

Remembering  
the Rector who  
helped shape the  
modern College

◆ CENTRE PAGES

# Lord Flowers 1924–2010



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EDITOR'S CORNER

## Global village

Imperial is undoubtedly an **international university**, with 158 nationalities represented among our staff and students. But when the summer term comes to a close, the international vibe by no means fades, with **countless languages** filling the JCR spoken by students who come to Imperial for summer courses or placements. Among the visitors on the South Kensington Campus this week are students from the Korean Science Academy of Kaist and Singapore's Nanyang Technological University who are undertaking research placements in some of Imperial's Departments including Bioengineering and Chemistry. All will return home full of stories of Imperial and we hope will **act as ambassadors** for our work. Whether you are staying here or heading abroad I hope you enjoy the summer. While the print *Reporter* will take a rest during August, log onto *Reporter online* where we will **continue to update you on news** from the Imperial community.

EMILY ROSS, EDITOR

Reporter is published online at [www.imperial.ac.uk/reporter](http://www.imperial.ac.uk/reporter) and every three weeks during term time in print. The next publication day is 16 September. Contact Emily Ross: [reporter@imperial.ac.uk](mailto:reporter@imperial.ac.uk)

Cover photograph: A portrait of Lord Brian Flowers painted by Kyffin Williams RA, which hangs in 170 Queen's Gate.

## New green computer servers

New servers installed this month by Information and Communication Technologies (ICT) will lead to savings each year of up to six tonnes of carbon dioxide and reduce the cost of delivering IT services. The saving is a result of purchasing new servers with low energy consumption processors. Being more powerful and efficient, one of the new generation of servers can effectively do the job of 10 of its predecessors.

Okan Kibaroglu, ICT's green

**"Technological improvements will continue to enable us to reduce our impact on the environment."**

champion, said: "Technological improvements will continue to enable us to reduce our impact on the environment. ICT will continue to do its best to keep up with those advancements and make our College a more sustainable organisation."

This is part of a series of ICT initiatives, which includes the introduction of a new generation of lower wattage PCs, which use a third of the power of previous PCs. Based on the number of computers ICT upgrades across the College in a year, this alone is currently estimated to save £80,000 and 500 tonnes of carbon dioxide per



year, while an initiative planned for the autumn will allow staff to access their work PCs remotely without having to leave them on.

—JOHN-PAUL JONES, COMMUNICATIONS

For more on Imperial's StepChange campaign, which seeks to engage the whole Imperial community in reducing carbon emissions, visit: [www.imperial.ac.uk/sustainability/stepchange](http://www.imperial.ac.uk/sustainability/stepchange)

## In memory of Lieutenant Neal Turkington

Imperial staff, students and alumni reacted with sadness as news emerged of the death of engineering alumnus Lieutenant Neal Turkington in Afghanistan on 13 July.

Twenty-six-year-old Neal, who graduated with an MEng in Civil Engineering in 2007, is one of three soldiers who died after an attack by a member of the Afghan National Army. Recalling him as "a cheerful, humorous and loyal companion to his peers," Professor David Nethercot, Head of the Department of Civil and Environmental Engineering, said:

"We are devastated by Neal's death. He engaged in all College activity with dedication and integrity. He was particularly passionate about using his technical skills in support of others, as reflected in his involvement in expeditions to provide basic infrastructure to the poor in Nepal and El Salvador.

"He was an outstanding young man, of exceptional potential and of a rare attitude and civility. The thoughts and sympathies of everyone in the department are with his



family at this tragic time."

One major project Neal was involved in during his time at Imperial was the El Salvador Project, set up by Imperial students in 2002 to help poor communities build schools, homes, latrines and other vital infrastructure.

Always intent on a military career, Neal joined Imperial from Welbeck Defence Sixth Form College. After graduating, he went straight to the Royal Military Academy Sandhurst and joined the 1st Battalion The Royal Gurkha Rifles in August 2008. Before serving in Afghanistan as a junior commander and leader, he spent periods in places including Brunei and Nepal.

—ABIGAIL SMITH, COMMUNICATIONS

To share your memories of Neal visit: [www3.imperial.ac.uk/news/nealturkington](http://www3.imperial.ac.uk/news/nealturkington)

Imperial College  
London

## Join the fellowship!



Early-career researchers are invited to apply to the third round of the College's Junior Research Fellowships scheme, which offers an opportunity to establish your own scientific path, free from teaching and administration duties. Places to be taken up in autumn 2011.

Visit: [www.imperial.ac.uk/juniorresearchfellowships](http://www.imperial.ac.uk/juniorresearchfellowships)

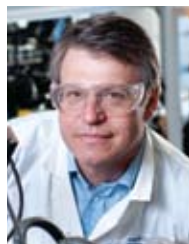
The deadline for applications is 29 October. Places are open to applicants from the UK or abroad.

# Five new Fellows of Royal Academy of Engineering

Imperial researchers who are developing medical robots, improving combustion engines, refining mining technologies and creating computer models to advance manufacturing and agriculture have been recognised for their exceptional contribution to engineering.

In the first week of July, the Royal Academy of Engineering announced 53 new Fellows, celebrating the diversity and pervasiveness of twenty-first century engineering in the UK. Five of the Fellows come from Imperial: Professor Jan Cilliers, Chair in Mineral Processing (Earth Science and Engineering), Professor Stephen Muggleton, Royal Academy Chair in Machine Learning (Computing), Professor Constantinos Pantelides (Chemical Engineering and Chemical Technology), Professor Alexander Taylor (Mechanical Engineering), and Professor Guang-Zhong Yang, Director of Medical Imaging from the Institute of Biomedical Engineering and the Department of Computing.

