PCRC IMPACT REPORT 2018

PCRC BELIEVES IN A BETTER FUTURE FOR MEN WITH PROSTATE CANCER

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amrc
ASSOCIATION OF MEDICAL RESEARCH CHARITIES

WELCOME

‘Prostate Cancer Research Centre (PCRC) believes in a better future for men with prostate cancer. Continuing to fund outstanding research will make this future a reality.

Prostate Cancer Research Centre aims to stop men dying from prostate cancer. It started life in 1989 as The Covent Garden Cancer Research Trust, a charity providing seed-corn funding and equipment, and helping scientists gain grants from larger organisations. Over time, the charity grew and eventually was able to give more substantial research grants to pay for salaries and the costs of consumables.

The spread of cancerous cells around the body makes all the difference between success and failure in the treatment of prostate cancer. Because prostate cancer only kills in its later stages, Prostate Cancer Research Centre began to focus on finding better treatments for men with advanced, life-limiting prostate cancer. Reflecting this approach, our first major grant award aimed to identify the genetic changes that underpin the disease's life-threatening spread.

With a growing team, exciting plans and new scientific projects, the future is bright for increasing survival rates and improving quality of life for all men with prostate cancer.’

Oliver Kemp, Chief Executive Officer

‘Never underestimate the power of sitting in a doctor's room with someone you love who is fighting cancer and hearing “there is a new type of treatment available”’

Louise Milne, PCRC supporter

WHY AN IMPACT REPORT?

Prostate Cancer Research Centre will turn 30 in 2019.

This milestone is an opportunity to assess our achievements and consider our future. Cancer research is changing. Advances in medical science have made yesterday’s hopes today’s reality and the opportunities to make a difference through research is greater than ever before. By funding innovative research, PCRC is striving to seize these opportunities.

The non-profit sector is also changing. Charities face ever-increasing scrutiny. Donors, funders and beneficiaries want to see that organisations are working efficiently and effectively to achieve their goals.

By producing this impact report, we can communicate our impact and look for ways to improve — assessing our past achievements and present methods helps us to be even more effective in the future.

1989-2019 30 YEARS

WHAT WE DO

OUR VISION

A future without prostate cancer

OUR MISSION

- Increase survival rates
- Reduce morbidity
- Improve quality of life

… For men with prostate cancer.

OUR CHALLENGE

Prostate cancer is the most common male cancer in the UK

- 80% of men have cancer cells in their prostate by the age of 80
- 1 in 8 men will be diagnosed with prostate cancer in their lifetime
- 45,000 diagnoses per year
- 12,000 deaths per year
- 40% of men diagnosed have life-threatening prostate cancer*

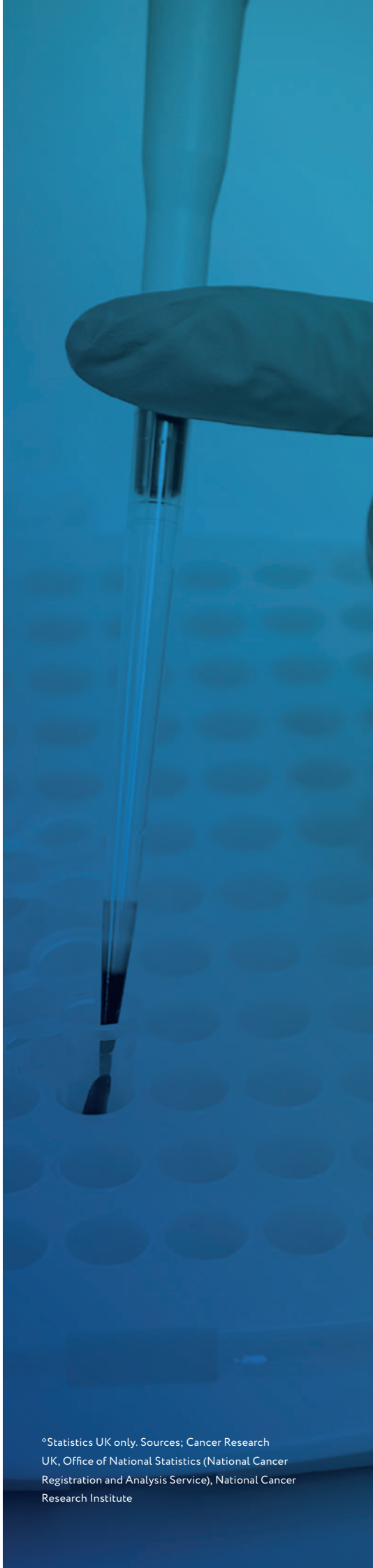
Prostate cancer is curable when it is localised within the prostate. It becomes incurable and dangerous after it has become advanced by spreading around the body. Every hour, a man is diagnosed with advanced prostate cancer.

