

# van Geest Voice

The newsletter for supporters of the John van Geest Cancer Research Centre

## Cracking the cancer code

John van Geest Cancer Research Centre

A Night in  
the West End

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In the news...

Running to beat  
cancer



Director of the centre Professor Bob Rees with key colleagues Professor Graham Pockley and Professor Graham Ball



# A warm welcome



Welcome to the first issue of van Geest Voice – the newsletter for the John van Geest Cancer Research Centre at Nottingham Trent University. Keeping you up-to-date with our progress both in terms of scientific research and fundraising activities.

In 2008, the John and Lucille van Geest Foundation endowed Nottingham Trent University with a research grant of £8 million to establish a dedicated cancer research facility on the University's Clifton campus. Nottingham has been a focus of cancer research for over 40 years and the John van Geest Cancer Research Centre builds upon that legacy.

Around one in three people will be diagnosed with some form of cancer during their lifetime. Cancer is an illness that not only impacts the life of a sufferer, but also the lives of family and friends around them, it can be a difficult time for all those involved.

But, with cutting edge technology and world class scientists, the centre is at the forefront of cancer research and is working to crack the cancer code.

The work focuses on two key approaches to the treatment of patients with cancer:

- Improving the diagnosis and management of breast and prostate cancers.
- Developing effective vaccines and immunotherapies that will significantly improve the survival rates and quality of life for cancer sufferers.

The running costs for the centre are supported by the University, so this means that 100% of any donations and monies received goes directly to aid our research.

We successfully launched our public fundraising campaign at the recent NTU concert with the London Philharmonic Orchestra (read more on page 2). Further details about future events and how you can get involved can be found on our website at:

**[www.ntu.ac.uk/vangeest](http://www.ntu.ac.uk/vangeest)**

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# A NIGHT IN THE WEST END

Saturday 15 March 2014 witnessed Nottingham Trent University joining forces with the London Philharmonic Orchestra (LPO) for what can only be referred to as a musical extravaganza. Audiences at the Royal Concert Hall were captivated by the 150-voice NTU Choir, performing alongside soloist and West End star Kerry Ellis.

As well as being a spectacular musical showcase, the concert signified the launch of our centre's major public fundraising campaign.

Professor Robert Rees, director of the John van Geest Cancer Research Centre, welcomed the concert, believing it was a fantastic way to help raise awareness of the work of the centre and encourage donations. Rees stated, "donations are crucial in helping to fund experiments, purchase essential equipment and pay for the salaries of researchers".

On the night of the event, Matthew Hopkins, the University's director of music, conducted the LPO through a varied programme that including his own arrangement of songs from *Gypsy*, as well as familiar pieces from *Phantom of the Opera*, *Oklahoma*, *Chess*, *Wicked*, *Les Misérables* and *Chicago*. The NTU Dance Troupe performed alongside the orchestra to All That Jazz.

A special moment came with the duet I Know Him So Well, from *Chess*, when Kerry Ellis sang with 18 year old NTU student and choir member Lucy Curry who successfully auditioned for the opportunity. And, the evening ended with a piece from *Blood Brothers* and a well-deserved standing ovation from the audience.

The success of a Night in the West End helped us raise a fantastic £10,000. Our ability to make a real difference to the way in which we help tackle problems cancer patients' are suffering, will only be made possible through donations and the public's continued support for events such as this.





Images courtesy of David Baird

# Our campaign board

**Our campaign board is made up of individuals with an interest in the field of cancer research. The members act as ambassadors, raising awareness of the centre and its purpose across the cancer research world and the wider community.**

**Here's a quick introduction to some of them...**

## Richard Bullock OBE

Richard Bulcock has had a distinguished law career, and was educated in Nottingham and Christ Church College, Oxford. He was Head of Legal Practice then Head of Legal Ethics at Freeth Cartwright LLP. He is also a Deputy Lieutenant of Nottinghamshire and was Under Sheriff in both Nottinghamshire and Derbyshire for several years before retiring from that role in 2013. Richard has been awarded an OBE for services to the Shrievalty and the Community and is currently Chair of the Board of Governors at Nottingham Trent University.



## Dr Steve Chan

Steve Chan qualified at the University of Nottingham Medical School before specialising in oncology via Oxford and the Ludwig Institute. He is currently the Director of Clinical Trials in Breast and Gynaecological research at Nottingham University Hospitals and a visiting professor at NTU. Steve is the author of over 100 peer reviewed scientific papers and principal author of studies in the development of new targeting therapy treatments. His current research interests include predictor markers as well as specific antigens in Breast and Ovarian cancers. Steve is also a member of numerous national and international steering committees for clinical trials.



