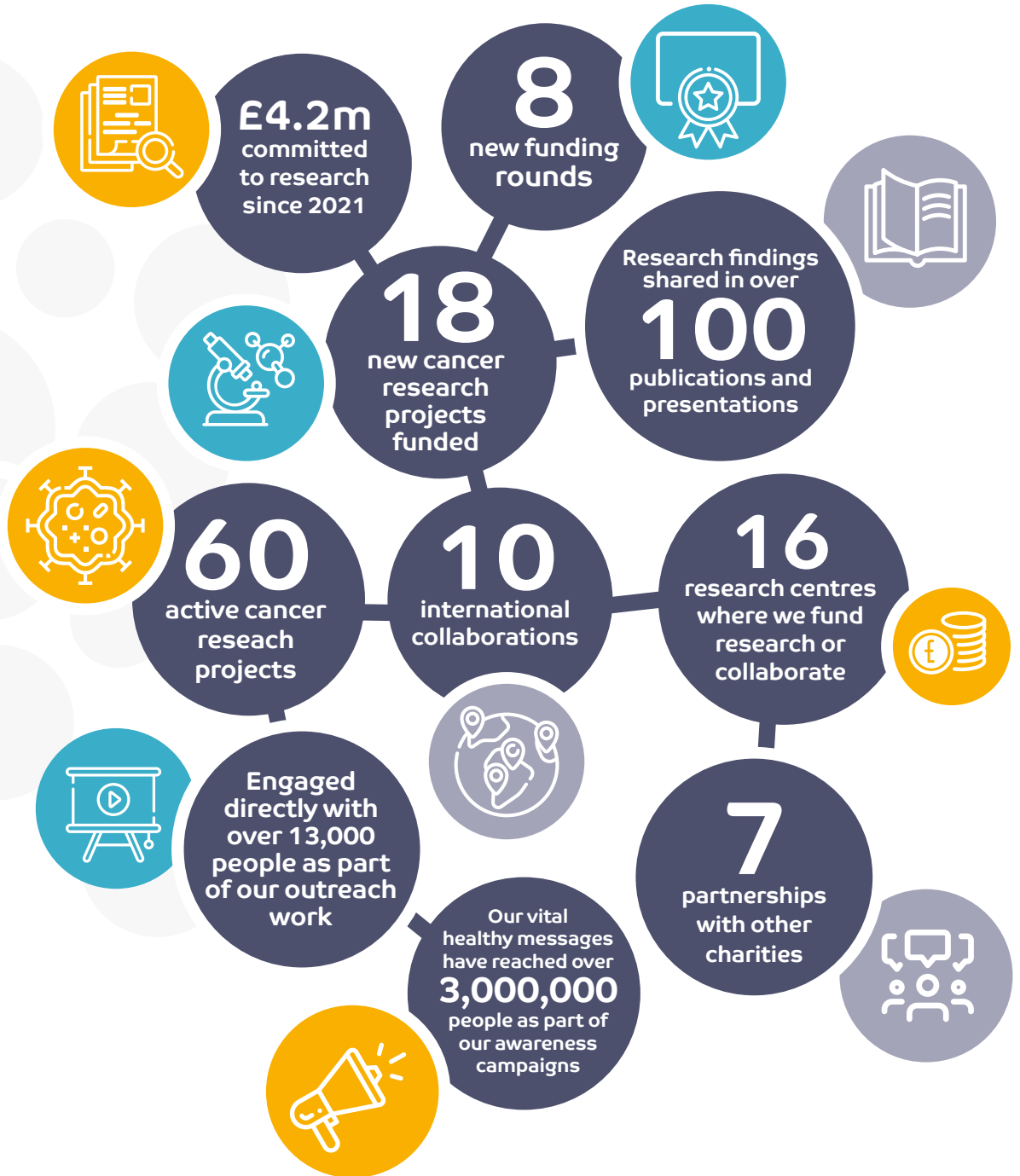
Alastair Richards
CEO





OUR IMPACT

This report looks at the impact of our work – understanding what we have achieved and how we have moved forward cancer knowledge.