75% of patients with advanced prostate cancer die from the disease within five years.

This is because treatments for advanced prostate cancer are inadequate. Orchiectomy, radiotherapy, chemotherapy and hormone treatment are often ineffective long term. Moreover, they have debilitating side effects such as impotence and incontinence.

As the UK's population continues to age, the need for better treatment for life-threatening prostate cancer will become greater than ever. By 2035, 77,000 men will be diagnosed with prostate cancer every year. It will be the most common cancer in the UK.

Finding more effective therapies for advanced prostate cancer is an economic, scientific and human imperative.



*Statistics UK only. Sources; Cancer Research UK, Office of National Statistics (National Cancer Registration and Analysis Service), National Cancer Research Institute

OUR STRATEGY

Investing in medical research is not a challenge. The challenge is investing in the right research.

We will achieve our mission by investing in innovative clinical research into new treatments.

Our mission is a marathon, not a sprint. **'It takes an average of 17 years to develop an idea into a publicly available medical product'** according to the Association of Medical Research Charities.

Ultimately, we do not know where the decisive breakthrough that results in a new therapy will come from. We do know that without forward-thinking research it will never come at all.

This means we still have work to do.

PCRC has to ensure our research continuously progresses towards better treatments for prostate cancer. To achieve this, we have identified three key goals.

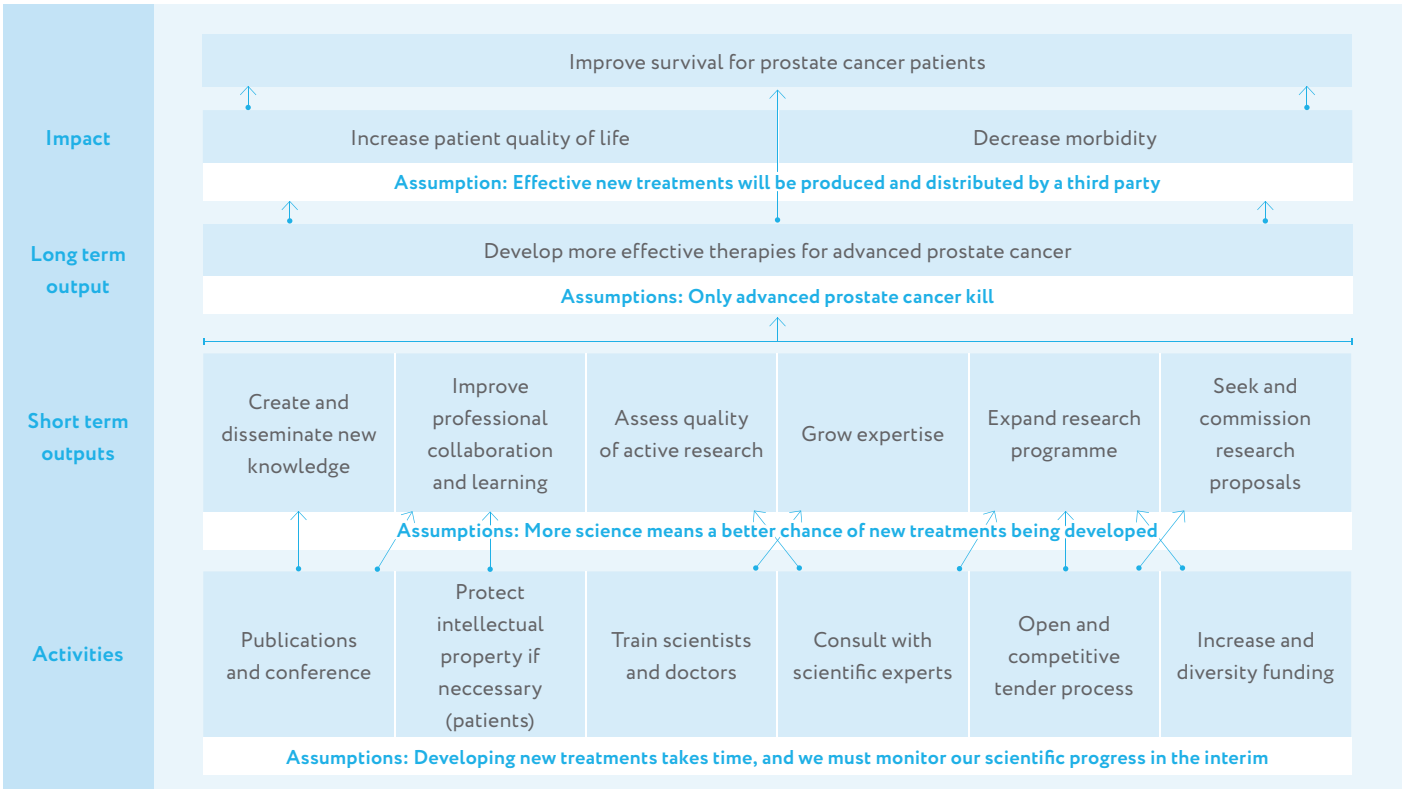
- **Diversify our income streams to fund as much research as possible**
- **Introduce an open and competitive grant making system to identify and fund the best research into prostate cancer treatments**
- **Evaluate our research through Researchfish (impact assessment platform), using our research progress indicators**