Professor Stephen Richardson, Principal of the Faculty of Engineering, said: "I am absolutely delighted to see so many Imperial researchers elected as Fellows by the Royal Academy of Engineering. This year's cohort demonstrates the essential role that engineering plays in tackling some of



L-R from top: Professors Jan Cilliers, Stephen Muggleton, Constantinos Pantelides, Alexander Taylor and Guang-Zhong Yang

the world's biggest problems. Our new Fellows are also playing a valuable role in contributing to the economy, developing the industries of tomorrow that will drive growth in the UK. On behalf of the entire College, I congratulate our newly elected Fellows. Our academics are the backbone of Imperial."

—COLIN SMITH, COMMUNICATIONS

## Sir Keith O'Nions appointed Rector of Imperial



Sir Keith O'Nions, the College's Acting Rector, has been appointed as Rector until the end of 2013, Imperial's Council announced on 9 July.

Sir Keith joined the College in July 2008 as Director of Imperial's Institute for Security Science and Technology, and brings extensive leadership experience in both academia and government. His appointment as Acting Rector in succession to Sir Roy Anderson began on 1 January 2010.

Chairman of the Court and Council Lord Kerr said: "I'm delighted that Sir Keith has agreed to serve a full term. His first six months have been a tour de force. With him at the helm, we have a highly skilled and experienced captain to

navigate us through some of the most challenging waters that universities have faced in a generation. Keith's deep knowledge of both academia and government means that he understands the challenges and opportunities that lie ahead."

Sir Keith said: "There's never a dull moment at Imperial and it's been a real privilege to immerse myself in all aspects of life here over the past six months. This is a place where excellence flourishes and which attracts people of ability from around the world. I am so impressed by the way that staff and students are always on the lookout for the next opportunity

to apply their knowledge and abilities for the good of quality of life globally."

Prior to joining Imperial in 2008, Sir Keith

held government posts including Director General, Science and Innovation, in the Department for Innovation, Universities and Skills, and Chief Scientific Advisor to both the Department of Trade and Industry and the Ministry of Defence.

—ABIGAIL SMITH, COMMUNICATIONS

For more about Sir Keith O'Nions, visit: [www.imperial.ac.uk/rector/biography](http://www.imperial.ac.uk/rector/biography)

“His first six months have been a tour de force”

### in brief



#### Director of Commercial Services

Mrs Jane Neary, Assistant Director of Commercial Services, has been appointed Director of Commercial Services, with effect from 1 August 2010, in succession to Mr Paddy Jackman, who will be leaving the College after nearly five years' service to become

Bursar of Ardingly College in Sussex. Mrs Neary will report to the Chief Operating Officer, Dr Martin Knight. Mrs Neary joined the College in 2006 as Head of Catering and was promoted to her current position in 2008. Mr Neil Mosley, Head of Sport Imperial, will take on additional responsibilities across Commercial Services and will be appointed as Assistant Director of Commercial Services, also from 1 August.

#### Acting Director of Research Office

Mrs Lynne Cox, Director of Intellectual Property and Research Contracts, has been appointed Acting Director of the central Research Office, with effect from 1 July 2010, in succession to Dr John Green, who will retire from the College on 31 July 2010. She retains her current responsibilities for research contracts and intellectual property and reports to the Deputy Rector, Professor Stephen Richardson.

#### Head of the Department of Mathematics

Dr Emma McCoy has been appointed interim Head of the Department of Mathematics, with effect from 6 July 2010, following the resignation of Professor Ari Laptev. Dr McCoy first joined the Department in 1991 as a PhD student and then became a Research Associate. She was previously Deputy Head of the Department and is a Senior Lecturer.

#### Changes to health, safety and environment management

Following the retirement of Mr Chris Gosling, Director of Health, Safety and Environment Management, from 1 August Dr Rodney Eastwood, College Secretary, will take over the Safety Department and risk management and disaster recovery activities. Mrs Louise Lindsay, Director of HR, will be responsible for the Occupational Health Service. Mr Nick Roalfe, Director of Facilities Management, will be responsible for environmental sustainability activities. Mr Andrew Murphy, Director of Finance, will look after the financial overview of pensions provision.

## Dragons' Den-style competition

At the beginning of July, four teams of Imperial PhD students competed for £20,000 business development money in a *Dragons' Den*-style competition, digitally compered by Evan Davis, host of the BBC programme *Dragons' Den*.

DTC (Doctoral Training Centre) Den 2010 saw three teams from the College's Chemical Biology Centre and one from RASOR, a sister research consortium based in Scotland, pitch their ideas to a panel of experts including the chief executives of three major research councils.

The competition culminated in a live grand final on 30 June, in which an Imperial team called 'Anywhere HPLC' claimed victory with their proposal – a handheld, disposable device which connects to a smartphone, allowing researchers to analyse mixtures, such as groundwater or blood, anywhere with instant results, removing the need to transport samples back to laboratories. Imperial Innovations, the College's technology commercialisation company, will provide support as well as the prize money for developing the concept.



Evan Davis (second from left) with the winning team

Winners Duncan Casey, Ali Salehi-Reyhani and Joseph Kaplinsky (all Chemistry) won out against stiff competition, according to the panel of five judges.

Sir Leszek Borysiewicz, Chief Executive of the Medical Research Council and former Deputy Rector of Imperial, who was one of the judges, said: "The teams showed ingenuity and immense application of research to the themes that they took forward, as well as careful consideration of the business case. It's a credit to all of them."

—JOHN-PAUL JONES, COMMUNICATIONS

## Eco rally

The world's first hybrid, diesel-electric, black cab is one of three green vehicle technologies developed at Imperial that was showcased in a low emission rally on 7 July.

Sixteen teams entered a range of low emission vehicles in the Bridgestone Eco-Rally, which was supported by Imperial and organised to demonstrate the latest in green vehicle technology.

The prototype low-emission black cab (pictured top) has been developed by researchers at EVO Electric, an Imperial spin-out company. Sixty per cent more fuel efficient than current diesel-powered black cabs, the system under the bonnet developed by engineers at EVO has three different modes, depending on driving conditions, which maximise the car's fuel efficiency and minimise its impact on the environment.