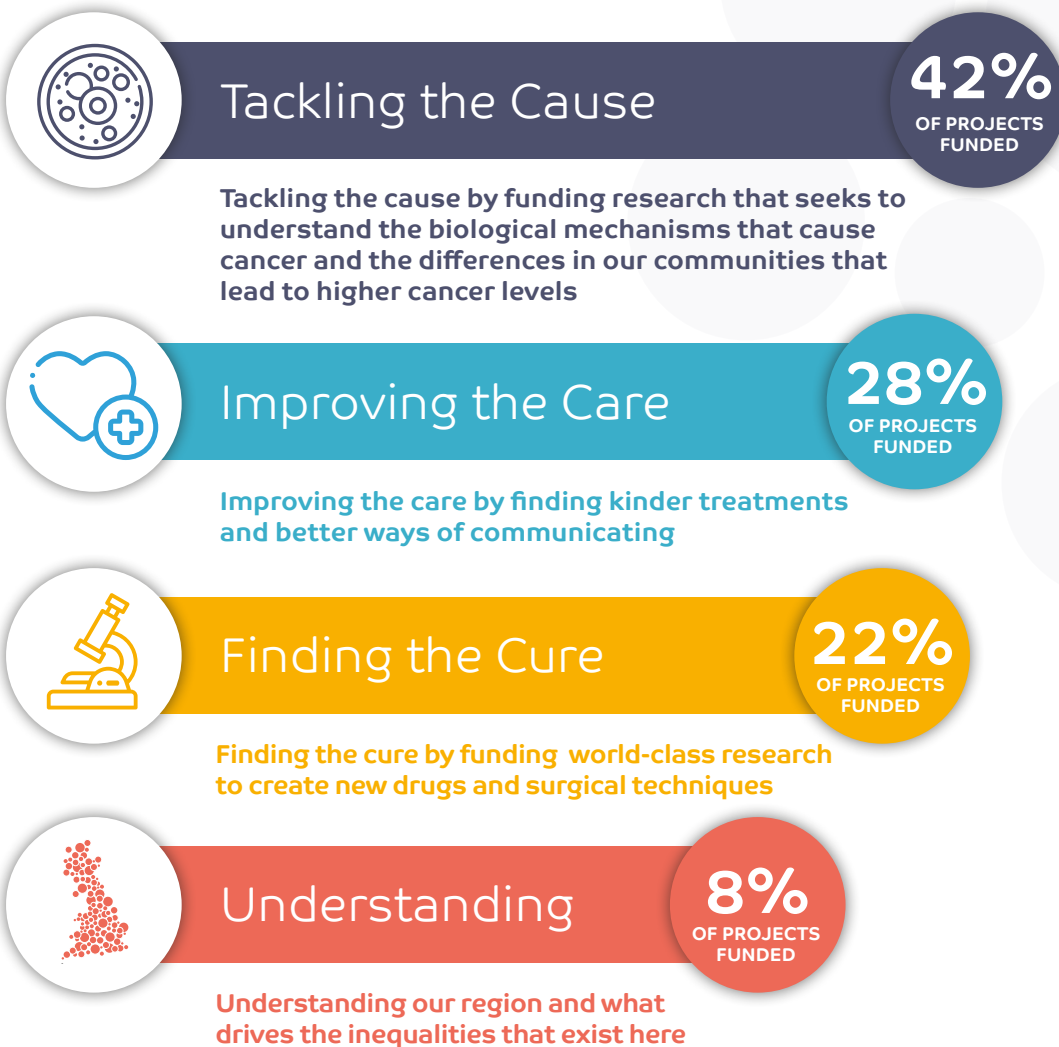
RESEARCH

Putting our region's cancer needs first by funding world-class cancer research

We are proud to be members of the Association of Medical Research Charities (AMRC) and adhere to their processes and guidance to ensure our funding and the management of our research priorities are transparent and rigorous.