This will maximise the impact of every pound we spend, ensuring continued progress towards increased survival rates, reduced morbidity, and improved quality of life for men with prostate cancer.

Research Progress Indicators

Create and disseminate new knowledge, secure patents, collaborations and partnerships, further funding, commission new research, increase the quality & quantity of grant applications, new methods and models, grow expertise, earn positive peer reviews.

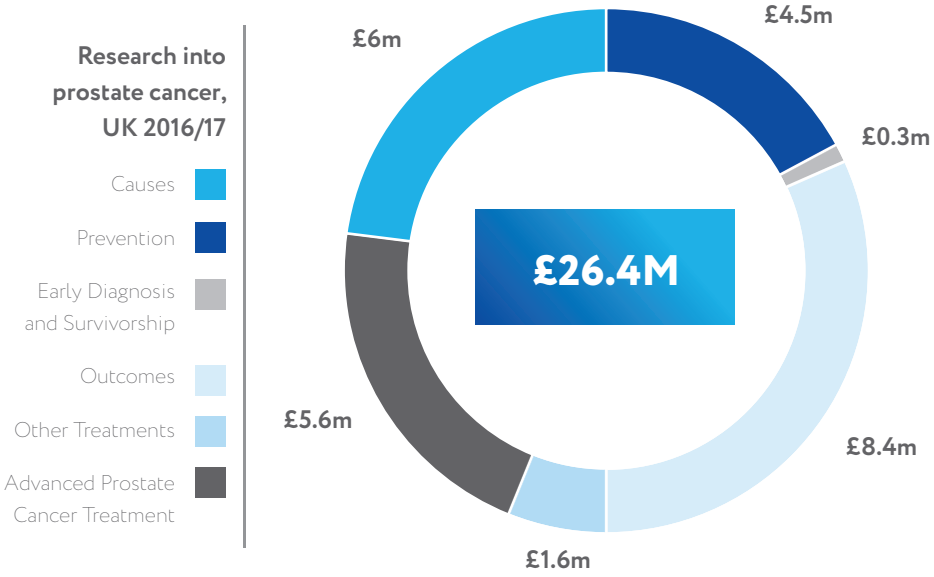
PCRC THEORY OF CHANGE



OUR RESEARCH

PCRC is the only UK charity solely dedicated to developing treatments for men with life-threatening prostate cancer. Our focus is on taking innovative research from the lab to clinical trials in men. This is essential to develop treatments that will save and improve lives.

Advanced, life-threatening prostate cancer causes 100% of prostate cancer deaths, yet it is underfunded. In 2016/17, the UK spent £26.4m on prostate cancer research. Just £6m was spent on treating the advanced stage of the disease. We want to resolve this imbalance. In 2018/19, PCRC will spend over £1m on research for the first time in a single year.



PCRC is proud to be a member of the Association of Medical Research Charities (AMRC). Our grant giving conforms to their high standards. Grants are peer-reviewed by our Scientific Advisory Committee and External Advisory Committee. These two groups consist of leading cancer scientists.

