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Professor Zoran Rankovic

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## Editorial

**Cancer research is a global endeavour, and to keep making discoveries that will transform patients' lives, we must attract the best and brightest talent.**

We're thrilled to welcome Professor Zoran Rankovic, an internationally renowned drug discovery expert, to lead our Centre for Protein Degradation. This exciting appointment marks a significant step forwards in our ongoing efforts to defeat cancer.

Philanthropy is crucial in helping us tackle some of the biggest challenges in cancer research, including developing innovative drugs that will extend lives and offer potential cures. We're deeply grateful to David and Ruth Hill, whose generous support has been instrumental in establishing the centre and attracting world-class talent of Professor Rankovic's calibre. *See page 12 to learn more.*

We were extremely honoured to benefit from a recent motorbike ride in memory of Dave Myers of the Hairy Bikers, who sadly died from cancer earlier this year. His widow, Liliana, selected us as a recipient of the fundraising from 'Dave Day', which had an overwhelming public response and raised

more than £63,000 for our research. *Read about this touching tribute on page 6.*

Our scientists continue making pivotal discoveries in breast cancer research, leading to improved diagnosis and life-changing treatments. Recently, a new targeted breast cancer drug we helped take from lab bench to bedside received approval in the UK for many patients with advanced disease. This achievement is incredibly rewarding to see, and we hope the drug will become available on the NHS as soon as possible. *Read about this milestone on page 5, and explore our latest breast cancer research on pages 10-11.*

Finally, I'd like to thank all our supporters. Your generosity is essential in maximising the impact of our research for the benefit of people with cancer. Together, we're continuing to make more discoveries and transform more lives.

**Professor Kristian Helin**  
Chief Executive  
The Institute of Cancer Research

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## “We still want more time – that’s the role of research”

Yvonne Diaz was diagnosed with stage 4 lung cancer three years ago at the age of 55. She lives in London with her husband and twin sons.

“I went to my GP because I'd been coughing quite a lot. I'd assumed it was caused by seasonal allergies, but by the time I sought help I was finding it hard to speak. My GP sent me for an X-ray. I'm so lucky she did.

“After the diagnosis, I had a biopsy to see what type of lung cancer it was, but by this stage I'd become so ill that I couldn't even get out of bed. When the results arrived, my consultant told me it was 'good news': I had an ALK-positive gene mutation, which meant I was highly treatable. I started taking the targeted therapy brigatinib three days later, and within a fortnight



Yvonne Diaz with her family

I was well enough to join my family for dinner again. Now I'm able to do much of what I did before my diagnosis.

“People like me with an ALK+ mutation tend to have the best survival rates, but in reality, that translates into just under seven years. What happens after that is a big question mark, and this is what the ICR is working on.

“It's hard to live every day with the knowledge that if you're lucky, you might have something that is treatable when the cancer becomes resistant to the drug you're taking.

“Too many people are not getting anywhere near their seven years. For those who do, we still want more time. That's the hope and the role of research.”

### Help us tackle hard-to-treat cancers

**Thank you to everyone who has supported our latest fundraising appeal so far.**

This appeal, which features Yvonne's story, has raised more than £93,000. It focuses on cancers of unmet need, including pancreatic,

brain and lung cancer, as well as much rarer cancers such as sarcomas and mesothelioma. There are not yet enough effective treatments for these cancers, which still have poor outcomes.

It is only by addressing all types of cancer, even the most challenging to treat, that we can hope to defeat this disease.

**If you'd like to make a donation, please visit: [ICR.ac.uk/GiveHope](https://www.icr.ac.uk/GiveHope)**

## Major new discovery in rare ‘spider web’ childhood brain tumours



Professor Chris Jones

Our researchers have uncovered the unique genetic features of gliomatosis cerebri, an extremely rare and highly aggressive childhood brain tumour. The discovery could pave the way for more effective treatments for this devastating disease.

