

Cancer Network Newsletter

February - March 2019

 University of
BRISTOL
Elizabeth Blackwell Institute
for Health Research

Office for National Statistics recognition



Further to the item in the last issue of the Cancer Research Network Newsletter—in which we announced

that the Cluster Randomised Trial of PSA Testing for Prostate Cancer (CAP) Trial was nominated for the Office for National Statistics (ONS) Research Excellence Awards 2018—we are

delighted to confirm that CAP won the panel award!

The panel highlighted the impact CAP has

already had; the diverse dissemination of these results; the collaborative working practices; and the innovative methodology developed. Dr [Emma Turner](#) presented the work *Does screening for prostate cancer using the 'PSA' blood test save lives? The CAP Randomised Trial* at the ONS Data Capability 2018 meeting where she was presented with the award.



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[@BristolCancer](#)



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EVENTS

Data Visualisation Working Group

21 February 2019, 12.30 - 13.30, Room G1, 7 Priory Road, BS8 1TZ

The role of heme in biology – catalysis, structure and biological regulation

21 February 2019, 13.00 - 14.00, Prof Emma Raven (University of Bristol), C42 Biomedical Sciences Building

Stacking the odds against cancer - obesity, diet and physical activity - beyond the stats

21 February 2019, 17.45 - 19.00, Prof Annie S Anderson (University of Dundee), Room 2D1 Priory Road Complex, Priory Road, Bristol BS8 1TU

Community Event: Academic Journeys

22 February 2019, 14.00 - 16.00, Keynote: Prof Jeremy Tavaré (Dean, Faculty of Life Sciences), Room 4.10, School of Education, 35 Berkeley Square

Open Presentation from EPSRC Maths Theme

25 February 2019, 10.00 - 11.00, EPSRC Maths team, SM2 Maths Building

EPSRC Maths Theme Early Career Session

25 February 2019, 14.00 - 15.00, EPSRC Maths team, 4th Floor Seminar Room, Howard House

EPSRC Maths Theme Portfolio Discussions

25 February 2019, 15.00 - 16.00, EPSRC Maths team, venue TBC

Introduction to High Performance Computing

26 February 2019, 10.00 - 12.00, W414, School of Chemistry, Cantocks Close, Bristol, BS8 1TS

ICEP Journal Club

27 February 2019, 11.30 - 12.30, Seminar room OS6, Oakfield House

Public Engagement drop-in session

28 February 2019, 15.00 - 17.00, One Cathedral Square, Bristol BS1 5DL

Introduction to Involving Patients and the Public in Research

5 March 2019, 10.00 - 12.00, Bristol (location to be confirmed)

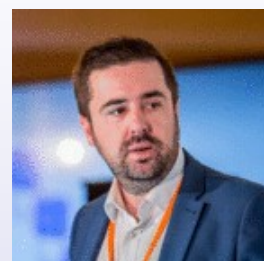
GW4 Knowledge Exchange Framework (KEF) Workshop

5 March 2019, 10.30 - 13.30, Hamish McAlpine (Head of KE Data and Evidence) and Charlie Hamley-Bennett (Senior Policy Adviser for Knowledge Exchange), Research England, The Ensemble Room, The Edge, University of Bath, Bath, BA2 7AY



EPSRC

Engineering and Physical Sciences
Research Council



From top:

Prof Emma Raven,
Prof Annie Anderson,
Prof Jeremy Tavaré,
Hamish McAlpine

EVENTS CON'T

Statistics Clinic

6 March 2019, 14.00 - 15.30, SM3 Mathematics Building

32nd Euro Congress on Cancer Science and Therapy

7–8 March 2019, Barcelona, Spain

UK CLL Forum Annual Scientific Day: Informing treatment and tracking resistance...

7 March 2019, 10.00 - 17.15, Cavendish Conference Centre, 22 Duchess Mews, London W1G 9DT

Engendering Academic Ambition

7 March 2019, 12.30 - 13.30, Prof Judith Squires (University of Bristol), Helen Wodehouse Building, 35 Berkeley Square, Bristol, BS8 1JA

Cell Plasticity: Learning from tissue morphogenesis to tackle tumour progression

7 March 2019, 13.00 - 14.00, Dr Kyra Campbell (University of Sheffield), C42 Biomedical Sciences Building

Biological therapies in cancer - towards cancer cures

7 March 2019, 14.30 - 19.00, Prof Charles Swanton (The Francis Crick Institute), The Francis Crick Institute, London

Invitation to meet the University's Global Challenges Chairs

11 March 2019, 13.00 - 14.30, Prof Susan Parnell, Professor Leon Tikly, Professor Guy Howard (University of Bristol), Reception room, Wills Memorial Building, Queens Road, BS8 1RJ

Public Engagement drop-in session

12 March 2019, 9.30 - 11.30, PGR Hub, Senate House, Tyndall Avenue, BS8 1TH

CMM seminar

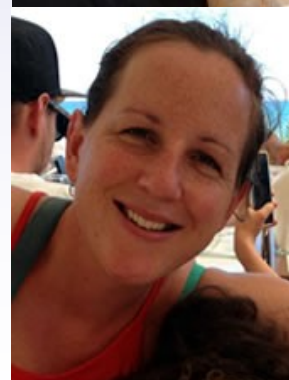
12 March 2019, 13.00 - 14.00, Dr Karen Lui (Kings College London), C42 Biomedical Sciences Building

Biomedical Sciences Film club

12 March 2019, 18.15 - 20.00, E29 Biomedical Sciences Building

UKMF Scientific Workshop Myeloma Patient Journey – Early Diagnosis to Resistant Disease

13 March 2019, 9.00 - 16.00, Cavendish Conference Centre, 22 Duchess Mews, London W1G 9DT



From top:
Prof Judith Squires,
Dr Kyra Campbell,
Prof Leon Tikly,
Dr Karen Lui

NEWS

Sleeping habits and breast cancer

Dr [Rebecca Richmond](#) presented a poster at the National Cancer Research Institute which attracted a large amount of media interest, with Rebecca featuring in various TV and radio appearances (the images show Rebecca being interviewed by Sky news and giving an interview on BBC Radio 4).