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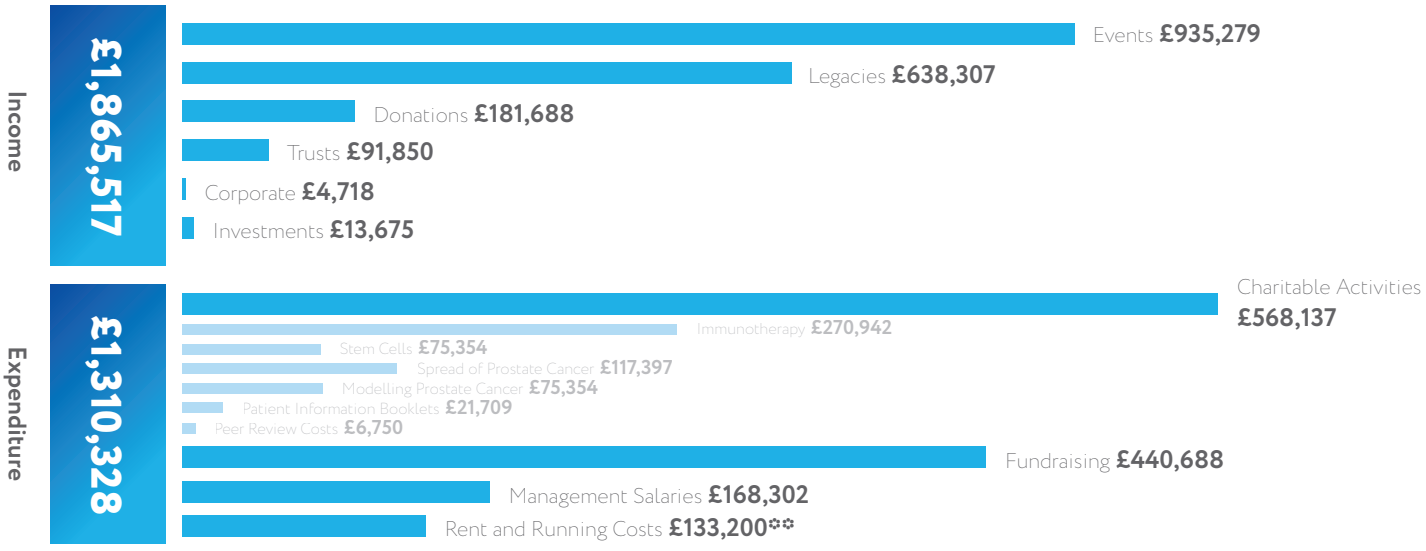
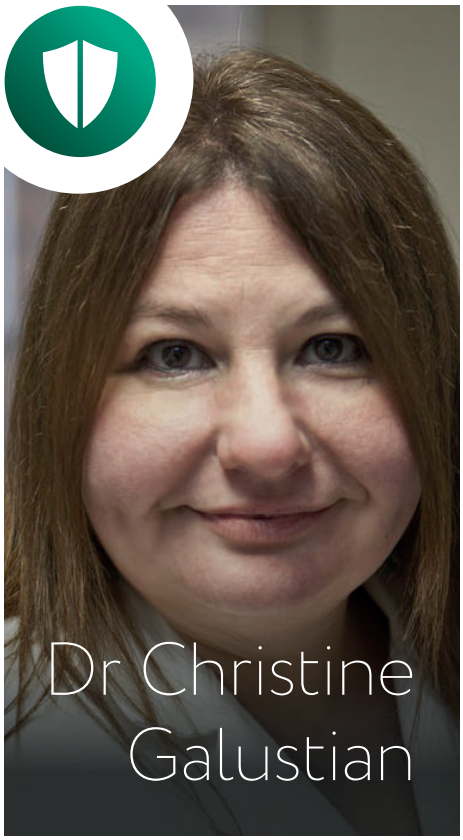
ASSOCIATION OF MEDICAL RESEARCH CHARITIES

FINANCIAL INFORMATION 2017/18*



* These amounts are taken from our latest balance sheets. Please refer to the charity commission for our latest audited accounts, which at the time of publication were for the 2016/17 financial year.

** In February 2018, we purchased office space which means we no longer need to rent. This will reduce running costs by over £100,000 per year.



IMMUNOTHERAPY

The team led by Dr Christine Galustian is working to harness the immune system's innate ability to fight cancer.

Dr Galustian is working on an innovative new form of immunotherapy. It is affordable, non-invasive, requires one injection, and its effects are permanent. Moreover, because immunotherapy harnesses the immune system, it would have negligible side effects. Succinctly, this treatment could revolutionise the treatment of advanced prostate cancer.

Cancerous cells disguise themselves to blend in with benign cells. Immunotherapy retrains the immune system to identify and attack cancerous cells. The only existing form of immunotherapy for prostate cancer works by taking the patient's blood, reprogramming his white blood cells to attack cancer cells, and transplanting these cells back into his bloodstream. This is expensive, lengthy and not provided by the NHS. Moreover, this treatment does not reduce symptoms or shrink tumours.

