

## A new prevention era



We'd like to introduce you to Dr Geoff Wells and Professor Jack Cuzick, two Cancer Research UK-funded scientists, each playing a significant role in advancing cancer prevention.

Whilst Dr Geoff Wells works to discover new chemopreventative drugs, Professor Jack Cuzick is coordinating a large scale international breast cancer prevention trial, involving some 10,000 women.

*Story continues inside...*

Any questions? Please email [friends@cancer.org.uk](mailto:friends@cancer.org.uk) or call the Friends team on 020 7121 6666



### ● Temozolomide

Update: Sales of temozolomide, an anti-cancer drug discovered by Cancer Research UK scientists for patients with the most common form of brain tumour, have now exceeded \$1 billion – generating significant royalties to fund our further research.

### ● Professor John Neoptolemos

Update: The results of three clinical trials undertaken by The European Study Group for Pancreatic Cancer (ESPAC), involving Professor John Neoptolemos, have shown that the use of chemotherapy after surgery can improve survival, giving people precious extra months or even years.

As you may recall from Issue 5, Dr Geoff Wells (top) is the promising young researcher who secured a Cancer Research UK fellowship to support his work in chemoprevention. Professor Jack Cuzick (above) is coordinating the International Breast Cancer Intervention Study II (IBIS-II), touched on in Issue 2.

### ● Also in this issue

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# Designing drugs to prevent cancer

Around half of all cancers could be prevented by changes to lifestyle. In addition to encouraging people to be aware of the avoidable causes of cancer, Cancer Research UK is also at the forefront of other prevention strategies – such as chemopreventative drugs.

## Dr Wells' work at The School of Pharmacy...



**Dr Geoff Wells is designing drugs that could protect our cells from turning cancerous – an approach known as 'chemoprevention'.**

The majority of cancers result from damage to our DNA, which accumulates over a lifetime.

However, our cells have built-in systems that provide protection from damage-causing chemicals. Several of these systems which sense and repair damage are

controlled by the same 'master switch' – a molecule called Nrf2.

Nrf2 has the ability to switch on a number of protective anti-cancer genes, but it can be inactivated by a second molecule called Keap1, which binds to Nrf2 and 'tags' it for destruction. In most circumstances this is desirable but in people at very high risk of cancer it may be useful to keep these systems activated.

**The challenge is to design drugs that block the binding action of Keap1, in turn increasing the cancer fighting ability of the cell.**

### A precision approach

Dr Geoff Wells is using a variety of approaches, including complex computer programmes, to design and 'virtually' test drugs that act on these specific target molecules.

The next step is to perform a range of lab tests to see which of these experimental drugs is most effective. The drugs can then be modified, tested and further refined, with the long-term aim of identifying the most potent drug and taking it into large scale clinical trials to find out whether it is safe and effective at preventing cancer.

## Professor Cuzick's work at Barts and The London School of Medicine



**Professor Jack Cuzick is coordinating a large clinical trial to find out whether the drug anastrozole can help prevent breast cancer.**

The International Breast Cancer Intervention Study II (IBIS-II) follows on from IBIS-I, which showed conclusively that the drug tamoxifen can reduce breast cancer rates by 30%.

IBIS-II will test the drug anastrozole, known to be an effective drug for preventing the recurrence of breast cancer after treatment, to find out whether it is more effective than tamoxifen in preventing cancer in healthy post-menopausal women

## Proof positive together we're making progress every day

### Ovarian cancer screening

Promising early results from an ovarian cancer screening trial, part-funded by Cancer Research UK, suggest that routine screening may lead to earlier diagnosis. The trial concludes in 2015, when we'll be able to see whether screening can actually help to reduce deaths from ovarian cancer.