Chief engineer of hybrid systems at EVO, Dr Ralph Clague (Earth Science and Engineering), said: "Besides being great fun, we hope that by entering the Eco-Rally we can raise awareness in the community and the taxi industry that there



are cost-effective cars, which have a much lower impact on the environment."

Mechanical Engineering undergraduates displayed their all-electric Suzuki Hayabusa superbike (pictured bottom) at the rally's finishing line in London. Having removed its standard combustion engine, the team has refitted the bike with 90 battery cells and twin

electric motors.

The Eco-Rally began at Brighton's Madeira Drive and finished at the Royal Albert Hall, where Imperial Racing Green students also showcased their go-kart. Team members, who designed and built their hybrid zero emission go-kart, hoped to raise awareness by speaking to passers by about the future benefits of fuel cell technology.

—COLIN SMITH, COMMUNICATIONS

## Cutting edge cancer centre launched

A new cutting edge cancer centre dedicated to robotic surgery, cancer imaging and drug discovery was launched on 23 June, putting London at the forefront of cancer research.

The Imperial Cancer Research UK Centre will see more than 200 clinicians and scientists from Imperial College London and Imperial College Healthcare NHS Trust working together to develop breakthrough treatments for the disease.

The Centre is the latest link in a unique chain of

centres being launched around the country. Cancer Research UK already supports research at Imperial but is set to increase its contribution to £8 million a year to help develop the Centre.

Scientists at the Centre will build on the internationally renowned clinical and research strengths of the Academic Health Science Centre, formed in October 2007 by the College and the Trust. They will develop robotic technology to bring the latest surgical techniques to cancer patients in London. They will also carry out research using the latest imaging techniques to

watch cancer drugs at work inside the patient's body, identifying which treatments work best at an early stage.

Professor Charles Coombes, Head of the Division of Cancer (Surgery and Cancer) at the College and consultant oncologist at the Trust, will help lead the Centre. He said: "We have ambitious plans to develop new cancer therapies and interventions, which will save lives and improve the quality of care, not just in our hospitals, but for cancer patients everywhere. We aim to improve all aspects of cancer care from prevention, detection and early diagnosis, to treatment and palliative care."

—BASED ON A NEWS RELEASE ISSUED BY CANCER RESEARCH UK

“We have ambitious plans to develop new cancer therapies”

## media mentions

—JOHN-PAUL JONES, COMMUNICATIONS



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[www.imperial.ac.uk/media/jointsignon](http://www.imperial.ac.uk/media/jointsignon)

DAILY MAIL ▶ 08.07.2010

### Can chilli pills aid weight loss?



There are doubts over the long term benefits of fashionable diet pills containing capsaicinoids, the active ingredient in chilli, the *Daily Mail* reports. The pills, allegedly favourites with Jennifer Lopez and Brad Pitt, apparently increase the rate of metabolism in the body, and experiments at the University of Oklahoma have shown that 12 times as many calories were burnt by participants who had taken the pills. However Dr Carel le Roux (Medicine), said: “We know that chilli stimulates receptors in the bowel to generate heat. Increased heat means increased energy expenditure, and thus the boost to the metabolic rate. The question, however, is whether or not after a period of time those receptors are switched off, and we think that this is probably what happens.”

THE INDEPENDENT ▶ 12.07.2010

### Better options for patients with health anxiety

Hospital trusts are not dealing with hypochondria due to the money that would be lost from not admitting these patients, according to Professor Peter Tyrer (Medicine), *The Independent* reports. He said nurses trained in cognitive therapy could help up to 50 per cent of patients with health anxiety, according to preliminary studies, but explained there was some reluctance to do so: “We have trusts telling us that they like our treatment as it gets people better and makes them more satisfied with their care, but they are worried that they may suffer a loss of income from reduced attendances so it may not pay them to support our service.”

IRISH TIMES ▶ 12.07.2010

### Water surprise: Life on Saturn’s moon?



The Cassini mission’s discovery of water on Enceladus, one of Saturn’s moons raises the possibility of extraterrestrial life, the *Irish Times* reports. During the mission, which has been photographing Saturn and its moons, plumes of water vapour were spotted on Enceladus, which has a surface temperature of approximately 200 degrees. One of the mission’s research associates, Dr Cairtriona Jackman (Physics) said: “If you have water and heat you have two of the possibilities for life. I wouldn’t bet my house on it, but it is something that we need to look at in greater detail.”

NEW SCIENTIST ▶ 13.07.2010

### Archimedes’ ancient weapon

Legends of how ancient Greek polymath and inventor Archimedes destroyed Roman ships using mirrors directing sunlight may have been validated by an Italian engineer who has developed a possible version of Archimedes’



weapon. The concept involves a solar powered cannon that could have fire flaming projectiles, *New Scientist* reports. Dr Serafina Cuomo (History of Science, Technology and Medicine), however, says there is little evidence for Archimedes constructing such a device, noting the likelihood that Archimedes’ renown may have led others throughout history to credit him with building a range of advanced weapons: “Archimedes became a quasi-mythical icon of the scientist capable of constructing incredible weapons.”

## awards and honours

### NATURAL SCIENCES

#### Innovative bottle recognised



A sustainable Coca-Cola bottle called ‘PlantBottle’, which was developed by Dr Richard Murphy (Life Sciences), has won a gold award for innovation and sustainability in the 22nd DuPont Awards for Packaging Innovation. Through Imperial Consultants, Dr Murphy, Dr Jeremy Woods (Environmental Policy)

and Miss Miao Guo (Life Sciences) carried out a full life-cycle analysis of the product as part of Coca Cola’s development programme. The bottle is made by a process that turns sugar cane and molasses, a by-product of sugar production, into monoethylene glycol, which is a major component of PET plastic. The packaging is made of up to 30 per cent plant-based material and can be recycled in the existing recycling infrastructure.

### ENGINEERING

#### Distinguished alumnus award

Professor Erol Gelenbe (Electrical and Electronic Engineering) has been awarded the Distinguished Alumnus Award by the Polytechnic Institute of New York University

(also known as Brooklyn Poly) where he received his Master’s and PhD degrees. The award recognises Professor Gelenbe’s outstanding leadership and accomplishments in information technology.