The study was investigating whether the way people sleep can contribute to the development



of breast cancer. This study used genetic data from women enrolled in the UK Biobank and Breast Cancer Association Consortium (BCAC) to apply a Mendelian randomization approach. Preliminary findings showed that women who

are 'larks', functioning better at the beginning of the day than the end, have a lower risk of breast cancer.

Read the University press release ([Women who are 'larks' have a lower](#)



[risk of developing breast cancer](#)), or read the Sky News report ([Women chirpiest in the morning less likely to develop breast cancer - study](#)). Scientists at the University of Bristol find those with a morning preference are 40% to 48% less at risk of breast cancer).

External engagements: Part 1

A group of Integrative Cancer Epidemiology Programme (ICEP) researchers attended the **National Cancer Research Institute (NCRI) Conference** in Glasgow, 4 - 6 Nov 2018. They presented 6 posters and gave 3 oral presentations, including Prof [Richard Martin](#) presenting *Population cancer screening: are we getting it right?* and *Mining genomic data to inform cancer prevention and treatment strategies*. PhD student [Meda Sandu](#) won a prize for best abstract for her poster *In-*

vestigating the effects of dietary and physical activity interventions on the metabolome of men with prostate cancer: The PREVENT randomised controlled trial.

ICEP also attended the **Cancer Prevention and Nutrition Conference** at the Francis Crick Institute in London on 3 - 4 Dec 2018. This conference, jointly organised by Cancer Research UK and Ludwig Cancer Research, aimed to bring together leaders in the fields of cancer preven-

tion and nutrition with the goal of promoting conversation about the most effective ways of advancing research in these disciplines. Caroline Relton, Richard Martin, and Nic Timpson discussed various methodological approaches that are being employed within ICEP to interrogate causal pathways in cancer epidemiology. The conference ended with an extended discussion on how insights gained from the conference can be used to facilitate continued progress in these areas of research.

Can we eliminate human papilloma virus?

Researchers from the Centre for Academic Primary Care and Population Health Sciences, Bristol Medical School, with colleagues from Queens University Belfast, Ulster University, and Southampton University, have published an editorial in the [British Journal of General Practice](#) (BJGP) in response to [Public Health England's](#) (PHE) recommendation to roll out a targeted Human papillomavirus (HPV) vaccination programme for men who have sex with men (MSM) through genitourinary medicine (GUM) and HIV clinics across England.

The editorial argues that although this announcement is a positive step, it would be more

effective to follow more recent recommendations to introduce gender neutral HPV vaccination to achieve total elimination of HPV, rather than a reduction. The PHE proposal means MSM who do not attend sexual health clinics, unvaccinated women and heterosexual men who have sex abroad would continue to suffer from HPV-related genital warts and cancers.

HPV is one of the mostly common sexually transmitted infections globally. Most people who contract HPV have no symptoms. Certain HPV subtypes are associated with anogenital and oral cancers in men and women, and many strains of the virus cause genital

warts. The [incidence of HPV-related cancers](#), particularly oropharyngeal cancers, has risen in recent decades. Preventive measures to reduce the burden of HPV-related diseases include safe sex practices, regular cervical smears for women, and HPV vaccination programmes. However, the optimal approach for the reduction and prevention of HPV-related diseases is yet to be determined.

Merriel S *et al.* (2018). [Jabs for the boys: time to deliver on HPV vaccination recommendations](#). *British Journal of General Practice*. 68(674), pp406-407.

Human papilloma virus: 10 years of vaccination

Prof [Adam Finn](#) presented at an anniversary event in Portugal celebrating 10 years of the integration of the human papilloma virus (HPV) vaccine into the country's National Vaccination Program. The event, held in Lisbon on 5 November 2018, looked at how successful the programme has been in Europe and challenges for the future.

The commemoration was an important date for Public Health as it celebrated the 10th

anniversary of the first vaccine specifically aimed at combating cancer diseases, namely cervical cancer. Considering the relevance of HPV vaccination and the fact that adherence to it, in Portugal, is an example of worldwide success, it is important to continue to advocate for the vaccine. The event was attended by Portugal's Minister of

Health and the Secretary of State for Health.

[Watch Adam's presentation](#)



Show and Tell events

The latest Cancer Show & Tell event held on 9 January 2019 hosted 87 people (in a room meant for 60!) and the programme consisted of talks by nine researchers including [Tim Robinson](#) and [James Yarmolinsky](#) (Mendelian randomisation analysis of circulating adipokines and C-reactive proteins on breast cancer risk), [Kaitlin Wade](#) and [Lucy](#)

[McGowan](#) (the latter is pictured) (applications of MR in analysing the human gut microbiome, and in uncovering cell-specific inflammatory drivers of human disease), [Christoph Wülfing](#) (the suppression of the function of cytotoxic T-cells by tumours), [Grace Edmunds](#) (targeting adenosine and TIM3 to improve anti-tumour immunity),

and [Maaike Van Den Berg](#) (who uses live imaging to study cancer-related inflammation in zebrafish). The afternoon finished with a presentation from [Helen Winter](#) and [Christopher Herbert](#) (both UH Bristol) about the rapid progress of immunotherapy in melanoma, as well as projected future research in this area. Thanks are extended to [Emma Vincent](#) for pulling it together.

The **next event** is scheduled for **17 June 2019**; **register now / submit an abstract**



Sleep characteristics and breast cancer

Following on the story from page 4, a study of several hundred thousand women, which was investigating whether the way people sleep can contribute to the development of breast cancer, also found some evidence for a causal link between sleeping for longer and breast cancer. Dr [Rebecca Richmond](#) looked at data from 180,215 women enrolled with the [UK Biobank project](#), and 228,951 women who had been part of a genome-wide association study of breast cancer conducted by the international Breast Cancer Association Consortium (BCAC).

Using genetic variants associated with people's preference for morning or evening, sleep duration and insomnia, which had previously been identified by three recent UK Biobank genome-wide association studies, the team investigated whether these sleep traits have a causal contribution to the risk of developing breast cancer. Mendelian randomisation analysis found that a preference for mornings reduced the risk of breast cancer by 40% compared with being an evening type. It also found that women who slept longer than the recommended seven to eight hours had a 20% increased risk of the disease per

additional hour slept. Analysis of data obtained from the UK Biobank women found similar results; morning preference reduced the risk of breast cancer by 48%. Analysis of these data revealed that approximately one less person per 100 will develop breast cancer if they have a morning preference compared to people who have an evening preference.