Gliomatosis cerebri is hard to treat because it spreads like a spider's web deep into the brain, making surgical removal almost impossible and radiotherapy very difficult. The decade-long international study involved profiling tumour samples from 104

children and young people with the disease.

Professor Chris Jones, who led the study, said: “Now that we know it’s a distinct tumour type, researchers around the world can focus their efforts on its specific biology. This could eventually enable clinicians to treat cases of gliomatosis cerebri in a more precise way.”

Set up a regular gift to help us continue making discoveries and saving lives.

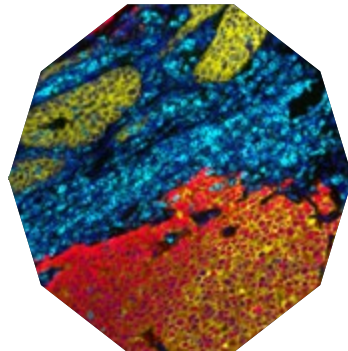
You can donate now by visiting [icr.ac.uk/Monthly](https://icr.ac.uk/Monthly)

## At-home saliva test shows promise for prostate cancer screening

A saliva test carried out at home is better at identifying men at higher risk of prostate cancer than the standard blood test.

Our researchers used blood and saliva tests on men aged 55-69 who were found to be at higher risk of developing the disease due to their genetic makeup. The saliva test had fewer false positives, picked up a greater proportion of aggressive cancers and detected cancers that would have been missed. It even identified cancers overlooked by MRI scans.

This cheap and simple new testing method, which builds on decades of our research, could ultimately help to improve early detection and save lives.



Prostate cancer cells  
Credit: Mateus Crespo/  
Prof Johann de Bono at the ICR

## New targeted breast cancer drug approved in UK

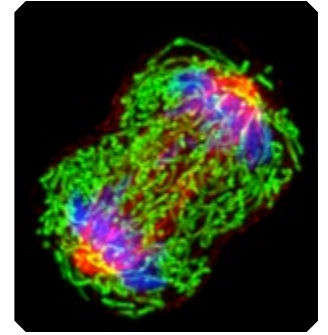
We’re delighted that a new targeted drug, called capivasertib, has now been approved by the Medicines and Healthcare products Regulatory Agency (MHRA) for treating the most common type of advanced breast cancer. The new treatment option could now benefit certain patients in the UK who are no longer responding to standard treatments.

Capivasertib works in a new way, by blocking a key cancer-driving protein called AKT. We played a pivotal role in its development, from early science to drug discovery research and clinical trials.

The new drug now needs to be evaluated by health authorities to determine whether it will be made available on the NHS.

Our former Chief Executive, Professor Paul Workman, who worked on early drugs acting against the same protein as capivasertib, said:

“It’s immensely gratifying that years of collaboration have contributed to the discovery and development of this new cancer drug, and I am thrilled that capivasertib now has the potential to improve the lives of patients living with advanced breast cancer in the UK.”



Dividing breast cancer cell  
Credit: Wei Qian/National  
Cancer Institute

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The new treatment could benefit patients in the UK who are no longer responding to standard treatments.

## Ultra-sensitive blood test detects breast cancer recurrence early



Dr Isaac Garcia-Murillas

A new blood test developed by our scientists can predict whether breast cancer will return months or even years before relapse. In a study of 78 patients with early-stage breast cancer, it successfully detected tiny amounts of tumour DNA in all 11 women whose disease later returned.

We hope this ultra-sensitive method could one day help improve long-term monitoring of patients whose breast cancer is at high risk of relapse, enabling potentially life-extending treatment.

## Thousands raised through ‘Dave Day’ tribute to Hairy Biker Dave Myers

On Saturday 8 June, hundreds of thousands of people from across the UK came together to celebrate the life of motorbike lover and TV chef Dave Myers and to raise money for our vital research.