### ICT AND FINANCE

#### Oracle award

ICT and Finance have won an award for developing an innovative new ‘e-auction’ module on the College’s Oracle system, ICIS. The new module enables key commodities, such as laboratory and office supplies, computers and IT hardware, to be sourced at a more competitive price. The e-auction module, which is also used by UCL and the Universities of Oxford and Cambridge, works by encouraging suppliers to bid against each other for

the College’s business, and has saved Imperial over £1 million so far. Imperial’s initiative was recognised by Oracle as the ‘Best return on investment project for 2010 within the UK and Eire’, ahead of other prestigious organisations, at an awards dinner on 12 May.

### NATURAL SCIENCES

#### Health and Safety awards

Physics’s Departmental Safety Officer Brian Willey has won the £2,000 first prize in the Rector’s Awards for Health and Safety. A commendation was jointly awarded to Faculty of Medicine user coordinators Stephen Pullen and Trudy Breuss, who received £750 each. Read more about the winners’ efforts at *Reporter Online*: [www3.imperial.ac.uk/news/saferplace](http://www3.imperial.ac.uk/news/saferplace)

## Tackling vaccine-derived poliovirus

A vaccine-derived strain of poliovirus that has spread in recent years is serious but can be tackled with an existing vaccine, according to work by Imperial's MRC Centre for Outbreak Analysis and Modelling and research teams from the government of Nigeria and the World Health Organisation. The study was published on 23 June in the *New England Journal of Medicine*.

Poliovirus is highly infectious and primarily affects children under five years of age. Around one in 200 of the people infected with polio develop permanent paralysis, which can be fatal.

Vaccine-derived polioviruses can emerge on rare occasions in under-immunised populations, when the attenuated virus contained in a vaccine mutates and recombines with other viruses, to create a circulating vaccine-derived strain. Prior to this study, there was little evidence available about the severity and potential impact of such viruses.

The researchers say their findings highlight the importance of completing polio eradication and that, should wild-type poliovirus be

**"It's still vital for us to protect children from this dangerous and debilitating disease"**



A child being vaccinated against polio in Afghanistan, one of the countries identified by the WHO as polio-endemic.

eradicated, routine vaccination with oral polio vaccines will need to cease to prevent further vaccine-derived strains of the virus from emerging.

Lead author of the study, Helen Jenkins (Public Health), said: "It's still vital for us to protect children from this dangerous and debilitating disease and we have to make sure we continue to vaccinate as many children as possible in affected countries for as long as wild-type poliovirus continues to circulate."

The study shows that the effects of the circulating vaccine-derived poliovirus, known as a cVDPV, can be effectively prevented by vaccination using trivalent OPV, one of the main types of vaccine currently used to combat polio. The scientists hope

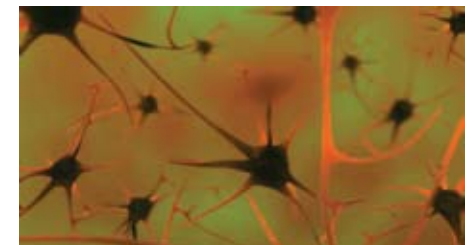
their findings will help countries to devise the right vaccine strategies to eradicate polio.

—LAURA GALLAGHER, COMMUNICATIONS

## Parkinson's treatment one step closer

Researchers funded by the Medical Research Council and Imperial have overcome a major obstacle in developing a transplant treatment that could relieve the symptoms of Parkinson's disease, according to new research published in *Science Translational Medicine*, on 30 June. They hope this discovery will lead to a resurgence in clinical trials in this area.

Research studies in the 1990s showed that the damage caused by Parkinson's disease could be reversed by transplanting brain cells from donated fetal brains into patients with the disease. Some patients showed remarkable improvement in their quality of life, significantly reducing the need for drug treatments.



However, this controversial approach was abandoned in the early 2000s after it emerged that the transplants also caused some patients to suffer from jerky, involuntary movements known as dyskinesias. Until now, nobody knew why this happened or whether this side effect could be successfully treated.

The research team, led by Dr Marios Politis (Medicine), scanned the brains of two transplant patients affected by Parkinson's. The brain scans showed that the involuntary movements were caused by malfunctioning serotonin cells in the area of the brain where the transplants had taken place. The team found they could treat the dyskinesias by prescribing a drug which desensitised the serotonin cells.

Dr Politis said: "After the huge excitement surrounding the potential of brain cell transplants in the 1990s, we are thrilled that this discovery could re-open the door to this promising area of research. We know that the benefits of this treatment could last up to 16 years, and we look forward to bringing this treatment one step closer to a reality for Parkinson's patients."

—BASED ON A NEWS RELEASE ISSUED BY THE MEDICAL RESEARCH COUNCIL



## Mobile phone masts and early childhood cancers

A new study looking at the patterns of early childhood cancers across Great Britain, led by Imperial researchers, has found no association between a mother living near to a mobile phone base station during her pregnancy and the risk of that child developing cancer before reaching the age of five.

The research, published on *bmj.com*, looked at almost 7,000 children aged

0–4 years, 1,397 of whom had leukaemia or a tumour in the brain or central nervous system.

The researchers analysed factors including the approximate distance in metres between the birth address and the nearest mobile phone base station, the total power output for base stations within 700m of the birth address, and the power density for base stations within 1400m of the birth address.

The patterns identified revealed that children with cancer are no more likely to have a birth address near a base station, than those who do not have cancer. The estimated radio frequency exposures to mobile phone base stations were similar for mothers of children with cancer and children acting as controls.

Corresponding author of the study, Professor Paul Elliott (Public Health), said: "People are worried that living near a mobile phone mast might affect their children's health. We looked at this question with respect to risk of cancers in young children. We found no pattern to suggest that the children of mums living near a base station during pregnancy had a greater risk of developing cancer than those who lived elsewhere."