[Richmond R et al. \(2018\). *Investigating causal relationships between sleep characteristics and risk of breast cancer: a Mendelian randomization study*. Presented at the NCRI Cancer Conference, November 2018.](#)

Funding successes

To Dr [Eileen Sutton](#) (Bristol Medical School, Population Health Sciences) from the **National Institute for Health Research (NIHR)** - Programme Grant for Applied Research (PGfAR), for *Sustained exercise TrAining for Men with prostate caNcer on Androgen Deprivation Therapy (ADT): the STAMINA Extension programme*.

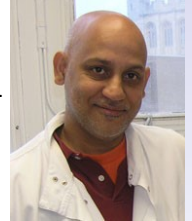


To Prof [Nicholas Timpson](#) and

PhD student [Tom Dudding](#) (both Bristol Medical School, Population Health Sciences) from the **World Cancer Research Fund**, £57,351 for *Assessing direction and causality in the association between BMI and head and neck cancer survival: A pilot study*.

In receipt of a **Translational Acceleration and Knowledge Transfer (TRACK)** award funded by the **Wellcome Trust** and administered by the Elizabeth Blackwell Institute, Dr [Karim](#)

[Malek](#) (Cellular & Molecular Medicine) with Co-Investigators [Alexander Greenhough](#) & [Ann Williams](#), for *Targeting a hypoxia inducible protein for novel cancer therapies*.



[Tom Wilson](#) (Cellular & Molecular Medicine) was awarded an **EBI clinical primer** for *Roles of Rho GTPase kinase targets in prostate cancer invasion*.

Fluorescent markers in brain cancer

A chemical that highlights tumour cells has been used by surgeons to help spot and safely remove brain cancer in a trial presented by Dr [Kathreena Kurian](#) at the 2018 NCRI Cancer Conference. The research was carried out with patients who had suspected glioma, treatment for which usually involves surgery. However, it can be challenging for surgeons to identify all of the cancer cells while avoiding healthy brain tissue.

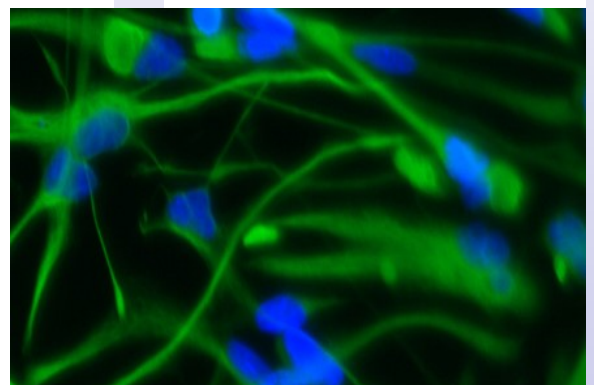
Gliomas are difficult to treat with survival times often measured in months rather than years. Many patients are treated with surgery and the aim is to safely remove as much of the cancer as possi-

ble. Once a tumour is removed, it is passed on for examination to see if the cells are 'high-grade' fast growing cells, or 'low-grade' slower growing cells, which will help plan further treatment. The team wanted to see if using a fluorescent marker could help surgeons objectively identify high-grade tumour cells during surgery, allowing them to remove as much cancer as possible while leaving normal brain tissue intact. They used 5-aminolevulinic acid, or 5-ALA, which glows pink when a light is shone on it. Previous research shows that, when consumed, 5-

ALA accumulates in fast growing cancer cells, thus it can act as a fluorescent marker of high-grade cells.

[View the BBC news item](#)

[Kurian K et al. \(2018\). *Improving the intra-operative diagnosis of high-grade glioma using a fluorescence biomarker – result of the UK NCRI GALA-BIDD study*](#). Presented at the 2018 NCRI Cancer Conference, November 2018.

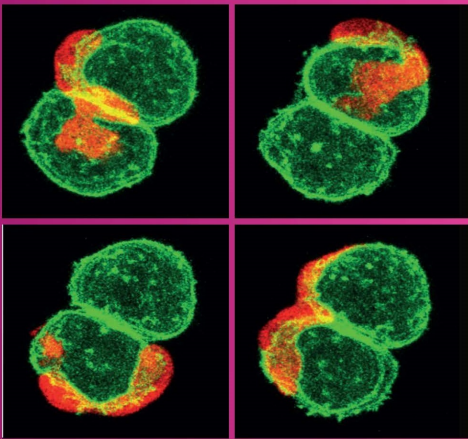


New Bristol Cancer booklet



Bristol Cancer

a multidisciplinary research community dedicated to finding new breakthroughs against cancer



The Bristol Cancer Research Network is delighted to announce the publication of our first information booklet on the major cancer research projects being undertaken at the University of Bristol. Thanks to support from the University Hospitals Bristol NHS Foundation Trust's charity, [Above & Beyond](#), and the North Bristol NHS Trust's [Southmead Hospital Charity](#), these booklets will be available to clini-

cians and patients in oncology units at both centres. Thanks are extended to the Principal Investigators who contributed (both textually and financially) to its creation, and to the Faculties of [Health Sciences](#) and [Life Sciences](#) for helping bring the creation to print.

You are able to [download the full booklet](#) from our webpage, or [relevant sections](#) from our research pages. If you would like printed copies, please email [Catherine Brown](#) with the number required and a postal address.

Recognising World Cancer Day

The Elizabeth Blackwell Institute for Health Research [highlighted the work](#) of the Bristol Cancer Network this [World Cancer Day](#), 4 February 2019.

The Network plays a strong role in facilitating the interaction between scientists and clinicians, and our coherent cross-disciplinary community is the ideal vehicle for new ideas on how to understand and treat cancer better. Hosting such events as our Show and Tell series (see page 6) has helped bring together a wide range of disciplines, from engineers modelling delivery of nanoparticle therapeutics through to basic scientists im-

aging cancer immunity in model organisms and onto clinicians treating real patients with cancer. Most cancer institutes don't offer this breadth of approach and the opportunities we afford our community to gather and interact will provide us with novel insights for early detection and curing of cancer.