Dr Galustian's unique new treatment utilises a 'chemical tail' — an extra molecule — to anchor an immunotherapeutic protein called IL-15 at the precise location of prostate cancer tumours anywhere in the body. This treatment has reduced prostate cancer tumours in model organisms by 60% .

Dr Galustian anticipates the new treatment will be even more effective in humans. This is because the chemical tails are constructed using human cells, not cells from model organisms. Secondly, the team is now working with purified IL-15 which has a more powerful immunotherapeutic effect. The aim is to 'humanise' the new drug so it can be trialled in men.

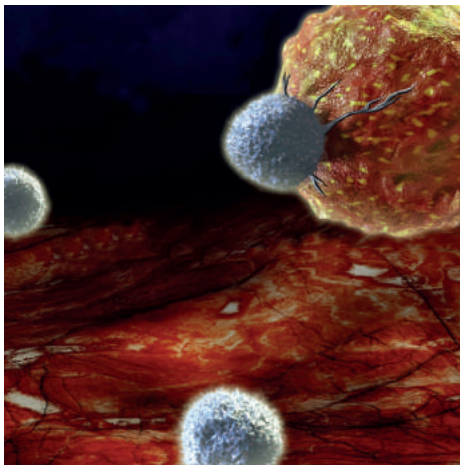


Image capturing the active battlefield where man's immune cells (shown in blue) and prostate cancer cells (orange) engage with one another

BEYOND THE LABORATORY

Further Funding

Targeting from the Medical Research Council and Cancer Research UK to accelerate research

Intellectual Property

Aiming to patent the purified, modified form of IL-15 in 2018/19

Collaborations and Partnerships

Commissioned DC Biosciences – a Scottish biotechnology company – to produce purified IL-15

Collaborated with scientists in Bangalore who are also working on immunotherapy

Dissemination

Presentations at the American Association for Cancer Research's 2015 and 2016 annual conferences

Spoke at the San Diego Cell Symposia and Cairns Prostate Cancer Conference in 2017

STEM CELLS

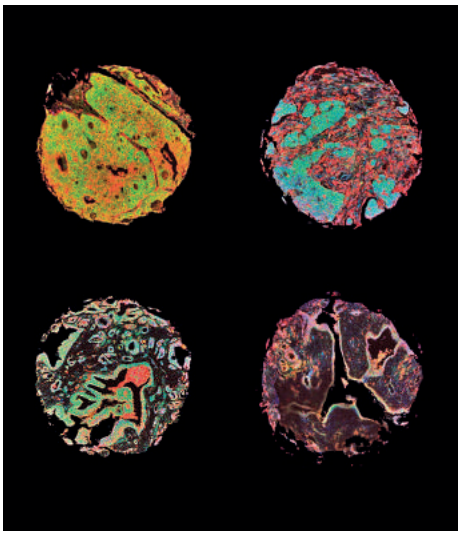
Repurposing off-the-shelf drugs to treat prostate cancer.

Stem cells drive the growth and spread of prostate cancer. Although scientists have known about cancer stem cells for over a decade, prostate cancer stem cells are difficult to identify and remain a novel target for therapies.

Dr Aamir Ahmed's research focuses upon a specific set of stem cells signalling mechanisms. After becoming one of the first research teams in the world to isolate prostatic stem cells, Dr Ahmed discovered that a signalling system called the Wnt pathway is overactive in prostate cancer stem cells. This pathway causes cancerous cells to multiply uncontrollably and subsequently spread around the body.

Dr Ahmed and his team are working to use existing drugs called Membrane Potential Regulating Compounds (MPRCs) to inhibit the spread of prostate cancer. Their preliminary studies have proven that MPRCs inhibit metastasis (spread of cancer cells). This is a major innovation. Nobody has ever used MPRCs to treat cancer. The team's next step is to further test different MPRCs, in-vivo and in-vitro (inside and outside of the body)', to identify which ones inhibit the growth and metastasis of prostate cancer most effectively; Dr Ahmed hopes to identify three MPRCs to test in clinical trials.

This research is promising because MPRCs are available to treat other illnesses – so we know they are safe, and they are very cheap. Dr Ahmed is collaborating with epidemiologists using large samples of health records to investigate if men who have taken MPRCs are less likely to develop prostate cancer. This wealth of data means repurposed MPRCs could be available for men with prostate cancer relatively fast.