—LAURA GALLAGHER, COMMUNICATIONS

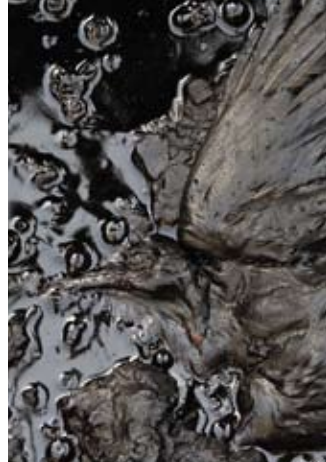
## Oil spills raise arsenic levels in the ocean

Oil spills can increase levels of toxic arsenic in the ocean, creating an additional long-term threat to the marine ecosystem, according to research published on 2 July in the journal *Water Research*.

Arsenic is a poisonous chemical element found in minerals and oil. High levels of arsenic in seawater may lead to the toxin entering the food chain, where it can disrupt photosynthesis in marine plants. As it works its way up the chain, it becomes more concentrated and can kill predators at the top.

Imperial researchers have discovered that the arsenic from oil spills, oil rig waste and underground reservoir leakage partially blocks the ocean's natural filtration system that would usually remove naturally occurring arsenic from the seawater. The researchers say their study sheds light on a new toxic threat from the Gulf of Mexico oil leak.

In the study, the researchers



showed that oil spills and leakages clog up sediments on the ocean floor with oil, preventing them from bonding with the arsenic and burying it safely

**“Study sheds light on a new toxic threat from the Gulf of Mexico oil leak”**

under subsequent layers of sediment. This blockage of the natural filtration system causes arsenic levels in seawater to rise.

Professor Mark Sephton (Earth Science and Engineer-

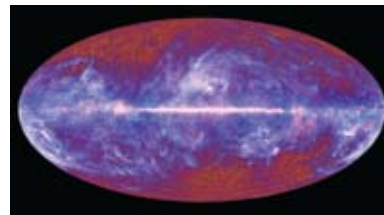
ing) said: “Our study is a timely reminder that oil spills could create a toxic ticking time bomb, which could threaten the fabric of the marine ecosystem in the future.”

—COLIN SMITH, COMMUNICATIONS

## Planck unveils the universe – old and young

The European Space Agency's Planck satellite – on a mission to study the early universe – delivered its first image of the entire sky in early July, which could help provide new insights into the way stars and galaxies form, and reveal how the universe itself came into being.

The satellite was launched in May 2009 with the help of Imperial scientists, since when it has travelled nearly a million miles into space to record the origins of the universe.



Planck looks at the sky in nine different bands, or colours, of microwave light with wavelengths thousands of times those of optical light.

In September 2009, the satellite began to reveal its first pictures showing strips of ancient light across the sky. Now it has beamed back its first all-sky image.

Researchers from a number of UK institutions including Imperial have been involved in the design and construction of the satellite, and they are now working alongside colleagues from around the world to operate the satellite and analyse the data.

Dr David Clements (Physics) said: “Just looking at the pictures, you can tell we're seeing new things about the structure of our galaxy. Once we've done that, and stripped away these foregrounds, then it's on to the cosmic microwave background and the glow of the Big Bang itself!”

By the end of its mission in 2012, Planck will have imaged the whole sky four times. When this work is complete, it will offer the most precise picture of the cosmic microwave background ever obtained, possibly revealing the cosmic signature of the primordial period just after the Big Bang, when the universe expanded enormously over an extremely short period.

—CHRIS NORTH, UNIVERSITY OF CARDIFF

View images and videos of the sky as seen by Planck at <http://sci.esa.int/science-e/www/object/index.cfm?fobjectid=47333>

## Switching off your lights has a big impact

Switching off lights, turning the television off at the mains and using cooler washing cycles could have a bigger impact on reducing carbon dioxide emissions from power stations than previously thought, according to a new study published on 22 June in the journal *Energy Policy*.

Power stations that supply electricity vary in their carbon dioxide emission rates. Those that burn fossil fuels (coal, gas and oil) have higher emissions than those driven by nuclear power and wind, but they can also respond quickly to changes in electricity demand.

The study shows that the figure used by government advisors to estimate the amount of carbon dioxide saved by reducing people's electricity consumption is up to 60 per cent too low. The new study suggests that a more accurate emission figure would come from calculations that focus on power stations dealing with fluctuating demand, which would exclude low emission rate stations, such as wind and nuclear power stations.

Author of the new study, Dr Adam Hawkes (Grantham Institute), said: “This means any reduction we make in our electricity use – for example,



if everyone switched off lights that they weren't using or turned off electric heating earlier in the year – could have a bigger impact on the amount of carbon dioxide emitted by power stations than previously thought.”

—LUCY GOODCHILD, COMMUNICATIONS

# Remembering former Rector Brian Flowers

The Rt Hon. Lord Flowers of Queen's Gate FIC, FRS, one of Imperial's longest serving and most popular Rectors, died on 25 June 2010 at the age of 85. *Reporter* reflects on his contributions, which formed the building blocks of the modern College.

**Brian Flowers, a physicist, led Imperial for 12 years from 1973. Speaking before the College's centenary in 2007, he said that being Rector of Imperial was the pinnacle of his career, one which spanned the worlds of science, academia, politics and public service. He is survived by his wife, Mary, and will be greatly missed by all who knew him.**

## Renowned physicist

Born in 1924, Lord Flowers studied physics and electronics at Cambridge, before working as part of an Anglo-Canadian project focused on nuclear weapon development during World War II.

After the war he continued his research at the Atomic Energy Research Establishment at Harwell, becoming Head of Theoretical Physics in 1952 and pioneering computing methods to solve problems relating to the nuclear structure. He was elected a Fellow of the Royal Society in 1961 at the age of 36.

He went on to hold academic posts in the Universities of Birmingham and Manchester, before becoming Imperial's 10th Rector in 1973.