World Cancer Day is about creating a future without cancer; the target: to reduce premature cancer deaths and deaths from non-communicable diseases by 25% by 2025. They identify 'high quality data and research' and 'early detec-

tion and diagnosis' as two of four campaign pillars to help achieve this goal. Prevention and early detection for cancer are emphasised in the [NHS Long Term Plan](#); this is a strong area of research here at Bristol thanks to the 5-year [Integrative Cancer Epidemiology Programme \(ICEP\)](#), funded by Cancer Research UK.



Join us on 4 February

Best Doctoral Research Theses 2017/18

An annual prize is made for the thesis considered to be the best within each faculty and for which a degree has been awarded in the relevant academic year. Internal and external examiners were invited to nominate suitable theses and one winner was selected from each faculty by members of the Research Degrees Exam Board. The successful graduates each receive a certificate of commendation and a cheque for £500. Amongst this year's prize winners was -

Faculty of Health Sciences: Hanna Zielinska

Hyperglycaemia and fibronectin: the criminal partnership during breast cancer progression. Supervisor: Dr Claire Perks

During her studies Hanna made the seminal observation that the combined exposure of hyperglycaemia and fibronectin induced epithelial breast cancer cells to undergo epithelial to mesenchymal transition (EMT) that was associated with a more invasive and gly-

colytic phenotype. She also delineated the pathway through which this occurred, which could open up new ways of treating this sub-set of breast cancer patients. The quality of Hanna's PhD is highlighted by three first-author publications including papers published in *Endocrine-Related Cancer* (2016) and *Cancer Letters* (2018). Hanna is currently writing the final manuscript from the work in her thesis.

[View the full list of winners](#)

External engagements: Part 2

On 2 - 4 October 2018 Dr [Rebecca Richmond](#) attended the **Early Detection of Cancer Conference** at the OHSU Knight Cancer Institute in Portland, Oregon. This annual conference is co-ordinated by Cancer Research UK in partnership with the Knight Cancer Institute, a leader in precision medicine, and the Canary Centre at Stanford, dedicated to cancer early detection. This trans-Atlantic, multi-disciplinary conference brought together over 200 world-leading scientists and stimulated discussions around the signatures of early and pre-cancer, population risk stratification, early disease models, data science and nov-

el technology for improving early detection, with the ultimate aims of identifying lethal cancers and treating patients more effectively. One key theme borne out of discussions at the conference was the need for research supported by all "three pillars" of early detection: cohorts, tools and models. By harnessing and integrating expertise in these areas among members of the [Integrative Cancer Epidemiology Programme](#) (ICEP) and collaborators hope to conduct more work in this field in the future.

Dr [Mattias Johansson](#) attended the 54th Annual Meeting of the European Association for the Study of Diabetes (EASD)

in Berlin, 1 - 5 October 2018, where he presented his work on pancreatic and kidney cancer.

Dr [Sarah Lewis](#) (pictured) travelled to Brazil at the start of October 2018 to help deliver a three-day course on Mendelian randomisation to PhD students and postdocs at the University of São Paulo. Sarah also gave an invited seminar entitled *Investigating diet and prostate cancer using a Mendelian randomisation approach*.



Circulating metabolites and prostate cancer risk

Previous prospective studies assessing the relationship between circulating concentrations of vitamin D and prostate cancer risk have shown inconclusive results, particularly for risk of aggressive disease. In this study, the team examined the association between pre-diagnostic concentrations of 25-hydroxyvitamin D (25(OH)D) and 1,25(OH)2D and the risk of prostate cancer overall and by tumour characteristics. Principal investigators of 19 prospective studies provided individual participant data on circulating 25(OH)D and 1,25(OH)2D for

up to 13,462 men with incident prostate cancer and 20,261 control participants. 25(OH)D concentration was positively associated with risk for total prostate cancer; however, this association varied by disease aggressiveness. Higher circulating 25(OH)D was associated with a higher risk of non-aggressive disease but not with aggressive disease (defined as stage 4, metastases, or prostate cancer death). 1,25(OH)2D concentration was not associated with risk for prostate cancer overall or by tumour characteristics. The absence of an

association of vitamin D with aggressive disease does not support the hypothesis that vitamin D deficiency increases prostate cancer risk. Rather, the association of high circulating 25(OH)D concentration with a higher risk of non-aggressive prostate cancer may be influenced by detection bias.

Travis RC *et al.* (2018). [A collaborative analysis of individual participant data from 19 prospective studies assesses circulating vitamin D and prostate cancer risk.](#) *Cancer Research*. Published online 13 November 2018.

Meet the 2018-19 Vice-Chancellor's Fellows (VCFs)

Bernadette Carroll

Oncogene-dependent expansion of lysosomal pathways supports cell growth



Ageing and age-related diseases such as cancer are characterised by gross changes in cell growth. In

healthy cells, a dynamic balance between biosynthesis, degradation and recycling controls growth. In contrast, activation of specific oncogenes drives a re-equilibrium between these processes which increases growth and can lead to cancer.

Her project will investigate

exactly how oncogene activation changes biosynthesis and recycling. There will be a special focus on the lysosome, the degradative compartment of the cell which plays a crucial role in balancing mTORC1 and autophagy. By understanding changes induced by harmful oncogenes, we can kill these cells and improve the human healthy lifespan.

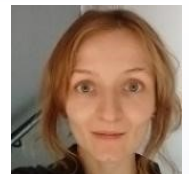
Bethan Lloyd-Lewis

Deciphering the contribution of development and age to breast cancer aetiology

The project seeks to understand the dynamic pathways that regulate breast stem cell fate during development, and

how perturbation of normal developmental programmes can lead to breast

cancer. While the risk of developing breast cancer varies throughout a woman's lifetime, studies suggest that pubertal breast development represents a crucial window in tumourigenic susceptibility. By combining techniques in genetic epidemiology and stem cell biology, she aims to delineate the molecular and cellular mechanisms underlying the susceptibility of the pubertal breast to cancer risk modulation. [View the full list of VCFs](#)



Future technology for contactless medical procedures

Advancements in acoustic tweezers from Prof Bruce Drinkwater (Department of Mechanical Engineering) and his colleague Dr Asier Marzo (Universidad Publica De Navarra, Spain) are driving the technology towards this futuristic-sounding reality.