We work collaboratively with a team of scientists, researchers, clinicians and patients who form our Advisory Groups and help determine which projects are most relevant and impactful to our community.

We only fund the highest quality research that has the greatest impact on the lives of people in the region.





RESEARCH PROJECT CASE STUDY

BREAST CANCER LANCASHIRE



Incredible progress has already been made in tackling three of the four types of breast cancer and targeted therapies have been developed based on our understanding of what these cancers need for growth.

But the fourth type, triple-negative breast cancer, lacks an obvious target and without a target, we have been unable to develop effective treatments. However, a recent project taking place at Lancaster University has made a significant step forward in addressing this.

A team of scientists headed by Dr Andrew Fielding and Dr Morgan Gadd, have identified a critical factor, a protein, required in the development of triple-negative breast cancer and have also successfully developed a drug that effectively stops the cancer cells in their tracks.

Crucially, this new class of drug binds to the protein and leads to the degradation of the protein within the cancer cells, eliminating it altogether. Pleasingly, the drug is effective at low doses and tends to have minimal side effects on normal cells.

Having proved the effectiveness of the drug, they are now developing the next stages of the project, including drug optimization and preclinical development.



“We are the first to successfully design this new drug class against our target protein and prove its effectiveness in cell culture models of cancer.”

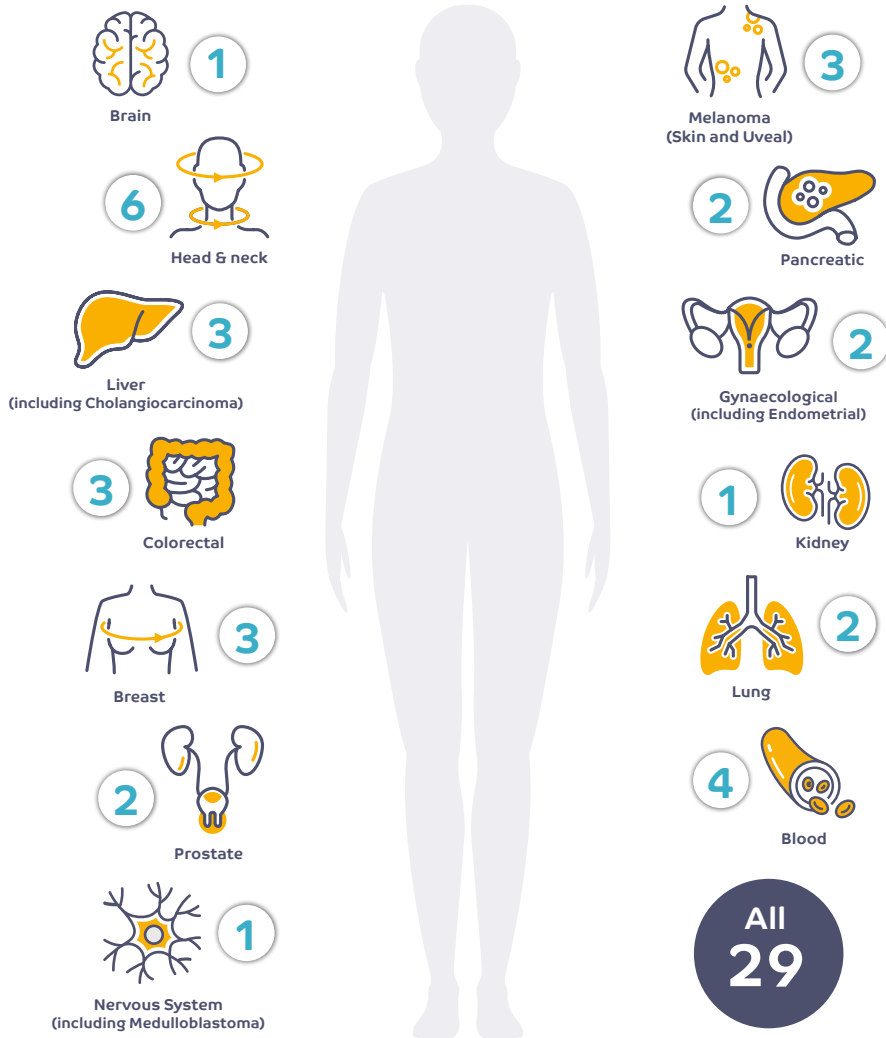




RESEARCH PROJECTS BY CANCER TYPE

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

62 active research projects



Total cancer types = 67 due to overlap in research areas covered by 62 individual projects including studentships and research development grants.

SHARING OUR KNOWLEDGE, DISCOVERIES AND PROGRESS

Our research has led to a significant amount of vital new knowledge which we have shared with the wider cancer community to drive change and improve outcomes for patients.