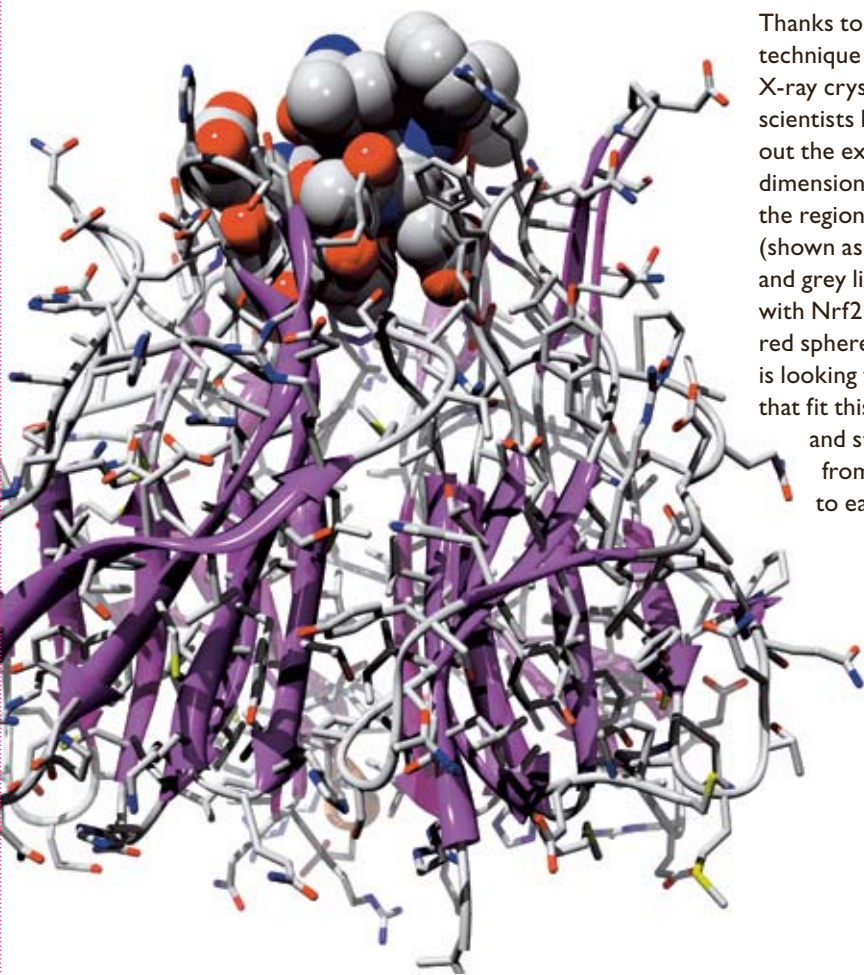
“ In our studies on human cancer cell samples, we have developed some exciting potential treatments that could soon be assessed in patients... They're so effective because they deliver a knock-out blow to a specific mutant protein that we know goes wrong in more than 50% of skin cancers. ”

Professor Caroline Springer from The Institute of Cancer Research in Sutton, on a group of potential new drugs developed to treat melanoma – the most dangerous form of skin cancer.

Professor Rahman and her team also at The Institute of Cancer Research have advanced our understanding of the inherited factors in

### Wilms tumour

a rare form of kidney cancer. This could lead to tests that identify children at increased risk – improving the chance of early diagnosis and helping doctors to care for them more effectively.



Thanks to a sophisticated technique called X-ray crystallography, scientists have worked out the exact three-dimensional shape of the region in the Keap1 (shown as purple ribbons and grey lines) that binds with Nrf2 (shown as red spheres). Dr Wells is looking for molecules that fit this unique shape and stop the two from binding to each other.

Such drugs could one day be used to help prevent cancer in people at increased risk of developing the disease – such as those who have inherited a faulty gene.

## Medicine and Dentistry

at increased risk of the disease – and importantly, if it has fewer side effects.

If successful, this study could help prevent thousands of women from developing breast cancer in the future.

*'Many, many people, including myself, believe that prevention is the way forward. This is the largest, and arguably the most important prevention trial in the world.'*

**Professor Jack Cuzick**

### Peering inside brain tumours...

- Dr Gerard Thompson at the University of Manchester is investigating the potential of sophisticated new imaging techniques to improve radiotherapy for people with glioblastoma multiforme; an aggressive type of brain tumour
- His aim is to build interactive computer-based 'maps' to help doctors identify the most effective radiation dose for each part of the tumour – ultimately improving survival for people with the disease

• Mr Robin Kennedy, a surgeon at St Mark's Hospital in London, is coordinating a clinical trial to investigate whether keyhole surgery provides greater benefits than conventional surgery for **bowel cancer** when carried out alongside an enhanced programme to improve recovery.

• Results could help shape the way that people with operable bowel cancer are treated in the future.

## Inside Friends' events

# Scottish Benefactors' Dinner

On 26 February 2009, 40 Friends from Scotland joined us at Harburn House for dinner and a science update from Professor Karen Vousden, Director of our Beatson Institute for Cancer Research.