Cancerous prostate stem cells with biomarkers highlighted within coloured areas, captured using confocal microscopy by Dr Aamir Ahmed

BEYOND THE LABORATORY

Collaborations and Partnerships

Collaboration with Danish biotechnology company Sophion to access cell imaging equipment: the joint teams have published two papers together

Collaboration with UCL's Professor Ashmore to access to a £1m live imaging machine at a minimal cost

Works with Universität Leipzig and the University of Edinburgh to test cell samples

Oncologists are exploring MPRCs for penile cancer treatment

Repurposed MPRCs have treated sarcoma cancers in cats

Further Funding

Leading a consortium of 25 clinicians, vets and epidemiologists who applied for Cancer Research UK's £5m catalyst award

Intellectual Property

Secured UK, EU and US patents for repurposing MPRCs to treat cancer

Dissemination

Hosted a conference titled 'Back to the Future: Repurposing Drugs for Cancer Therapy', London, July 2017

Presented research findings at the Biophysical Society 2017 annual conference in New Orleans

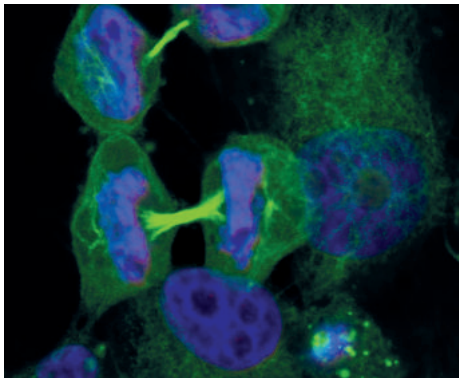
SPREAD OF PROSTATE CANCER

Exploring new therapies by conducting world-first research into cell division.

Dr Magali Williamson is decoding the deadly spread of prostate cancer. She discovered that an overexpression or mutation of protein PlexinB1 is common in cases of advanced prostate cancer. This was new knowledge. Nobody had implicated PlexinB1 in metastasis before. By doing so, Dr Williamson identified a new therapeutic target.

She is now investigating treatments for prostate cancer based around inhibiting PlexinB1's functions. She demonstrated that 'polyclonal' antibodies reduced metastasis by 'knocking-out' all of PlexinB1's functions. However, PlexinB1 has healthy and necessary functions which would be counterintuitive to inhibit. The aim is to develop 'monoclonal' antibodies which only target the functions of PlexinB1 relevant to metastasis. They will be more effective and have fewer side effects than polyclonal antibodies. To identify exactly which functions to target, Dr Williamson is examining thousands of prostate cancer tissue samples.

This research has huge potential. New antibodies that stop metastasis could contain early prostate cancer within the prostate and stop metastatic cancer spreading further.



MODELLING PROSTATE CANCER

As a result of Dr Williamson's work, PCRC launched another research project, Modelling Prostate Cancer. This research, at Cardiff University's European Cancer Stem Cell Research Institute, is creating sophisticated in-vivo models of advanced prostate cancer. This will accelerate drug development by enabling more effective testing of new treatments.

Prostate cancer tissue samples stained and viewed under a microscope by Dr Williamson

BEYOND THE LABORATORY

Collaborations and Partnerships

PCRC initially commissioned Modelling Prostate Cancer as a result of Dr Williamson's work

Secured cell samples from the American Department of Defense's Prostate Cancer Biorepository Network. Dr Williamson is working with Belgian biotechnology company Eurogentec to manufacture the antibodies

Dissemination

Spoke at conferences in Shanghai and Florida in 2016 and at the European Association of Urology's 2017 conference

Presented at the 2016 Richard Tiptaft Visiting Professorship meeting in London

Regularly lectures at KCL to professional peers and students

Intellectual Property

Patented treatments for cancer targeted at PlexinB1

OUR IMPACT

Research Progress Indicators quantify the impact of PCRC funded research and help assess progress towards delivering new treatments to men with prostate cancer.

Our current grants have achieved the following:

Creating and Disseminating New Knowledge

New findings stimulate further research, additional funding, and collaborations.

- **11** Conference presentations
- **25** Journal publications
- **1** Symposium hosted

Growing Expertise

PCRC creates future cancer experts by funding various research positions.

- **100+** Staff involved in past PCRC projects
- **20** Full-time research roles funded
- **21** Former researchers are practising urologists or oncologists

Intellectual Property

Patents encourage collaborations and further investment.

- **4** Approved patents
- **1** Pending patent

Collaborations and Partnerships

By working with others, scientists can harness new minds, methods and machines.

- **3** Partnerships with life-science companies
- **1** Collaborative research project commissioned
- **18** Publication partners

Developing Methods and Models

Innovative ways of conducting research accelerate progress.