The impact of Covid 19 has meant that opportunities to meet and share information have been limited. However, despite the restrictions, the work of our researchers has been featured in renowned publications to allow the circulation of findings to a wide clinical and academic audience. In addition, the research has been presented at conferences to ensure that the findings are disseminated to as wide an audience as possible.



Over
100
publications and
presentations

RESEARCH PROJECT CASE STUDY GYNAECOLOGICAL

The hidden experiences of patients treated with radiotherapy for gynaecological cancer have been published in a book by Lancaster researchers working with NHS staff.

The Gynae Cancer Narratives Project was led by Dr Lisa Ashmore and aimed to increase understanding of how radiotherapy impacts on social, personal and sexual lives as well as improving future patient experiences of living with the social and personal impacts of radiotherapy.

The resulting book entitled “We need to talk ...about radiotherapy for gynaecological cancer” brings together patient experiences in the hope that the care for people with a gynae cancer will be the best it can be for every patient.

Kathleen, a participant quoted in the book, wrote: “I would have preferred more realistic information from the leaflets I was given. I recently re-read the one about radiotherapy while doing this and I commented to a friend that I think it was the Disney version that I read. I really wasn’t scared or nervous of the treatment but I think I should have been more aware of it. I think the info you get should be more realistic and should be told what can happen mentally and physically.”

The researchers hope that the book will be read by patients, relatives, radiographers and all involved in care. For patients and their relatives there is advice, alongside examples of how and what to ask prior to, during and after treatment, and encouragement to ask again if they do not get answers. For practitioners there are questions to encourage reflection, conversation, communication with patients and also to challenge current services. The aim is that questions can be used directly or as prompts, or as part of a support or reading group.