## Dr Jas Bilkhu

Dr Bilkhu established and ran a General Practice for 27 years before taking on a teaching and training role at the University of Nottingham. He has chaired numerous local, regional and national committees and was Provost for the Vale of Trent faculty of the Royal College of General Practitioners. He established and ran the world's first Diploma in Prison Medicine which brought the education of prison doctors into mainstream medicine. He was a charter member of the Nottingham West Lions Club and has helped to raise a considerable amount for various charities over the years.



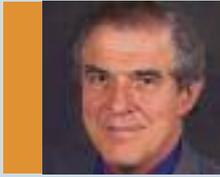
## Dr Nigel Chapman

Former HM Coroner of Nottinghamshire, over the last 30 years Dr Chapman has consistently strived to better the lives of the elderly and vulnerable in healthcare. He has lectured in Sweden, Japan, Spain, Northern Ireland, and Ireland on tissue viability and pressure sore prevention. Nigel has also set up mock inquests to demonstrate to the public and professionals how a Coroners' Court works, helping both families and professionals understand the expectations of a court. Through this work Dr Chapman is an ambassador and role model in his field and a committed ambassador to Nottingham and Nottinghamshire.



### Professor Mike Bishop

Michael Bishop (MCB) is a retired urological surgeon and a visiting professor at Nottingham Trent University. He worked for 25 years in the Nottingham University Hospitals and was awarded the Gold Medal of the British Association of Urological Surgeons in 2011. He remains enthused by translational research and the application of basic scientific research to clinical problems, and is still active as a surgeon in developing nations.



### Dr Masood Khan

Dr Masood Khan was appointed as a Consultant Urological Surgeon at University Hospitals of Leicester in April 2006. Since August 2009 he has been the Head of Service for Urology. He has a strong interest in prostate cancer diagnosis research. He was appointed a visiting professor to Nottingham Trent University in March 2012, and recently was appointed as an Associate Editor of the Annals of the Royal College of Surgeons. His clinical interests include the management of lower urinary tract symptoms (LUTS) particularly in men, stone disease and prostate cancer.



### Louise Third

Louise is the Director of Integra Communications and brings an understanding of marketing and working with the media to the campaign board. She handles news management, communications planning, media training and speech writing for clients across the business, academic and charitable sectors, including BioCity. Having successfully recovered from treatment for breast cancer in 2013, Louise is keen to play her part in cracking the cancer code.



### Teresa Hitchcock

Before qualifying as a solicitor, Teresa worked as a Senior Environmental and Health and Safety Regulator in local government, and acquired extensive experience and knowledge of regulation in those areas. Based in Sheffield, she is currently UK Head of Safety, Health and Environment for international law firm DLA Piper. In recent years, she has developed a particular expertise in the law relating to climate change and the regulatory regimes instituted to address it, including emissions trading. She is a well-known speaker at national and international conferences on legal and policy issues relating to climate change.



### Ian Scott

Ian is a retired Consultant Gynaecologist from Derby with a long-term commitment to gynaecological cancer research with a particular interest in ovarian cancer. As a visiting professor with the John van Geest Cancer Research Centre he has been instrumental in offering the opportunity for specialist clinicians in the cancer centres in Nottingham, Derby and Leicester to collaborate with world class laboratory scientists, all in pursuit of novel approaches to the early diagnosis and treatment of a variety of cancers. He also sits on the NTU Ethics Committee.



# In the news...

The John van Geest Cancer Research Centre's work has been recognised by both national and international press recently. This section of our newsletter provides you with a catalogue of press snippets that highlight some of the remarkable scientific research and fundraising activities that have taken place to date.

***"Researchers at Nottingham Trent University discovered that injecting the PAP 114 protein in the surrounding area of cancerous cells stimulates the body's immune system and "switches off" tumour growth."***

International Business Times,  
14 December 2013

***"Research team at Nottingham Trent University has found a protein which could help in boosting the immune system to fight prostate tumor growth."***

News Tonight Africa, 15 December 2013

***"The two-and-a-half-year study is aiming to identify new molecules – or "bio-markers" – in blood and urine, which hold the key to improving the diagnosis and treatment of prostate cancer. The University team hopes that these molecules will provide them with vital clues about the disease and how it can be tackled more quickly and effectively."***