Sound exerts a small acoustic force and by turning up the volume of ultrasonic waves, too high pitched for humans to hear, scientists create a sound field strong

enough to move small objects. The team have enabled the efficient generation of sound fields complex enough to trap multiple objects at the target locations by applying a novel algorithm that controls an ar-



ray of 256 small loudspeakers, which will allow the creation of intricate, tweezer-like, acoustic fields. Ultrasound is routinely used in pregnancy scans and kidney stone treatment as it can safely and non-invasively penetrate biological tissue.

Marzo A and Drinkwater BW (2018). [Holographic Acoustic Tweezers](#). *Proceedings of the National Academy of Sciences*. Published online 17 December 2018.

2019 Hooke Medal of the British Society of Cell Biology

[Eugenia Piddini](#), Professor of Cell Biology and Wellcome Trust Senior Research Fellow, has been awarded the [2019 Hooke Medal](#) in recognition of her outstanding contribution to cell biology and as an emerging leader in this field.

Her lab studies cell competition, resulting in fit cells (winners) being able to colonise tissues as they kill and replace less-fit cells (losers). Her group is exploring how cell competition could be used for therapeutic strategies in regenerative medicine and cancer. The lab's goal is to understand the impact of cell competition on tissues and the mechanisms that cells use to compete. To achieve this the

group combine two complementary approaches: studies in *Drosophila* to capture the complexity of these interactions *in vivo*, and mammalian cell culture to follow the dynamics of cell competition, including by live imaging. Recent work using the adult fly intestine showed that in adult homeostatic tissues, cells compete, and healthy cells eliminate sub-fit cells by apoptosis. The lab has also found that cell

competition leads to healthy tissue expansion, by promoting stem cell proliferation and increased symmetric self-renewal. Her discovery of mechanical cell competition – a new mode of competition where cell killing is triggered by mechanical compression – is considered a breakthrough in the field. [Read more](#)



Partnerships and strategic relationships

As part of the University's commitment to increase support for collaborative working, partnerships and engagement, the Research and Enterprise Development (RED) division is bringing together Partnerships and Programmes into a single team.

[This team](#) will combine the current Programme Management group with the recently formed Partnerships and Alliances team to provide integrated support for the University's major Research and Enterprise programmes and partnerships. The single team

is part of a continuous improvement activity led by the Pro Vice-Chancellor for Research and Enterprise and the Director of Strategic Alliances. In addition to providing greater visibility within the institution the team will provide more comprehensive support for opportunities such as the Industrial Strategy Challenge Fund (ISCF) and Temple Quarter Enterprise Campus (TQEC) which necessarily involve many of the University's strategic partners. The revised team will continue to provide support for all major research and innovation-related pro-

grammes at Bristol as well as partner relationship management in support of these. It will also provide support for all forms of external engager/business enquiry, support for the development and scaling up of major partnerships, and key account management for the University's portfolio of strategic relationships.

[Alliances and partnerships portal](#) (sign-in required)

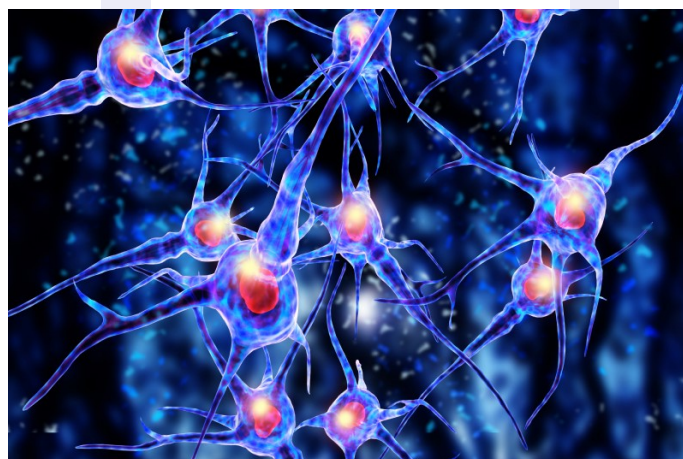


Life sciences is a sector that operates at the cutting-edge of technological developments and on December 7th 2018 the second Life Sciences Sector Deal was announced. The Great West region, including the University of Bristol, was recognised in the report for its flourishing life science industry, due to its collaboration between more established technology and digital businesses.

The deal announced a £1.3bn industry-government investment in the UK economy and a new partner-

ship driving early disease detection, with global biopharmaceutical company UCB investing around £1bn in research and development, including in a new state-of-the-art facility.

This builds on the government's [Life Sciences Industrial](#)



Life Sciences Sector Deal

[Strategy](#) published in December 2017, which recognised the importance of regional clusters and followed intense collaboration between life sciences organisations and the [GW4 Alliance](#), and GW4's regional strengths such as convergence with AI, high performance computing, quantum technologies and world-leading academic expertise. Places continues to be one of five key commitments within the deal, which this time round has a strong focus on technology and digital innovation.

[Read more](#)

Turing Fellows announced

The University of Bristol is partnered with The Alan Turing Institute, the UK's national institute for data science and artificial intelligence. The Jean Golding Institute acts as the main point of contact between the university and The Alan Turing Institute.

Thirty academics from the University of Bristol have been awarded Turing Fellowships and 10 projects have received funding on the first call launched in August 2018. The

Fellows are drawn from a wide range of expertise across all six Faculties. The purpose of the Turing Fellowship is to allow University academic staff to develop collaborations with [Turing partners](#), initiate new research projects and help set the research agenda for the [Alan Turing Institute](#), the national institute for data science and artificial intelligence.

Fellows include Prof [Ian Craddock](#) (Electrical and Electronic Engineering). A full list

of Fellows and projects can be found on the [Jean Golding Institute](#) for Data Science website.