- **1** New model of advanced prostate cancer

Further Funding

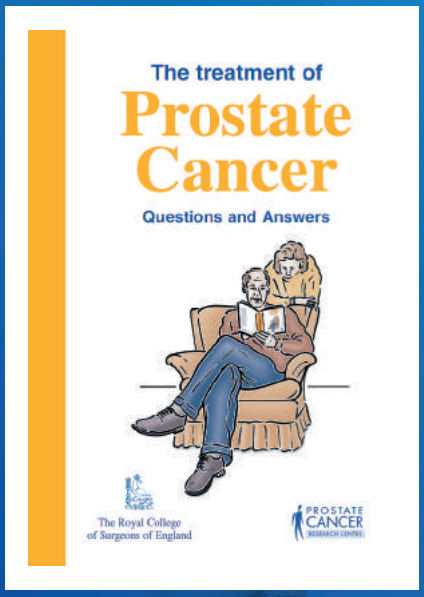
Helping the scientists we fund obtain new grants can catalyse their research and allow PCRC to support new projects.

Global Impact

- Conferences attended
- Collaborators and Partners
- Booklet used

ENGAGEMENT AND OUTREACH

We bring our supporters together in a multitude of ways to create a community of people who want a better life for men with prostate cancer.



Supporter Newsletter
Over 7,000 people read our print newsletter, Lifeline.

Lab Tours
We invite supporters to meet our scientists and visit their labs.

Information and Support
Since 1999, the NHS has given our Treating Prostate Cancer booklet to men diagnosed with the disease.

'It is wonderful to be able to give patients the booklet at diagnosis. This has helped the team greatly to support the patients and is an excellent source of information. Patients are extremely grateful!'

LB, Uro-Oncology Nurse Specialist

7,000
Lifeline readers

3,829
Facebook likes

3,656
Twitter followers

3,500
website visits per month

20,000+
patient information booklets distributed every year

500,000+
patient information booklets distributed since 1999

#TEAMPCRC 2017/18

PCRC connects a huge team of people who care about improving the lives of men with advanced prostate cancer, from staff to scientists, trustees to fundraisers and hundreds of men with prostate cancer themselves. Together, we are #TeamPCRC.

We are hugely thankful to everyone who has donated to or raised money for PCRC.

Because of your generosity, we can fund research.
Because of research, we can beat prostate cancer.

Snowdon 500

PCRC patron Matt Rannamets founded the Snowdon500 event in 2008. His vision was to have 500 people simultaneously climb Mount Snowdon in Wales, to raise money for research into prostate cancer. After a long battle with advanced prostate cancer, Matt sadly passed away in 2016. The Snowdon500 is his legacy.

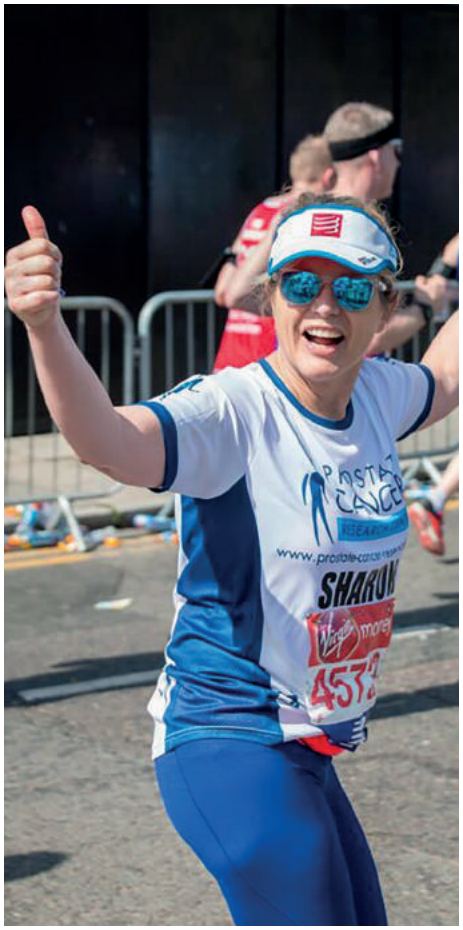
The Snowdon500 is PCRC's biggest and most successful event. Every year hundreds of people take on the challenge, which has since been expanded to include the 'Welsh Three Peaks' – the challenge of climbing Pen Y Fan, Cadair Idris and Snowdon within 48 hours.