## Interdisciplinary research and teaching

Lord Flowers's enthusiasm for the opportunities offered by collaborations across scientific disciplines, fuelled during his time as chairman of the Science Research Council from 1967–73, led him to found the Centre for Environmental Technology at Imperial in 1976, which brought together environmental research at the College. The new Centre allowed Imperial to take the lead in providing technological solutions to environmental problems – a path which the College continues along today through the work of the Centre for Environmental Policy, the Energy Futures Lab and the Grantham Institute for Climate Change.

Attuned to industrial trends, Brian Flowers drove the modernisation of undergraduate courses, recognising the importance of training students for their future careers. Engineering courses were developed to provide students with greater industrial experience and, aware of the increasingly important role of information technology, under Flowers all departments were asked to teach computing skills.

Flowers's vision of a new framework for medical education in London led to one of the most significant developments in Imperial's history – the integration of a number of

medical schools with the College. Although the realisation followed his time as Rector, Flowers's report, commissioned by the Vice Chancellor of the University of London and published in 1980, while he was still leading the College, proposed the merger of a number of the many free-standing undergraduate medical schools and their amalgamation with multi-faculty colleges.

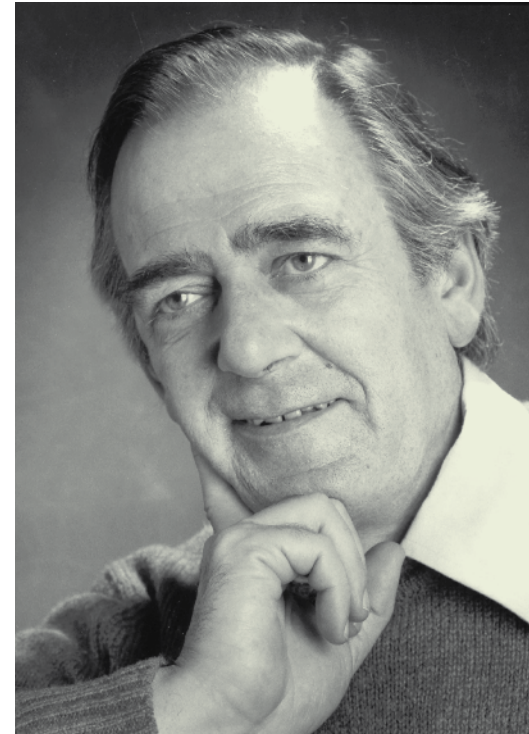
In 1971 the College conferred upon him its highest honour, the Fellowship of Imperial College.

## Supporter of students

Lord Flowers often commented that his wife, Mary, shared his job. Together they sought to catalyse good social relationships with and between students. They were renowned hosts of twice-termly 'beer and bangers' parties, inviting large numbers into their residence at 170 Queen's Gate.

In return, Imperial College Union threw its own party for the Flowers at the end of his Rectorship, culminating in a celebratory trip around west London in Bo', a veteran car dating from 1902, owned and cared for by engineering students at Imperial.

Following his Rectorship, Lord Flowers was Vice-Chancellor of the University of London from 1985–90 and Chancellor of the University of Manchester from 1994–2001.



## National and international life

During his time as Rector, Flowers chaired the Royal Commission on Environmental Pollution, and served as the chairman of the Committee of Vice-Chancellors and Principals, now known as Universities UK, the umbrella body for all UK universities. For six years he was president of the European Science Foundation, and as Rector he also began routine visits to south east Asia and Japan to promote the College overseas. He was made an Officer of the Legion d'Honneur in 1981 – an honour of which he was extremely proud.

In addition to his high profile in science and academia, Lord Flowers is also notable for being one of the founding members of the Social Democratic Party, created in 1981.

He was knighted in 1969 and made a life peer in 1979, when he became Lord Flowers of Queen's Gate, the London street on which he lived as Rector.

—CAROLINE DAVIS AND ABIGAIL SMITH,  
COMMUNICATIONS

To read the full obituary visit:  
[www3.imperial.ac.uk/news/lordflowers](http://www3.imperial.ac.uk/news/lordflowers)



### Lord Flowers in pictures

- 1) Lord and Lady Flowers pictured at the Royal Geographical Society in March 2001.
- 2) Her Royal Highness The Princess Royal, Chancellor of the University of London, with Lord Flowers, then Vice Chancellor of the University of London, visiting the Departments of Pure and Applied Biology at Silwood Park in 1988.
- 3) Brian Flowers was made a life peer as Lord Flowers of Queen's Gate in the City of Westminster in 1979.
- 4) Former Rectors Sir Richard Sykes (2001-08), The Lord Oxburgh (1993-2000), Sir Eric Ash (1985-93), The Rt Hon. Lord Flowers (1973-1985) (from left to right).



# Your memories

Over the last month, tributes for Lord Flowers have flooded into *Reporter online*. Here are just some of the things you have been saying.

## Flowers's foresight



"It was typical of Brian Flowers's extraordinary foresight that 30 years ago

he established an environmental law lecturership at Imperial, at a time when few other UK universities had even shown an interest in the subject. Equally typical of his lack of snobbery and pretension, he approved the appointment to the post of a callow young lawyer from Friends of the Earth, an organisation which then seemed to many to be promoting irrational and unscientific policies. I don't think either of us expected the experience to lead to me being appointed the UK's first environmental law professor some twelve years later but I have never forgotten the opportunity that Brian provided at the time."

—Professor Richard Macrory, Professor of Environmental Law (1991–94 and 1995–99)

"Brian Flowers had presence. Hearsay has it that when he entered the room to be interviewed for the post of Rector there was an instinctive recognition that 'this is the man'. And so it proved."

—Peter Mee, Registrar at Imperial (1967–96)

## Hard act to follow



"I had the near impossible task of succeeding Brian Flowers as Rector in 1985.

I had known – and admired him – for many years, but then saw a great deal of him as he passed the baton to me. His enthusiasm for the College was unbounded. The warmth of his personal attachment to the staff was evident – a major factor in the success of his leadership. Perhaps less well known was his dry sense of humour which from time to time informed and enlightened his views. I remember a comment he made to me on departing: 'Imperial academics are an arrogant set of b...s, but then they have so much to be arrogant about'."