### A generous contribution

This event was made possible by the generous support of **Ritchie Neill Solicitors and Estate Agents** who sponsored the dinner.

'We all know someone affected by cancer,' explains Partner Graham Ritchie, 'and when we met Sally Burton-Graham of the Friends' team at another event, we agreed to help.'

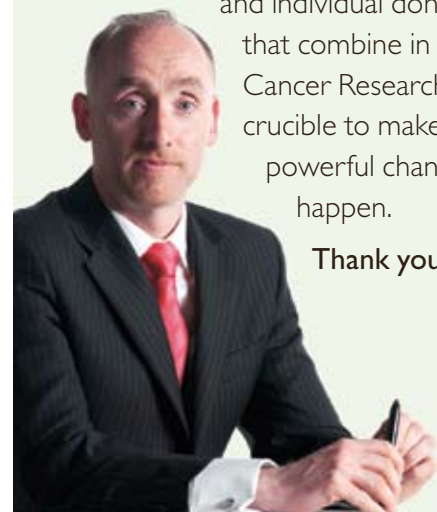
### A collective effort

'Our staff members also got involved,' explains Mr Ritchie (pictured below), 'and we all felt a great sense of pride and achievement.'

It is generous support such as this, as well as the active contribution of leading researchers, scientists

and individual donors that combine in the Cancer Research UK crucible to make powerful change happen.

**Thank you.**



**Ritchie Neill Solicitors is now offering a Free Will Writing Service. To find out more, please call Graham Ritchie on 01506 635 590 or visit [www.rnsolicitors.com](http://www.rnsolicitors.com)**

## What makes a Friend?



When Philippa McEwan's sister Jo died of cancer, she became a founding trustee of the Cancer of Unknown Primary (CUP) Foundation, a charitable foundation also known as 'Jo's friends'. However, this hasn't stopped her

supporting Cancer Research UK – as Philippa herself explains...

“Jo's death made me realise that being a passive supporter was no longer good enough. I met some of the fantastic people working to raise funds and get supporters involved with Friends, and I wanted to be part of such a powerful movement for change.”

### 'Fired up to do something'

'Cancer Research UK plays a big role in public awareness; demonstrating what the individual can do to maintain as healthy a lifestyle as possible – the role of prevention being better than cure ... and I have become a passionate campaigner for research into the rarer cancers because of what happened to Jo.'

### 'Promoting action'

'As a trustee of Jo's friends, I work with other charities to promote action that will end Cancer of Unknown Primary (CUP). My aim is to raise awareness and encourage more research into CUP – and for Cancer Research UK to provide a cure for as many cancers as possible within the shortest time frame.'

*Philippa McEwan*

Philippa McEwan,

Friend of Cancer Research UK

You can find out more about the CUP Foundation at [www.cupfoundjo.org](http://www.cupfoundjo.org)

# New Cancer Research UK Centres

A major part of our new five-year research strategy is to establish up to 20 Cancer Research UK Centres; regional hubs that will bring together our scientists and doctors under one 'virtual roof' with investment from key partners such as research organisations, other cancer charities and the NHS.

## Joined up thinking

The first four Centres are already up and running:

**Birmingham** will focus on genetics, gene therapy and the link between viruses and some cancers, as well as cancers of the prostate and bladder and leukaemia. It will also become a leading centre for clinical trials.

**Liverpool** will focus on pancreatic, head and neck, and blood cancers, and also pioneer the latest techniques in surgery, radiotherapy and the treatment of children's cancers.

**Belfast** will focus on cancers of the bowel, oesophagus and breast. It will also concentrate on pioneering the latest techniques in radiotherapy, improving cancer diagnosis and developing more effective drugs.

**Southampton** will focus on the biology and treatment of lymphoma, bladder and breast cancers as well as key research into cancer genetics, and cancer immunology and immunotherapy.

We'll keep you up to date with further Cancer Research UK Centre launches in future editions

## Don't miss... Friends' events

Wed 14 Oct Annual Dinner, London

16 Sep, 20 Oct, 17 Nov, 8 Dec

Lab tours, London Research Institute

Our lab tours are extremely popular. To add your name to the waiting list, or ask about visiting another Cancer Research UK facility (such as Clare Hall in Potters Bar, or the Paterson Institute for Cancer Research in Manchester), please call 020 7121 6666 or email [friends@cancer.org.uk](mailto:friends@cancer.org.uk)

Together we will beat cancer

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