**The
Alan Turing
Institute**

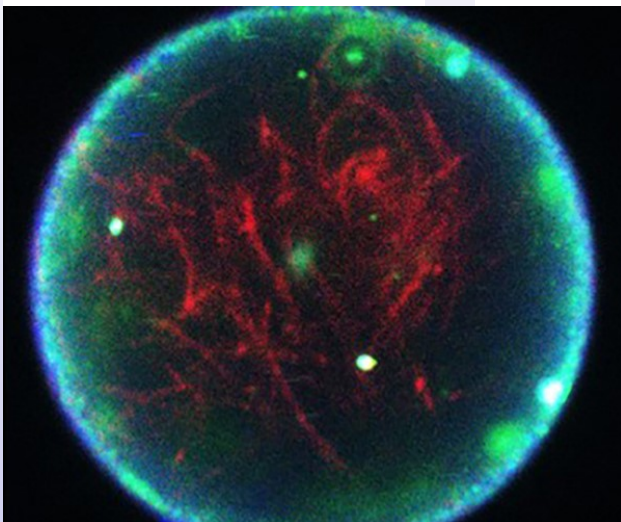
Partnership with Max Planck Society

The University of Bristol has partnered with the Max Planck Society in Germany to establish an innovative new Max Planck Centre for Minimal Biology in Bristol. The Centre will pursue game-changing research in the emerging field of minimal biology to address some of the most complex

challenges in fundamental science. This could lead to transformative applications in biotechnology and medicine.

As an emerging field of science, the applications in minimal biology are wide-ranging and pave the way for new therapies that could see artificial cells programmed with specific properties to rescue diseased cells and tissue, and the engineering of bacterial and mammalian cells to improve the production of pharmaceuticals.

generation of scientists to work between the physical and life sciences will be a core mission of the new Centre, which is expected to become fully operational in 2019. The Centre will focus on several key areas, including: synthetic nanoscale biology, implementing custom-designed functionalities in proto- and living cells, tissues and ultimately organisms; protein design in living cells, whereby completely new proteins will be designed from scratch to operate alongside natural proteins; and biomedical genome intervention by engineering synthetic, virus-derived, programmable nanodevices.



Training the next

[Read more](#)

NC3Rs Regional Programme Manager

Dr Jessica Eddy (pictured) has recently been appointed as the NC3Rs Regional Programme Manager for universities under the GW4 alliance. Her role is to help us more closely implement 3Rs policies across our research and education agenda. Jess will be working with colleagues across the four universities to provide advice and support for ongoing 3Rs initiatives, to assist in identifying new op-

portunities and to coordinate the sharing of best practice.


Jess is happy to answer any NC3Rs or 3Rs queries you might have and can also provide advice on PPL applications and NC3Rs grant applications as well as help with the NC3Rs Experimental Design Assistant tool, a web based application to guide animal researchers through the design of their experiments. Do [get in touch with Jessica](#) with

any questions you might have and visit the [NC3Rs](#) page for more information on the organisation and the resources they provide.



Slides presented by Jessica on NC3R can be viewed in [OneDrive](#).

£50 million funding for Centres for Doctoral Training

The Engineering and Physical Sciences Research Council (EPSRC) has awarded Bristol funding for nine  Centres for Doctoral Training (CDTs) – the highest number awarded to any university in the country.

The centres will train and equip engineering and science students with the skills needed to tackle global challenges such as sustainable energy

and cyber security. Bristol's nine centres will cover a broad range of disciplines that will be vital for knowledge and expertise in the future:

- CDT in Composites Science, Engineering and Manufacturing
- CDT in Future Autonomous Robotic Systems (FARSCOPE-TU: Towards Ubiquity)
- CDT in Trust, Identity, Privacy and Security in Large-scale Infrastructures (TIPS-at-Scale)

- CDT in Computational Statistics and Data Science: COMPASS
- CDT in Quantum Engineering
- CDT in Technology Enhanced Chemical Synthesis
- CDT in Aerosol Science
- CDT in Digital Health and Care
- CDT in Future Innovation in Non-Destructive Evaluation (FIND)

All of the PhD programmes are currently [open for application](#).

New Dean of Health Sciences

Prof [Jane Norman](#), currently Professor of Maternal and Foetal Health at the University of Edinburgh, will take up the formal responsibilities of Dean

of the Faculty of Health Sciences from 1 August 2019. Her research focusses on the pregnancy "stressors" of obesity, maternal depression/stress,

inflammation and hypoxia.

[Read more](#)



Recognition in medicinal chemistry

Prof [Varinder Aggarwal](#) of the School of Chemistry has been recognised for his work in the field of synthetic chemistry after being awarded the prestigious Yamada-Koga Prize 2019 from the University of Tokyo. He is the 25th recipient of the prize which is awarded annually to a scientist whose



research has had a major impact in the fields of synthesis and the

function of optically active compounds.

We work in the field of organic synthesis - making complex molecules that exist in nature and analogues that do not, but without using nature's complex machinery to do so.

We use small-molecule catalysts and reagents to control whether we generate left or right-handed molecules and then piece them together, like Lego bricks, to create complex structures with desirable char-

acteristics which maybe anything from anti-bacterial to anti-cancer compounds.

Prof Aggarwal has also received an Arthur C Cope Scholar Award 2019 administered by the American Chemical Society.

Aggarwal had developed synthetic methodology that is becoming used regularly by both process and medicinal chemists, and he has done this in a uniquely elegant and thought-provoking way— John Hartwig

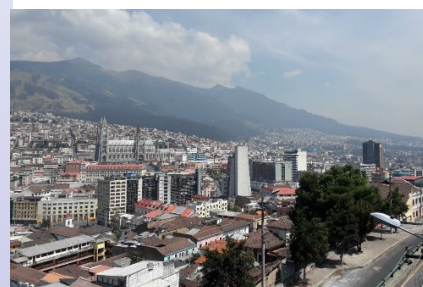
UK Research and Innovation Global Research Hubs

Scientists from the University of Bristol will be sharing their expertise as part of two new £20 million UK Research and Innovation Global Research Hubs funded through the Global Challenges Research Fund (GCRF). The first will focus on urban disaster risk and the second aims to tackle the challenge that nitrogen pollution poses for the environment, food security, human health and the economy in South Asia.