—Sir Eric Ash, Rector of Imperial (1985–93)

## Interdisciplinary teaching



"The creation of the interdisciplinary and interdepartmental teaching and

research Centres by Brian Flowers is a lasting illustration of his imaginative and creative vision as Rector from which the College has benefited scientifically and financially over several decades. He seemed to have the foresight of the emerging areas of scientific development and a special ability to bring together the appropriate people around the College to lead the activities at Imperial."

—Professor Garry E. Hunt (Centre for Remote Sensing 1982–86)

## Centre for Environmental Technology



"In everything that Brian Flowers did at Imperial he set high standards. He was

a person of great integrity, honest and transparent in his dealings with us all. The only thing he got wrong was to tell me that the Centre for Environmental Technology would probably only last for five years or so – but he assured me it would still be a worthwhile venture. As it happened it has lasted to the present day (now called the Centre for Environmental Policy) – over 35 years and taking in 150 masters students a year – and is emulated by a cluster of other cross-disciplinary centres in the College. I reminded him of this when I saw him just a week ago. He chuckled, knowing full well that he had given us a challenge we could not resist."

—Professor Sir Gordon Conway (Centre for Environmental Policy)

"Brian was a giant of a man in so many ways. He did not suffer fools gladly but his forthright style was matched by his essential humanity and kindness."

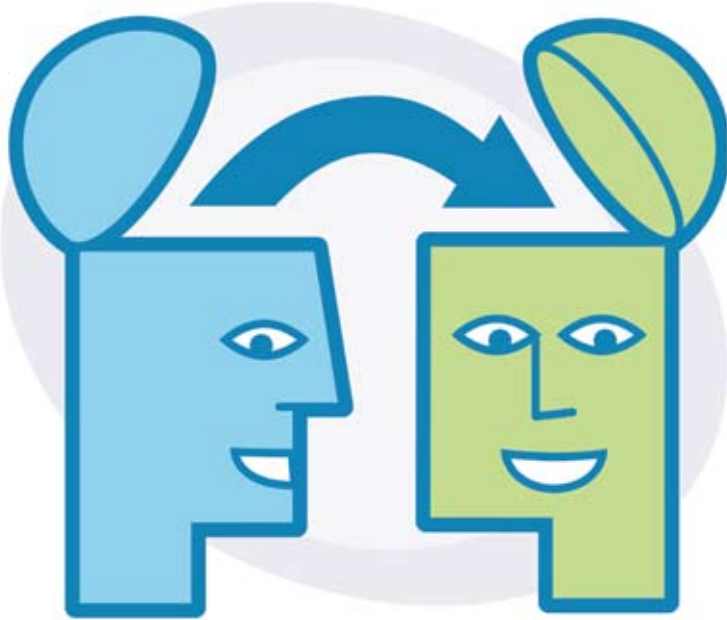
—Professor Sir David Melville

## Human touch

"Brian Flowers time as Rector was unique in many ways. You have to go back a long while to find someone who was asked to be Rector, as he was, for 12 years. He and his wife Mary were not only a main part of Imperial they were Imperial!"

—Mr Colin Grimshaw (Communications)

Share your memories at:  
[www3.imperial.ac.uk/news/lordflowers](http://www3.imperial.ac.uk/news/lordflowers)



## Transferring the source of knowledge

Imperial has always sought to bring practical benefits to society through the transfer of knowledge; indeed its founding charter of 1907 emphasised the importance of undertaking research which has ‘application to industry’. Today more and more organisations are turning to universities to access their wealth of knowledge and specialised expertise which often cannot be found elsewhere. *Reporter* speaks to researchers across the College who are expanding the reach of their work through consultancy.

### Communicating research

Dr Sunday Popo-Ola, a research and teaching fellow (Civil and Environmental Engineering), has been at Imperial for over 15 years and a consultant since he completed his PhD. He has worked on a range of consultancy projects from testing concrete structures to advising on bridge design.

Sunday is passionate about using consultancy to take his structural engineering research to a wider audience. “What’s the point of research being hidden away in universities when it could be much more relevant out in the real world, potentially changing people’s lives?” he asks.

And with over 600 Imperial staff members actively consulting alongside their research, Sunday’s not alone. Last year

Imperial Consultants, which connects external organisations with experts at the College, worked with over 300 companies, including household names such as Shell, Coca-Cola and Unilever, and achieved a turnover of £15.2 million.

### Working on real-life problems

Mr Dave Taylor, from the Medical Media and Design Laboratory in the Faculty of Medicine, is working with the Memorial Sloan-Kettering Cancer Center in New York on a consultancy project involving the popular three-dimensional virtual world, Second Life.

Dave and his team are experts in using virtual environments for healthcare education and collaboration, working under Professor Lord Ara Darzi to redefine the way new digital media is used in healthcare.

Working with the cancer centre, they have been building a Second Life imitation of a real chemotherapy clinic being constructed in Brooklyn. The clinic will approach chemotherapy treatment in a completely different way to traditional hospitals, and the digital version will help staff

and patients get used to the novel concepts it will use.

“Typically, staff only have a few days to get used to a new hospital building before it opens to the public,” explains Dave. “By replicating the building in Second Life, staff

can train for much longer beforehand in the virtual hospital, testing their operating procedures and planning their daily routines.”

Dave hopes that their research into Second Life can be used by hospitals across the world to test out new buildings, as well as prepare for evacuations and fires, something not usually possible in a busy hospital with vulnerable patients.

### Providing experience for PhDs

Dr Emile Greenhalgh, a reader in composite materials (Aeronautics), is a leading expert in fractography – the study of fracture surfaces of materials, often used to determine the cause of failure in engineering structures. Emile has written one of the only books in the field and worked for many years at QinetiQ in composite materials research and testing – all of which makes him a prime candidate for consultancy work.