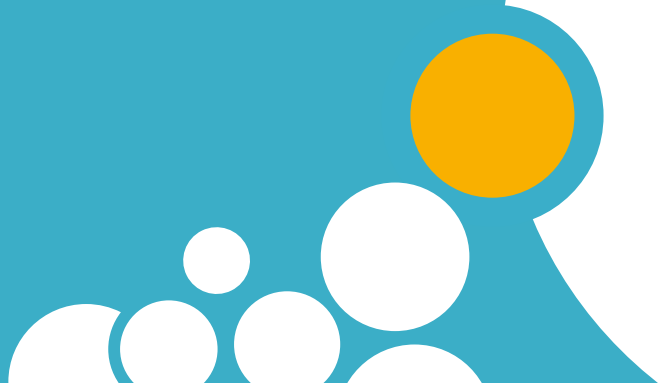
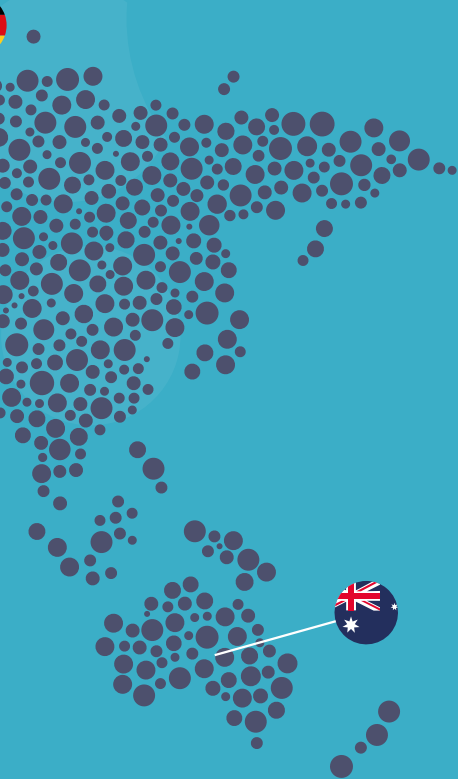
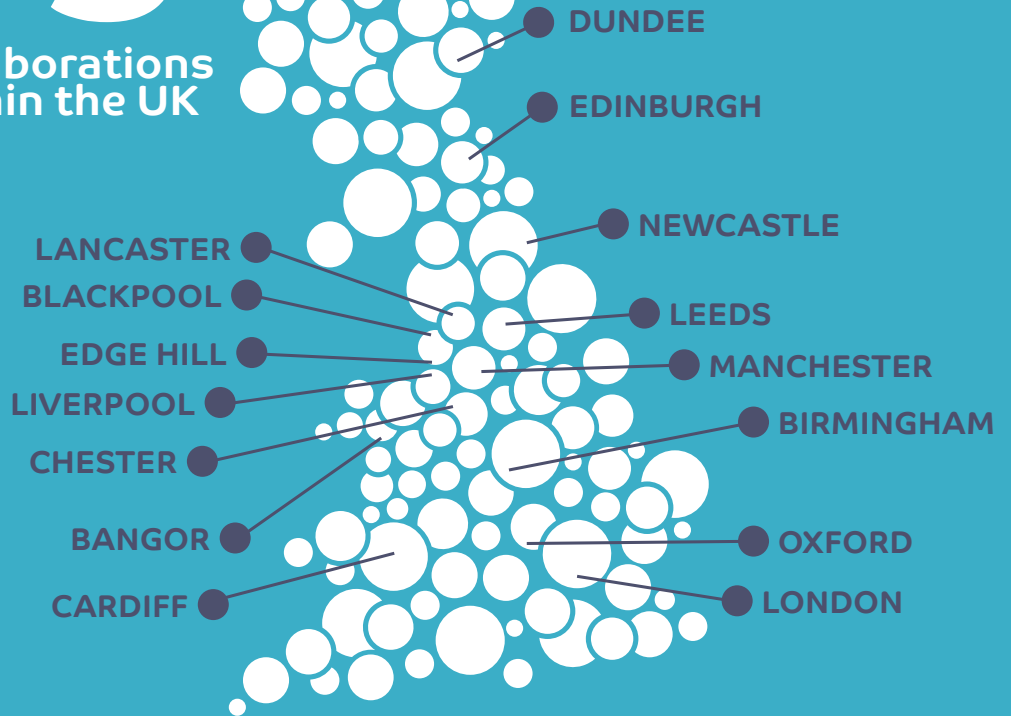
LOCAL FOCUS, NATIONAL COLLABORATION, GLOBAL IMPACT

Our national and global collaborations continue to grow and develop as North West Cancer Research scientists work in partnership to increase the reach of their work.



15

Collaborations
within the UK





RESEARCH PROJECT CASE STUDY

HEAD AND NECK CANCER NORTH WALES



A North West Cancer Research-funded team of researchers, based across the region, have identified a new protein in cancer cells which could lead to improved treatments for head and neck cancer and ovarian cancer patients.