Hairy Biker Si King with Sophie Barrett, our Sports and Challenge Events Manager

Dave Myers, who was one half of the beloved TV cooking duo the Hairy Bikers, died from cancer in February at the age of 66.

The event, dubbed ‘Dave Day’, saw an overwhelming response from fans and fellow bikers.

More than 45,000 motorcyclists travelled in convoy from London to Dave’s hometown of Barrow-in-Furness. The ride, which was organised by volunteers and led by fellow Hairy Biker



Hairy Biker, Dave Myers, with his beloved motorbike

Countless fans also visited Barrow for a number of events in Dave’s honour, including a concert and a service of remembrance.

Dave’s widow, Liliana Myers, chose us and the NSPCC’s Childline as the beneficiaries of the fundraising from the ride out. More than £63,000 will go towards our world-class cancer research.

Our Chief Executive, Professor Kristian Helin, said:

“We are immensely grateful to Liliana for deciding to contribute to our research. We are honoured that she chose to support our work and what we do for people with cancer. It’s really very important for us to get this type of funding from events like these, as it helps us work on developing a new generation of smarter, kinder treatments.”

## Ryan Reynolds backs new Wrexham Terry Fox Run supporting the ICR

We’re thrilled that Hollywood star and Wrexham AFC co-owner Ryan Reynolds has thrown his support behind the first-ever Terry Fox Run in Wales, which will take place on 13 October.

The fundraising event, which exclusively supports our research, is part of a growing series of Terry Fox Runs taking place across the UK following successful events held in London.

Terry Fox, a 22-year-old Canadian athlete who lost his leg to a rare bone cancer, became a national hero when he embarked on his ‘Marathon of Hope’ in 1980, running across Canada to raise awareness and funds for cancer research. Although Fox’s journey was cut short when his disease spread to his lungs, his legacy has lived on through annual runs held in more than 60 cities worldwide.

Ryan Reynolds said: “As a Canadian, Terry Fox and his legacy have been a source of inspiration in my life for as long as I can remember. Having been a part of the Wrexham community for the last few years, it is truly remarkable to know that these two deeply meaningful parts of my life will soon come together in the first ever Terry Fox Run in Wrexham.”

Other Terry Fox Runs are scheduled on 15 September in London and 29 September in both Glasgow and Hampshire.

Find out more and sign up at [terryfoxrunuk.org](http://terryfoxrunuk.org).



Ryan Reynolds wearing an inspirational Terry Fox t-shirt  
Credit: Ryan Reynolds/Terry Fox Foundation

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Terry Fox and his legacy have been a source of inspiration in my life for as long as I can remember.

# “Christopher would be so amazed by what we’ve achieved”

When Lynn Lucas’ son Chris was diagnosed with a rare soft tissue cancer, her life was changed forever.

Chris was 15 – a sporty teenager who would go on to achieve great GCSE results and start a career in graphic design. But despite twice battling back from the disease, he died three years after diagnosis.

“Parents shouldn’t outlive their children. I know people don’t want to think about these things, but they can happen to anybody.

“We’ve met a lot of lovely families, but for the wrong reasons. I’m in a club with people that none of us want

to be in. We shouldn’t be in it. I’m still angry – why us, why my Christopher?”

After Chris’ death in 2000, Lynn and her husband Lynn set up the Chris Lucas Trust and dedicated their lives to raising money for research that offers hope for other people with the same cancer as Chris – rhabdomyosarcoma.

Over the last two decades, the Trust has raised more than £2 million to fund research into the disease. Chris’ parents recently both received a

Member of the Order of the British Empire (MBE) in honour of their commitment to fundraising.

Chris’ mother Lynn thinks he would have been proud of his mum and dad:

“To be recognised by the King’s Birthday Honours means the world to us and all our close family and friends who support what we do.

“Christopher would be so amazed by what we’ve achieved. I used to be very



Chris Lucas with his parents

“I first met Lynn and her husband more than 15 years ago and have since been humbled and inspired by their incredible commitment to tirelessly rallying support for research into rhabdomyosarcoma.