The Telegraph, 15 November 2013

***"Researchers at Nottingham Trent University have identified characteristics in a protein which may not only be able to stimulate the body's own defences to attack tumour cells, but which could also help protect from established prostate tumours — bringing new hope to those with an advanced form of the disease."***

Irish Examiner, 16 December 2013

***"The scientists, based at the University's John van Geest Cancer Research Centre, now believe their findings could lead to the development of new cost-effective vaccines which will stimulate a faster-acting and longer-lasting immune system response in those people suffering with the potentially lethal tumours."***

Huffington Post, 16 December 2013

***"Scientists at Nottingham Trent University have discovered that around 60 % of women carry high levels of a protein known as DACH1 and are likely to survive even without aggressive treatment."***

The Telegraph, 9 January 2014

***"In the cause of cracking the cancer code, Nottingham Trent University staged a memorable fund-raising concert."***

The Nottingham Post, 16 March 2014

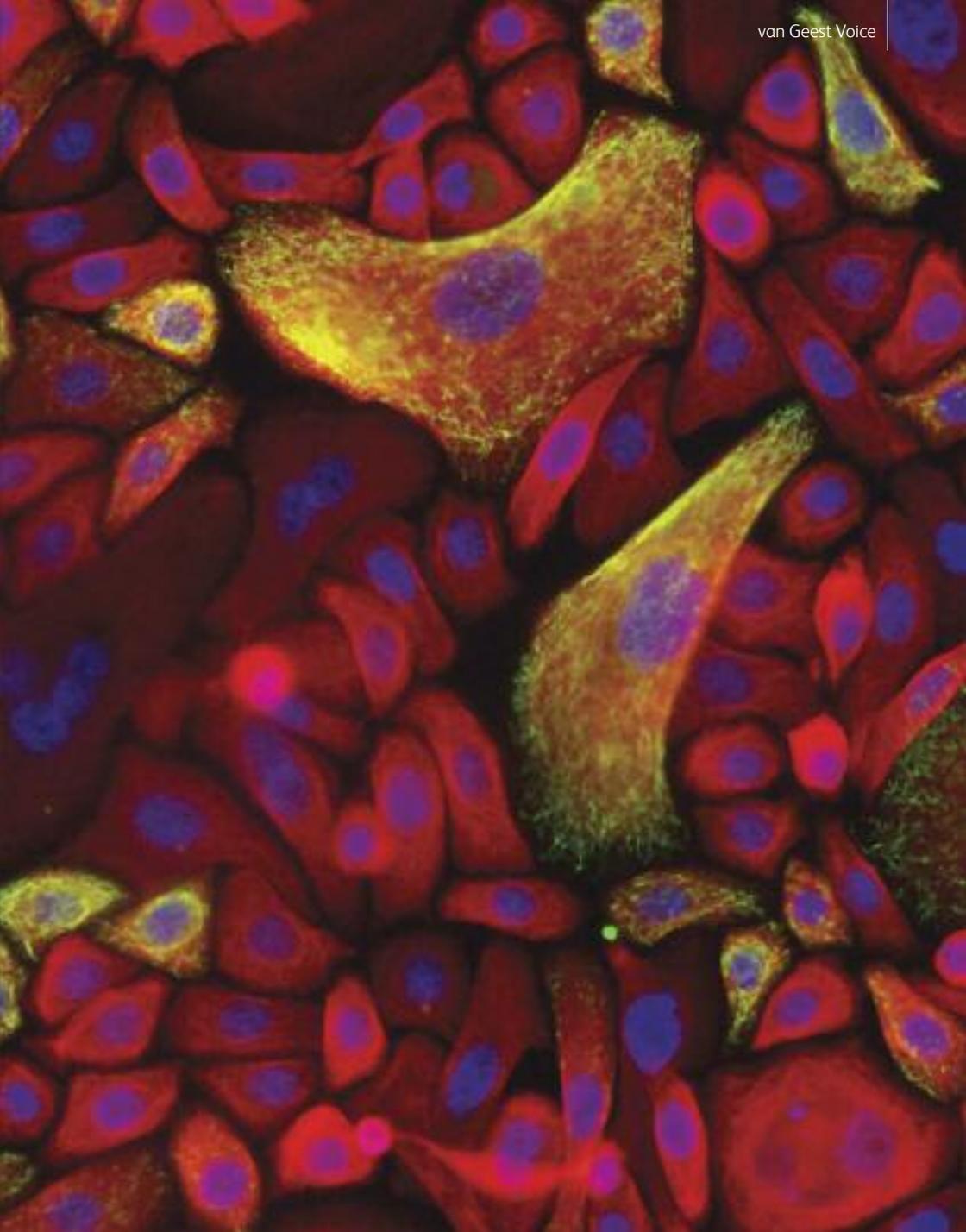


Image shows prostate cancer cells stained to show proteins of interest to our scientists



The latest developments from our research team including the identification of a way in which our body's immune response can fight against prostate cancer, and, how focusing on a specific molecule in a patient's tumour could be a clue to better breast cancer prognosis.