The South Asian Nitrogen Hub, a partnership led by the UK's Centre for Ecology & Hydrology, includes around 50 organisations from across the UK and South Asia of which Bristol is one of 14 UK partners.

The Hub will be awarded £19.6 million over the next five years, comprising £17.1 million from UK Research and Innovation (UKRI) and £2.5m from UK and international partners, including the South Asia Cooperative Environment Programme (SACEP). Contributions in-kind worth a further £7 million are being provided by partners of the UKRI GCRF South Asian Nitrogen Hub. Nitrogen is critically important as it is connected to air pollution, biodiversity loss, the pollution of rivers and seas, ozone depletion, health, economy and livelihoods; nitrogen pollution is caused, for example, by emissions from chemical fertilisers, livestock manure, and burning fossil

fuels. Previous efforts have addressed only specific aspects of the problem, while the Hub will bring these together in a more coherent approach. The UKRI GCRF South Asian Nitrogen Hub will study the impacts of the different forms of pollution to form a coherent picture of the nitrogen cycle. In particular, it will look at nitrogen in agriculture in eight countries – India, Pakistan, Bangladesh, Nepal, Afghanistan, Sri Lanka, Bhutan and Maldives. [Read more](#)





ELIZABETH BLACKWELL FUNDING

Rosetrees Trust 2019 Young Enterprise Fellowships

Young Enterprise Fellowships (YEF) are aimed specifically at recently qualified postdoctoral researchers primarily in the fields of engineering, computer science, maths and physics who wish to develop a long-term programme of biomedical research.

Closing date: 31 March 2019

EBI Postgraduate Discipline Hopping Fellowships

This scheme is designed to support a small number of postgraduate researchers currently enrolled on one of the University of Bristol Wellcome Trust-funded 4 year PhD programmes.

Closing date: 9:00 11 April 2019

EBI Identifying Candidates for Wellcome Trust Investigator Awards

This scheme is designed to support a small number of permanent academic staff at UoB within the first five years of their appointment, who are planning to apply for an Investigator Award from the Wellcome Trust. Applications will be accepted on a rolling basis.

Heads of Schools are asked to nominate members of staff who can be eligible for this scheme by emailing ebi-health@bristol.ac.uk

EBI Workshops Funding

Support interdisciplinary workshops in health research at new or emerging interface between two or more disciplines. Applications reviewed all year.

Returning Carers Scheme

To support academic staff across all faculties in re-establishing their independent research careers on return from extended leave (16 weeks or more) for reasons connected to caring (e.g. maternity leave, adoption leave, additional paternity leave, leave to care for a dependant.).

The deadline for applications is 30 April and 31 October each year.

EBI Bridging Funds for Senior Fellows

This scheme is designed to support a small number of academic staff at the University of Bristol who currently hold an externally funded research fellowship. Applications accepted on a **rolling** basis.

The Elizabeth Blackwell Institute for Health Research is officially a member of **Equality, Diversity and Inclusion in Science and Health**, or EDIS, an initiative set up by the Wellcome Trust, the Crick Institute and GSK.

Rachael Goberman-Hill, Director of the EBI, attended the interim Board meeting on 12 December 2018 as a University of Bristol representative. [Find out more about EDIS](#)

EBI has appointed a new **Diversity and Equality Champion**, Fiona McPhail, who started on 4 February 2019. Fiona's main focus will be on health and life sciences research communities; she can be contacted on fiona1.mcphail@bristol.ac.uk.

FUNDING OPPORTUNITIES

Would you like to receive timely, tailored funding opps information?

Do you want to know what funding opportunities come up in your research area?

Get tailored funding alerts?

Research Professional provides access to an extensive database of funding opportunities, and can send out tailored alerts based on keywords that you input, ensuring that the funding alerts you receive are the ones you want to hear about. UoB staff and students have **FREE** online access to the database from any device – once you've registered then you can view upcoming funding opportunities from home or away, not just while on the University network.

You can search for funding information by discipline, sponsor, database searches, by recent calls or by upcoming deadlines. If you register for the site and log in, you'll be able to:

- **Set up automated funding opportunity email alerts - tailored according to your discipline and research interests**, an easy process that will take just a few minutes to set up through the use of keywords
- **Save searches and bookmarks** - store items of interest for future reference, download and email to colleagues
- **Sign up for higher education news bulletins** – want to hear about what is going on in the broader HE environment? Latest news on the REF, setting up of UKRI etc? Sign up for the 8am playbook or the Research Fortnight news publications and stay up to date with the latest news.

Alternatively, a full calendar of funding opportunities for neuroscience research has already been set up and is [available online](#). Subscribing to the calendar will place the entries in your own calendar, which will automatically update according to pre-specified search criteria. Find out more about **Research Professional** on the [RED website](#). Note that some calls may have an internal process; do always remember to check the major bids webpage [here](#) to see if there is an internal process.

The following listings represent a *brief selection* of available funding for the Cancer Research community. **Full listings of opportunities** are sent out via Faculty Research Directors and/or School Research Directors, and **are available on the [Research Development website](#)**.

Cancer Research UK

[Predoctoral research bursary](#)

Closing date: 26-Mar-19

Award amount: £25,000

This allows clinicians and other health professionals to get involved in research projects early in their career. The bursary gives the applicant a greater understanding of research before deciding whether to undertake a PhD or MD, or gives the applicant the time and resources to obtain preliminary data before applying for a PhD or MD.

**Cancer Research UK**[Postdoctoral research bursary for clinical trainees](#)

Closing date: 26-Mar-19

Award amount: £35,000

This supports clinical trainees undertaking a research project after completion of a PhD. Applications from any area of CRUK's funding remit, with the exception of clinical trials and drug discovery, are considered.