“The Chris Lucas Trust has enabled us to continue our ground-breaking research. Over the years, we have been able to identify molecular markers of high-risk cancer in patients with rhabdomyosarcoma and to define less toxic and more bespoke potential treatments.”

**Professor Janet Shipley, Leader of our Sarcoma Molecular Pathology Group**



shy and found it difficult talking to strangers.

“But because of what I’ve gone through, nothing can hurt me anymore. I am so passionate about research, I’m not afraid of speaking to anyone now.”

Among their fundraising achievements, Chris’ parents established the Great North Bike Ride, which sees more than 1,000 cyclists pedal 60 miles along the North Northumberland coastline.

The Trust’s support of our research has been transformative, making immeasurable progress possible. In recent years, it has helped Professor Janet Shipley’s lab develop a genetic test that signals which patients have a

higher risk of aggressive disease. It also funds biopsy samples from children with rhabdomyosarcoma living across Europe, which are crucial in allowing scientists to make progress in the lab.

“We don’t want any other family to go through the torment we’ve experienced, so anything we can do to help The Institute of Cancer Research’s work into rhabdomyosarcoma, we’re 100 per cent for that.

“Every penny we raise goes to the ICR because we feel that it’s doing the best work and has contacts all over the world.

“It’s been 24 years now since we lost our Christopher, and we haven’t found a cure yet. But children are surviving

longer, and we are finding out more about the reasons why rhabdomyosarcoma happens and why patients relapse.

“Because of research, we can move forward. And who’s to know, in three years’ time, what else we might find. The answer’s there, we’ve just got to find it. I hope we will.”

“““ Every penny we raise goes to the ICR because we feel that it’s doing the best work and has contacts all over the world.

# Overcoming recurrence in breast cancer is key to saving patients' lives

**Humans have been working to understand and defeat breast cancer for more than 3,500 years, with the earliest known treatments including cauterisation and arsenic paste.**

Fortunately, progress has accelerated exponentially throughout the centuries. We have developed techniques for detecting breast cancer earlier, and we have an array of treatment options that we can target to patients according to the type, stage and genetics of their cancer. As a result, the UK's one-year and five-year survival rates for breast cancer stand at 97 and 86 per cent, respectively.

## **A major hurdle**

However, breast cancer still has a powerful trick up its sleeve: recurrence. Various factors, including the type of breast cancer and its stage at diagnosis, can affect the risk of recurrence, which decreases over time but never disappears. Recurrence is still possible decades after the initial treatment, and this unpredictability places a significant psychological burden on many survivors.

Earlier this year, our scientists showed that it was possible to predict the recurrence of breast cancer in high-risk patients – even years ahead – by analysing blood samples for tumour DNA, which cancer cells release into the bloodstream (*see page 5 to learn more*). This could improve the chances of detecting cancer early should it reappear.

## **Hope for the future**

Ideally, though, we need to stop breast cancer from returning at all. In recent decades, an innovative type of treatment called immunotherapy has provided hope. Immunotherapy, which enhances the body's ability to detect, target and kill cancer cells, has been shown to reduce the risk of recurrence in aggressive breast cancer.

However, more research is needed to understand exactly how these treatments work, how we can maximise their effectiveness while limiting their side effects, and how we can identify those most likely to benefit.

## **'Supercharging' the immune system**

Recently, Dr Stephen John Sammut, Leader of our Cancer Dynamics Group, was the main contributor to innovative work that could lead to improved, personalised immunotherapies. Dr Sammut and his colleagues found that when certain immune cells detect breast cancer in one part of the body, they search for similar cancer cells elsewhere. On finding them, they produce antibodies to recruit cancer-killing immune cells.

The team developed a computational tool that could predict which immune cells were most likely to perform this 'cancer surveillance'. Scientists could use this information to artificially create the same antibodies, thereby boosting the immune system's response against breast cancer that has spread.