The team, which is headed by Dr Christopher Staples at Bangor University, Wales, seek to build upon prior research. The research found that ovarian cancer patients with a certain genetic mutation, in the BRCA genes, respond well to precision medicines called PARP Inhibitors. PARP Inhibitors specifically kill cancer cells with a BRCA mutation.

Researchers in Dr Staples' laboratory have shown that the newly identified protein, named MRNIP, shares overlapping properties with BRCA proteins in that they both help cancer cells deal with chemotherapy. Some cancers have lost MRNIP, and therefore may respond well to certain anti-cancer drugs.

The team are exploring these new findings in head and neck and ovarian cancers by using gene editing technology to generate a series of cancer cell lines lacking the MRNIP gene. They will target these cells with chemotherapy, radiotherapy, and other novel anti-cancer drugs and will monitor the responsiveness of the cells and link the findings with the level of DNA damage to provide a route forward for new, more effective treatments for patients.



SUPPORTING CANCER SCIENTISTS OF TOMORROW

We are targeting investment to ensure the future of cancer research in our region by supporting scientists early in their careers.

“North West Cancer Research have been incredibly supportive in helping us build a broad community of cancer researchers at Lancaster University, whose collective aim is to tackle cancer by developing better treatments, understanding the patient experience and addressing the impact of regional differences in cancer diagnosis and treatment.

The charity’s ongoing support, particularly its investment in people, has been critical to this. Several senior cancer researchers, including myself, were first recruited to Lancaster through fellowships funded by the charity and they have helped to develop the cancer researchers of tomorrow by funding PhD studentships and funding summer placements for some of our most talented undergraduates.”

Dr Sarah Allinson

**Deputy Head of Department
of Biomedical and Lifesciences**





RESEARCH PROJECT CASE STUDY

PSYCHOLOGICAL IMPACT OF CANCER ON CARE GIVERS

CHESHIRE & LANCASHIRE

Professor Nick Hulbert-Williams and a team from Edge Hill University's Department of Psychology, along with Dr Brooke Swash from University of Chester and Professor Valerie Morrison at Bangor University are leading the project, with Lorraine Wright from Edge Hill University appointed as the PhD student supporting.

1 in 8 adults in the UK are informal carers, with two thirds over the age of 65. This age group accounts for 60% of UK cancer diagnoses and the North West has comparatively high proportions of carers compared to the national average. Being diagnosed with cancer whilst undertaking this role brings additional challenges to the caregiver.

A team of researchers from across the region are aiming to better understand the care and support that is provided to people with cancer who have caregiving responsibilities, as well as the physical and psychological impact on the person they are caring for.

The team are now underway with a series of interviews and discussion groups, exploring the experiences and challenges of the caregiver with cancer, the person they are caring for and healthcare professionals involved in the delivery of cancer care.

The findings of the interviews will be used to develop a toolkit to help cancer care professionals better support their patients with caregiving responsibilities.

RESEARCH PROJECT CASE STUDY

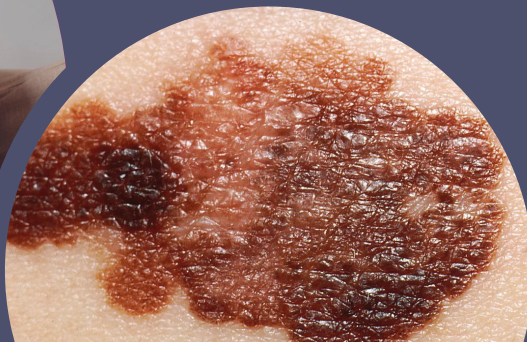
MALIGNANT MELANOMA

MANCHESTER

Sadly, half of people with advanced melanoma are still dying from their disease within five years and there are limited options for cancers that have spread to other organs and stopped responding to treatment. This project hopes to pave the way for a new treatment for patients who are either ineligible for or failing to respond to other treatments.