Cancer Research UK[Early detection programme award](#)

Closing date: 28-Mar-19

Award amount: £12.5 million

These support long-term, integrated and renewable programmes of exceptional science to transform how and when early cancers and pre-cancerous states are detected. Projects may focus on any specific or combination of the following research areas:

- biological research underpinning early detection and biomarker discovery and validation
- human-based early detection discovery research
- epidemiology and risk stratification for early detection, to inform populations for targeted research or screening
- data and computation-driven approaches to early detection
- development and utilisation of preclinical early detection model systems
- early detection technology development
- translational and clinical early detection research

LEARN MORE ABOUT THE SCHEME with the **CRUK team** on **3 April 2019**

European Commission Horizon 2020: Societal challenges[Health, demographic change and wellbeing work programme: digital transformation in health and care](#)

Closing date: 24-Apr-19

Award amount: €8 million

This supports projects that manage health and wellbeing while empowering the participation of citizens and facilitating the transformation of health and care services to more digitised, person-centred and community-based care models, thereby enabling better access to healthcare and the sustainability of health and care systems. Proposals may address the following topics: **SC1-DTH-01-2019 big data and artificial intelligence for monitoring health status and quality of life after the cancer treatment.**

European Society for Medical Oncology[Translational research fellowships](#)

Closing date: 03-May-19

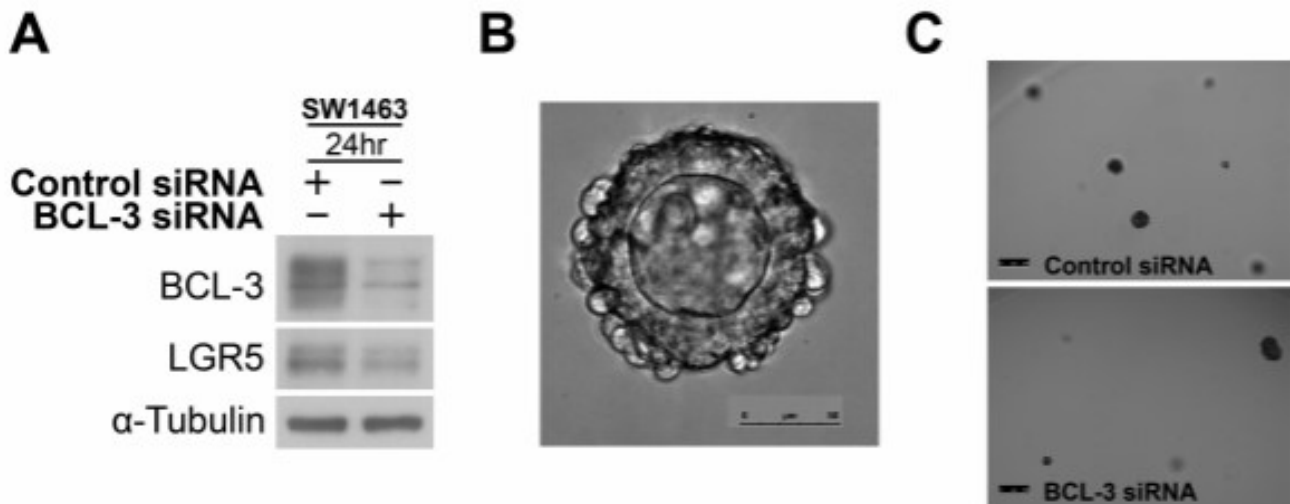
Award amount: €40,000

These enable young researchers to train in translational research at European institutions of excellence, and to develop specific high-quality translational research projects in oncology. Applicants must be: ESMO members, 40 years of age or under; oncologists with at least one year's experience.

FEATURED PUBLICATION

BCL-3 enhances β -catenin signalling in colorectal tumour cells promoting a cancer stem cell phenotype

Legge DN, Shephard AP, Collard TJ, Greenhough A, Chambers AC, Clarkson RW, Paraskeva C and Williams AC (2019). *Disease Models and Mechanisms*. Preview accessed online 20 February 2019.



Increased nuclear BCL-3 (a key regulator of inflammation and NF- κ B signalling when associated with p50 or p52 homodimers) has been reported in a subset of colorectal cancers, but its role in colorectal tumorigenesis remains poorly understood. Interestingly, recent studies have highlighted the importance of the interplay between NF- κ B signalling and the Wnt/ β -catenin pathway in colorectal epithelial cells, reporting that non-stem cells engineered to undergo high levels of Wnt and NF- κ B signalling can de-differentiate, initiating tumours in mice. Here we show that BCL-3 is an important co-activator of β -catenin/TCF-mediated transcriptional activity in colorectal cancer cells, increasing expression of Wnt-regulated intestinal stem cell genes. We demonstrate RNAi-mediated BCL-3 suppression reduced β -catenin/TCF-dependent transcription and the expression of intestinal stem cell genes and Wnt targets LGR5 and ASCL2. Further we show that BCL-3 promotes the stem cell phenotype in colorectal cancer cells by increasing colorectal spheroid and tumoursphere formation in 3D culture conditions. Our data suggest that targeting BCL-3 may represent an exciting new approach for CRC treatment, particularly as it acts downstream of frequently mutated APC and β -catenin.

Image caption: Figure 3. BCL-3 regulates colorectal spheroid and tumoursphere formation (A) Western analysis confirming BCL-3 suppression and LGR5 downregulation in SW1463 cells seeded into Matrigel. α -Tubulin serves as a loading control. (B) Widefield microscopy image of a spheroid grown from a single SW1463 cell following 10 days of culture. 20x objective. Scale bar = 50 μ m. (C) Widefield microscopy images of wells containing BCL-3 knockdown and control SW1463 spheroids. 5x objective. Scale bars = 250 μ m.

CONTACTS



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- Dr [Zoë Holland](#), *Network Facilitator (RED)*



- Dr [Kathreena Kurian](#), *Reader in Brain Tumour Research and Consultant Clinical Neuropathologist*



- Prof [Richard Martin](#), *Professor of Clinical Epidemiology*



- Prof [Anne Ridley](#), *Head of School of Cellular and Molecular Medicine*



- Prof [Caroline Relton](#), *Professor of Epigenetic Epidemiology*



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- Dr [Emma Vincent](#), *Research Fellow and Early Career representative*



- [Catherine Brown](#), *Network Administrator*



The Cancer Research Network is led by a Steering Group:



[@BristolCancer](#)



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[bristol.ac.uk /cancer](http://bristol.ac.uk/cancer)



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