## **Preventing dormant cells from reawakening**

Other scientists are focusing on alternative treatment avenues. An early-stage study led by Professor Luca Magnani, Leader of our Breast Epigenetic Plasticity and Evolution Group,

## **"Immuno-oncology is such an exciting, fast-paced field"**

**Dr Esther Arwert is working on identifying treatments to enhance the immunotherapy options available to people with breast cancer.**

Dr Arwert started her ICR career at our Centre for Cancer Drug Discovery, where critical research took place that led to the breast cancer medication capivasertib – now approved by the US Food and Drug Administration (FDA) and the MHRA in the UK. She now leads our Functional Tumour Immunology Group, which is part of our Centre for Translational Immunotherapy/Centre for Immunotherapy of Cancer.

Dr Arwert said:

"Immunotherapy has revolutionised the treatment of cancer. We now know that we can successfully harness the body's immune system to control and destroy the disease. The next step is to better understand the complex biology behind immunotherapy so that we can predict patient responses and treatment efficacy.

"Immuno-oncology is such an exciting, fast-paced field that it's impossible not to feel motivated working here. I am confident that our work has the potential to transform the lives of many people with breast cancer."



revealed that hormonal treatment given after surgery can sometimes trigger changes in gene activity that allow breast cancer cells to enter a dormant state. Upon 'waking up', these cells begin dividing again, causing cancer to return. By inhibiting an enzyme called G9a, the researchers eliminated these cells. This discovery could lead to new treatment approaches that remove any worry of breast cancer returning.

## **Undeterred in our mission to defeat breast cancer**

Our scientists are responsible for some of the most transformative discoveries in breast cancer research, from identifying the BRCA2 gene to helping develop a class of drugs called PARP inhibitors. With many of the brightest minds in science continuing to tackle breast cancer from all angles, further discoveries are undoubtedly on the horizon. Thanks to

our researchers' passion and persistence, we believe we can overcome whatever hurdles breast cancer places in our path.

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Further discoveries are undoubtedly on the horizon.

# Welcoming a visionary leader in cancer drug discovery

We're thrilled to announce Professor Zoran Rankovic as the new Director of our Centre for Protein Degradation. An international leader in this cutting-edge field, he brings more than 25 years of experience from both industry and academia to spearhead one of the most promising frontiers in cancer drug discovery.

Launched in 2022, the Centre for Protein Degradation was made possible through a generous £9 million philanthropic donation from David and Ruth Hill. Based within our Centre for Cancer Drug Discovery, its aim is to discover and develop a new generation of drugs that target cancer in innovative ways.

A multidisciplinary team of scientists at the centre will accelerate research into targeted protein degradation, which holds immense potential for delivering a new wave of cancer treatments to help patients live longer, better lives.

Professor Rankovic joins us from St. Jude Children's Research Hospital in

Memphis, USA. His impressive background includes leadership roles in medicinal chemistry and drug discovery, and he has extensive experience in developing potential future drugs for various illnesses, including cancer, neurodegenerative disorders, psychiatric conditions and cardiovascular disease.

## A revolutionary approach to cancer treatment

Over the past two decades, targeted drugs that work by blocking the activity of cancer-related proteins have improved the lives of many cancer patients. However, cancer cells often develop resistance over time – meaning patients may initially respond well to treatment, only for their cancer to come back, more aggressive and resistant.

Targeted protein degradation has emerged as a promising approach to address this challenge. Instead of merely blocking protein activity, this pioneering strategy hijacks the cell's natural waste disposal system to eliminate cancer-causing proteins. As a result, these new therapies



Professor Zoran Rankovic outside the Centre for Cancer Drug Discovery

“““

There is no more exciting field in drug discovery than targeted protein degradation.

have the potential to be more effective and longer lasting than conventional targeted therapies.