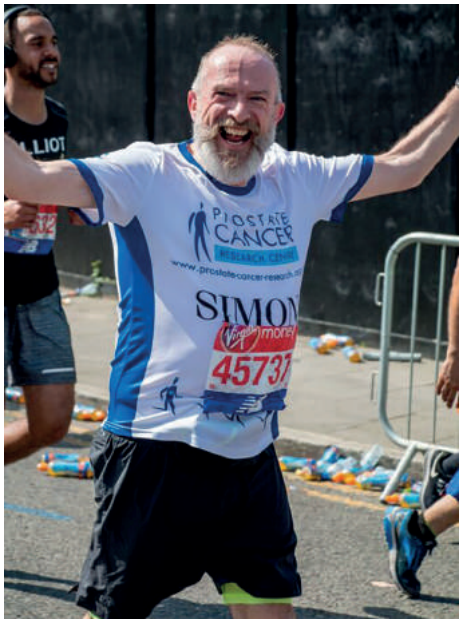
'It gave me the greatest of pleasure to fundraise for PCRC. Much better than plates with "80" on, or roses!'

Mrs Edna Sprague, who collected donations in lieu of 80th birthday presents

'I know how the disease affects men and their families. We saw what it did to my mum and the family when my dad was having the treatment and when he passed away. I want to raise money for research so that another family won't have to go through what we went through'

Aaron McSkimming, PCRC London Marathon runner





231 CYCLISTS

‘Before the lab tour my dad had been private about his diagnosis. He is now talking about treatments and research’

Polly Boardman, PCRC
London Marathon runner

154 TREKKERS

63 OTHER EVENTS

158 RUNNERS

£464,544 RAISED

Follow our Instagram @teampcrc for more fundraising pictures

MARTIN DALLISON: YOU ONLY LIVE TWICE

Martin Dallison was diagnosed with advanced prostate cancer in October 2014. Doctors gave him 18 months to live. Martin was 52.

"Being diagnosed so young was truly hideous, especially given that I had two daughters aged six and ten. I decided to do as much as I can in the time I have left. I've run from the police in the Dominican Republic, I've shot the rapids with my daughters, paraglided off a mountain, crossed the Namibian desert, evaded polar bears in Svalbard and hippos and crocodiles on the Zambezi river... I had medical consultations at New York's world-famous Memorial Sloan Kettering Cancer Center and with a practitioner of herbal medicine in Turkey."

Martin conquered Mont Blanc, Kilimanjaro, the Matterhorn, Khan Tengri, and trekked 100 km through the Alps. These astounding feats raised over £13,500 for PCRC. He is a close friend of PCRC scientist Dr Aamir Ahmed and became the patient representative for Dr Ahmed's research consortium. Martin's story epitomises how PCRC brings together men with prostate cancer, fundraisers and scientists.

OUR FUTURE

As Prostate Cancer Research Centre nears its 30th birthday, the possibilities of new treatments for life-threatening prostate cancer are greater than ever.

We want our future to be a better future for men with advanced prostate cancer. A future for men and their families. To continue to make this vision into reality, PCRC has the following aims for 2018–19.

RESEARCH

- **Continue Funding Outstanding Research** – PCRC is committed to funding our four current projects to completion
- **Competitive Grant-Making Process** – Actively seek more research proposals than ever before to unearth exciting new clinical research into life-threatening prostate cancer
- **Fund More Research** – Fund new research projects identified through the open grant process. This means more scientists asking questions and developing potential treatments
- **Monitoring and Evaluation** – Use the impact measurement tool Researchfish to track the outcomes of our research and monitor progress towards our mission more stringently than ever before

researchfish®

FUNDRAISING

- **Brand Identity** – Launch a new website, refresh branding, and improve all forms of communication to improve awareness of PCRC's work
- **Diversify Income** – #TeamPCRC is the biggest it has ever been. We are also exploring ways to expand our other income streams to generate additional, unrestricted funds
- **Future 5** – Facilitate supporter engagement with new research projects through the 'Future 5' campaign
- **Race For Science** – A new, immersive science-based event held in Cambridge which will engage a new group of individuals and organisations with PCRC

With continued funding, continued innovation and continued research, we will increase survival rates, reduce morbidity and increase quality of life for men with life-threatening prostate cancer. We can build a future for men and their families.

WITH THANKS TO

Trustees

Mr Geoffrey Bowman
Professor Prokar Dasgupta
Mr Matthew Ellis
Sir Robert Francis
Mr Shaun Grady
Mrs Michele Hunter
Mr Christopher Miller
Mr Ben Monro-Davies
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