# Exciting developments unlock prostate cancer protein

In a study that could pave the way for new and improved vaccines for prostate cancer, our scientists have identified how a specific region of a prostate-related protein can be used to trigger the body's immune response against prostate cancer.

The work focused on the prostatic acid phosphatase (PAP) protein, which is present in more than 90 % of prostate tumours. Our scientists were able to develop a new prostate cancer vaccination strategy utilising a portion, or epitope of this PAP protein – PAP 114 – which was capable of preventing and reducing tumour growth in pre-clinical trials.

The team believes the study could lead to the development of new vaccines which are able to generate a more specific, more efficient, faster and longer-lasting protective immune response against prostate cancer. It could also mean that vaccines are developed at a lower cost than currently, and with fewer potential side effects.

Prostate cancer is the most common type of cancer in men within the UK – each year more than 10,000 men will die as a result of prostate cancer and more than 40,000 will be diagnosed with the disease. Cases are rising amongst men over 50 and the average age for men to be diagnosed is between 70 and 74.

Although cancer vaccines can be formulated in a number of different ways, the approach devised by our scientists for this PAP vaccine would involve a series of injections. Senior research fellow and lead on the project Dr Stephanie McArdle, said: "for most cancers, the specific targets against which vaccination strategies can be based are sometimes weak and relatively poor at inducing robust, protective anti-tumour immune responses."

Developing cancer vaccines that can overcome the capacity of tumours to evade the immune system and induce protective anti-tumour immunity is therefore essential for the development of new immunotherapies for aggressive disease.

"Our findings demonstrate that PAP 114 is a promising candidate for further development of PAP-based anti-cancer vaccine strategies. It induces characteristics that are consistent with anti-tumour protection; capable of triggering an immune attack against prostate cancer cells and protecting against established prostate tumours."

The epitopes of the PAP protein were delivered to the immune system using Scancell's proprietary ImmunoBody® technology.

# Molecule could be clue to better breast cancer prognosis

Prognoses for women with breast cancer could be better predicted by focusing on a specific molecule in a patient's tumour. It is hoped that the study could help bring an end to unnecessary and aggressive treatments for women with the disease who already have a good chance of survival. The work may lead to finding more effective, appropriate and targeted therapeutic treatments for individual women, without the need for intensive radiotherapy or chemotherapy.

The team, along with experts from Nottingham University Hospitals NHS Trust, focused on the DACH1 protein, which is known to repress tumour growth in breast cancer – the most common cancer in females and the third most common cause of cancer-related death in the UK.

The scientists used an artificial neural network, or computational model, to identify protein biomarkers for breast cancer linked to oestrogen receptor-associated tumours, which account for the largest proportion of women with the disease.

DACH1 was found to have a very strong influence and association with oestrogen receptor cancer biomarkers, making it a prime candidate for investigating its role as a prognostic marker.

The study involved investigating DACH1's significance in predicting breast cancer survival by assessing its levels in breast cancer tissue, and it was found that those with higher levels of the protein had lower grade tumours, a better chance of cancer-specific survival, longer disease-free intervals and lower rates of tumour reoccurrence in the five years after diagnosis. The researchers believe the study could have implications for the development of more personal approaches to treating breast cancer and lead to more appropriate treatments for individuals.

Professor Graham Ball, said: "we have found that the molecule DACH1 sits at the centre of a lot of important disease pathways and has been found to be a very good prognostic biomarker and predictor of patient survival. If we can predict that some women would survive for many years based on surgery alone, they would not need to undergo unnecessary and aggressive treatments such as chemotherapy, which are more suited to those with poor prognosis."

The study also involved the Albert Einstein College of Medicine of Yeshiva University in the US and Mansoura University in Egypt.

# Running to beat cancer

On Saturday 26 April 2014 around 300 staff, students and friends of the John van Geest Cancer Research Centre gathered at the Nottingham Trent University Clifton campus for the centre's annual runNTU fundraising event.