**Opening the door to new treatment approaches**

This groundbreaking method also opens the door to tackling so-called ‘undruggable’ proteins that have previously proved elusive to traditional targeted approaches. By expanding the range of targetable proteins, it could potentially lead to new treatment options for a much wider variety of cancers – including hard-to-treat cancers where survival rates remain low.

Under Professor Rankovic’s visionary leadership, combined with the ICR’s impressive track record in drug discovery, we’re hugely optimistic that the Centre for Protein Degradation will make a substantial impact on our mission to defeat cancer.

**“Phenomenal potential”**

“There is no more exciting field in drug discovery than targeted protein degradation – it has phenomenal potential to improve cancer treatment and beyond,” said Professor Rankovic.

“With its long track record of drug discovery and its

recent progress in protein degradation research, I am tremendously excited to move to the ICR. We are also extremely fortunate to have the incredible support of David and Ruth Hill, whose generous donation will power our progress over the coming years.”

The new centre will benefit the entire ICR not only by driving drug discovery forwards but also by making protein degradation technologies available as research tools for understanding the underlying biology of cancer.



Dr Olivia Rossanese

**Dr Olivia Rossanese, Director of our Centre for Cancer Drug Discovery, added:**

“I am delighted to welcome Professor Zoran Rankovic to the ICR. His experience and knowledge will be instrumental in building up our Centre for Protein Degradation and will bring huge benefits to our wider drug discovery programme. The potential for groundbreaking advances in discovering new cancer drugs is tantalising – we’re extremely motivated to deliver for cancer patients.”

**“Becoming a cancer patient has given me extra perspective”**

**Professor Paul Workman, Harrap Professor of Pharmacology and Therapeutics at the ICR, was our Chief Executive and President from 2014 to 2021. During his leadership, he oversaw many scientific successes – including developing smarter, kinder radiotherapies. Now, after his own cancer diagnosis, he reflects on his experience as both scientist and patient.**



Professor Paul Workman

“When I was diagnosed with prostate cancer following routine blood testing for prostate-specific antigen (PSA), I was concerned but pragmatic: this was something to tackle practically and logically. Hearing that my cancer was localised, of intermediate risk and likely to have a favourable outcome was encouraging, and my experience in cancer research meant I had some insight and preparedness. I knew curative treatments were available and expected the side effects to be relatively mild, which has been the case so far.

“I did a year of active surveillance before deciding to treat the cancer. After recovering from preparative surgery, I underwent targeted external beam radiotherapy, delivered on the MR-Linac at The Royal Marsden. This state-of-the art machine – the first of its kind in the UK when it opened in 2016 – was facilitated by a collaboration with the ICR.

“The groundbreaking technology revolutionises treatment by precisely locating tumours with MRI, tailoring the shape of the X-ray beam to the tumour in real time, and accurately delivering the radiation dose. It even accounts for tumour movement – for example, as a patient breathes. This maximises the dose to the cancer and avoids harming healthy tissue. Overcoming my claustrophobia was challenging, but I did it by listening to Bach, conversing with the radiographers and peeking out the end of the MRI tube.

“I’ve worked in cancer research for more than 50 years and was part of the team that brought the MR-Linac here. Little did I know I would benefit from this amazing device.”



Becoming a cancer patient has made my relationship to the disease more personal, and I can better understand what cancer patients and their families are going through. With my treatment complete, I can crack on with my research and the rest of my life.



# Make your legacy life-changing

Legacy gifts have underpinned our discoveries in cancer research throughout our history – funding cutting-edge laboratory equipment, supporting PhD students and contributing to building our state-of-the-art Centre for Cancer Drug Discovery (pictured below).

By pledging a gift to us in your Will, you'll become part of the journey to defeat cancer.

You will be helping our scientists drive forward their life-changing work and tackle new challenges, safe in the knowledge of sustained funding.

Leaving a legacy means you are investing in the future of research – and a better future for people with cancer.

**Visit [icr.ac.uk/legacy](https://www.icr.ac.uk/legacy) to find out more.**



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