T-lymphocyte blood cells (T-cells) have been proven to track down cancer cells and eradicate them. Researchers at University of Manchester have engineered T-cells and added chimeric antigen receptors to create CAR-T cells. These CAR-T cells can target a protein known as CD146, which is found in many types of cancer cells. This project will seek to develop a safe and effective CAR-T cell treatment that will target the CD146 protein on the surface of cancer cells and hopefully destroy them.

Although this project is focused on melanoma initially, the resulting treatment could be applicable to other cancers too such as breast, colon, head and neck cancer and lung cancer.





RESEARCH PROJECT CASE STUDY

PANCREATIC CANCER MERSEYSIDE



A team of scientists, headed by Dr Ainhoa Mielgo and Professor Michael Schmid at the University of Liverpool, are seeking to understand why some pancreatic cancers are resistant to treatment.

The team are aiming to identify currently unknown ‘negative immune checkpoint regulators’ existing in pancreatic cancer cells. Negative immune checkpoint regulators are molecules that prevent Cytotoxic T-Cells (T-Cells) from working effectively – T-Cells are an important component of the immune system, which seeks to destroy damaged cells.

Previously, immunotherapies that target the two most studied negative immune checkpoint regulators (PD-1 and CTLA-4) have revolutionized cancer treatment. Blocking these negative immune checkpoint regulators reactivates the useful T-Cells to allow them to kill tumour cells.

Although there has been great success with this method in several cancer types, these methods do not work on pancreatic cancer which suggests that additional negative immune checkpoint regulators are still blocking T-Cell function in pancreatic cancers.

The goal of this project is to identify the negative immune checkpoint regulators that are active in pancreatic cancer and ultimately develop better treatments to target these, reinvigorating the patient’s immune system to fight pancreatic cancer.



PUTTING OUR REGION'S CANCER NEEDS FIRST THROUGH EDUCATION, ENGAGEMENT AND OUTREACH

As well as supporting life-saving research, we directly engage with communities across the region to help further education and understanding of the ways to prevent cancer and to highlight the early warning signs.

Our award-winning and innovative educational projects highlight key issues and give people the practical skills and tools to become advocates for early diagnosis, well-being and healthy living in their community.

Whether we are providing hands-on Labcoat Learning sessions to help school children understand the science behind our work, highlighting the symptoms of cancer to encourage early diagnosis or warning outdoor workers of the dangers of skin cancer, we are determined to improve the health of the region.



Through our engagement work we have:



**Worked with over
100 local schools,
community groups
and venues to
raise awareness**



**Engaged directly
with over 13,000
people from
across the region**



**Ensured that over
3,000,000 have
heard our vital health
messages as part
of our awareness
campaigns**



ENGAGEMENT CASE STUDY

Skin Cancer Campaign

In the summer of 2022, North West Cancer Research set out to raise awareness of skin cancer and the importance of protecting our skin from the sun's UV rays with our #sunsafeskin campaign.

As part of the campaign, North West Cancer Research travelled across the region, touring local attractions with our very own super-fun 'Sun Cream Cart.' The cart visited beaches and shopping centres in Anglesey, Blackpool, Bury, Formby and Southport and handed out free Sun Sense factor 50 sun cream samples as well as informative postcards and leaflets, educating the public on how they can check their skin for changes and the best ways to stay safe in the sun. The world-famous Blackpool Tower was illuminated in North West Cancer Research yellow, to promote the campaign as the sun went down.

During this tour, the team engaged directly with over 6,000 people.

Adverts ran across social and digital channels and featured a sun safety animated video and busting common myths about skin cancer and were seen over 1.8 million times.

The campaign was also featured across regional media including television, radio, print and online channels which provided 19.2 million opportunities to see our cancer prevention messages.







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Visit nwcr.org/get-involved
or call **0151 709 2919** or email:
info@nwcr.org for more information

Registered Charity No. 519 357