The participants were invited to take part in either a 5 km run, which took them around the Clifton campus before heading into the village and continuing along the banks of the River Trent. Or, they were able to take part in the charity family fun run of 1.5 km. The event was host to a variety of people who chose to either walk, jog or run – with the main aim being successful participation.

The event was a fantastic day for all ages, with lots of fun additions such as inflatables and a programme of musical entertainment – which everyone enjoyed thoroughly. Many participants got into the fun spirit of things and wore fancy dress – there was a prize for the best fancy dress in each event, as well as prizes given out to the more athletic achievements.

UPP, the company behind student accommodation at Nottingham Trent University were the generous sponsors of the event, meaning 100% of the entry fees and money received through donations went straight to the centre. Many participants also chose to register on the JustGiving website to raise additional sponsorship.

Overall, the day raised £6,000, in support of the important research conducted at our centre, and plans for runNTU 2015 are now underway – keep an eye out for more information about next year's event which is set to be bigger and better than ever!

[www.runntu.co.uk](http://www.runntu.co.uk)



# Meet the team



Dr Murrum Ahmad  
Research and Business  
Manager

## How long have you been working at the John van Geest Cancer Research Centre?

I have been working in my current role since 2008, but I have been working alongside my group since 2001 when I was a PhD student and worked as a senior technician in the biochem labs.

## What was your PhD in?

My PhD was in Tumour Escape Mechanisms following immunotherapy with DISC-HSV, and it was sponsored by Xenovo (formerly known as Cantab Labs).

My PhD took me into 2004, and this is when I was invited to stay on as a post doc, as a Project Manager for an FP6 EU funded study titled ENACT. It was Professor Robert Rees who took the co-ordination role for this project, and this is how the opportunity to work with the centre came to me.

## What was the project like?

I found the project really interesting and diverse! It was admittedly a very steep learning curve, and had many challenging aspects to it. One challenge that was particularly hard for me to overcome was the fact that I had just recently become a mum, and was having to manage the needs of my newborn, along with the demands and commitments of a job that required me to travel all over Europe.

## And how did you come to this current role?

The role I am currently in was established from scratch. I felt that I had highlighted there was a need to manage the intellectual property (IP) and relationships / collaborations we (the John van Geest Cancer Research Centre) were developing with the outside community.

After much deliberation over this gap in our department, I discussed it with Bob and put a new role proposal forward to him.

Again, this was another valuable learning experience for me as the role was heavily reliant on me teaching myself about the major issues surrounding the field of IP and collaborations. In order to successfully understand these, I decided to do a Medici fellowship and various CPD courses.

I am probably not considered a risk taker, but actually I have taken many risks and faced scary situations over the years by taking on new challenges that I could have easily avoided!

## What is a typical day?

To be truthful, no two days are ever the same in my job because the work is so diverse. However, I can highlight some regular tasks that I find myself dealing with, and these would be things such as contract agreements – which can come to me on a daily basis. I also find that I can get the odd troubleshooting problem – anything from access card issues through to requests from visiting scientists who require my help finding specific paperwork. But, right now one of my biggest challenges is seeking national level approval of some of the ethics surrounding the collection of patient material for our research into prostate cancer. I am also highly engaged in the facilitation of all the pre-clinical work associated with the work of the centre.

The role is truly unique, but it's definitely essential to the smooth operation of the centre.

## What do you to relax?

I bake cakes at the weekend and basically any occasion, whether it is work or pleasure.

## What would you be doing if you weren't doing this?

Running a coffee and cake shop!



# Thank you!

On behalf of the entire John van Geest Cancer Research Centre we would like to say thank you for taking the time to read our first ever edition of van Geest Voice.

We hope that what you have read has helped you to understand who we are, what we do, and how we have already helped make a difference towards finding a treatment for cancer.

We will continue our dedicated work towards cracking the cancer code and improving the lives of cancer patients. In order to maintain this cutting edge research though, we need your help.

Philanthropic gifts, both large and small, allow us to continue with our vital scientific work to improve diagnosis and take vaccines and medicines into clinical trials.

You can make a single donation, set up monthly giving or even leave a legacy in your will. No donation is too small, every penny that we receive will bring us one step closer to helping us facilitate our research.

You could even change your own life while helping to save the lives of others. Why not:

- take on a personal challenge?
- participate in our annual Run NTU event?
- encourage your friends, family and colleagues to get involved too?

Please spread the word and tell your friends about this amazing facility and what we do. Cancer is personal to all of us, help us to make the difference today.

Thank you,

**John van Geest Cancer  
Research Centre**



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