His consultancy projects involve evaluating two material specimens (supplied by the client) to identify differences in properties and find out, for example, why one material is under-performing compared to the other.

Emile particularly values his consultancy projects as they expose the Department’s PhD students and postdocs to real-life problems. “They get the chance to get involved with the testing and get paid for it. The consultancy work also helps them to develop knowledge and skills relevant to the industry. It also benefits the Department when the income from the consultancy work goes back into research funds, studentships and new equipment.”

### Furthering research

The majority of consultancy placements Imperial Consultants manages are generated by researchers who develop contacts with industry. For example, lecturer Dr Michael Templeton (Civil and Environmental Engineering), often comes into contact with water industry representatives through his research into drinking water treatment technologies and contaminants. Michael says he always makes sure that any consultancy project links to his research interests and is likely to lead to publishable results.

Recently he worked with DEFRA, to make recommendations about potential nitrogen by-products in UK drinking water, which will lead to funding for further research in this area. By undertaking consultancy work Michael is able to apply his research to real-life problems which could affect us all.

— KATIE WEEKS, IMPERIAL CONSULTANTS

To find out more Imperial Consultants visit:  
[www.imperial-consultants.co.uk](http://www.imperial-consultants.co.uk)

# inside

## story

### mini profile



## Erol Gelenbe

Professor Erol Gelenbe, Head of Intelligent Systems and Networks (Electrical and Electronic Engineering), on researching networks, from computers to mammals' brains.

### What are you investigating in your research?

I've launched a number of different research areas, all focused on what we can learn about networks, through mathematics and experimentation. I also look at applying these network theories to different subject areas, from biology to economics.

### What exactly is a network?

A network has three elements: a significantly complex individual unit that you can identify, the ability for that unit to have some sort of relationship with other units that will influence the behaviour of each of the interacting units, and finally, enough of these units interacting with each other to qualify as a network. With these components a network can be anything – it's not just about interlinked computers.

### What's the advantage of looking at network behaviours in so many different contexts?

The principles you discover in one context can apply to another. For example, in some of my research I've taken ideas from the behaviour of neurones in a mammal's brain and applied them to improve a computing network's efficiency.

### You've worked on your papers with over 140 co-authors in Belgium, the United States, France and the UK – is international networking essential to you?

I really enjoy working with other people. However, if an idea is in its infancy I prefer to explore it alone – to make sure it works before I involve others. Working so internationally has been quite accidental. When I was a student in Turkey, I headed to the USA to do a PhD, and then an opportunity came up in Belgium and later in Paris after that.

### How important is variety to you in your work?

Perhaps I'm not a typical academic in that I tend to get bored around methods or ideas that I feel I understand well, so once I've achieved a certain level of understanding my preference is to move on to explore something else.

—JOHN-PAUL JONES, COMMUNICATIONS

## CIPM scientific research meeting

Dr Lydia Drumright, a non-clinical lecturer from the Centre for Infection Prevention and Management (CIPM) in the Department of Medicine, reports on an event held on 17 June to showcase the Centre's work.



The CIPM group with collaborators

The event was organised to disseminate research findings and activities in the Centre over the past year and is set to become an annual event.

Presentations included Dr Clare Turner (Medicine) speaking about her work with the Health Protection Agency, the NHS and the Sanger Institute to investigate an outbreak of postpartum sepsis, a potentially lethal infection that can occur in new mothers; Rachel Edwards, the CIPM Project Implementation Nurse, on how verbal and written communications in hospital can influence healthcare practice; and Dr Paul Aylin (Public Health)

talking about collaborations between CIPM and Imperial College Healthcare NHS Trust that have allowed hospital data to be utilised for high-level hospital infection surveillance.

Professor Lord Darzi (Surgery and Cancer) provided supportive and warm comments about the successes of CIPM in the opening presentation of the meeting, highlighting the Centre as a unique and powerful consortium, which has the potential to reduce the personal and financial costs of healthcare acquired infections."

For more details visit: [www1.imperial.ac.uk/medicine/about/institutes/cipm](http://www1.imperial.ac.uk/medicine/about/institutes/cipm)

### ► SCIENCE FROM SCRATCH

As explained by Anne Coleman, MSc Science Communication



## Entropy



Entropy comes from a Greek word meaning 'transformation'. In 1850 entropy was defined as 'energy gone to waste' and this definition has evolved over time. Entropy is now more commonly thought of as how much energy is dispersed during a process. Think of a burning log fire; as the logs burn, heat and light energy are lost to the surroundings. This means that the entropy of the 'system' of the burning fire is increasing. Entropy also has links with cosmology. The entropy of the universe is generally thought to be increasing, giving rise to speculation that the energy dispersed as heat could contribute to the end of the universe, known as 'heat death'.

Is there a phrase or term you would like us to explain? ✉ Email the editor: [reporter@imperial.ac.uk](mailto:reporter@imperial.ac.uk)

IMPERIAL STUDENTS SHARE THEIR EXPERIENCES OF LIFE AT THE COLLEGE ON THE STUDENT BLOGGERS WEBSITE.

## Student blogger Chris on scoring an internship at Apple:

"I was doing the usual: Twitter, Facebook and writing for the blog when suddenly my phone rings from an unknown landline number. It was a lovely woman by the name of Debbie who told me I had been accepted to work at Apple for their summer internship program. I believe I went speechless, then uncomfortably loud, then proceeded to leave the library by means of backflips, skips and any other unnatural motion my body could muster. I was so utterly astonished that I would be working for the company I've adored, loved, embraced and, quite frankly, worshipped for the past few years."

[www.imperial.ac.uk/campus\\_life/studentblogs](http://www.imperial.ac.uk/campus_life/studentblogs)

blog  
SPOT



## Imperial Constructionarium 2010

This year's *Constructionarium* event – a hands-on construction experience for civil engineering students – took place at a special construction site set up at the National Construction College in Norfolk between 20–25 June. *Constructionarium* teaching was pioneered by Imperial in 2003 and the approach has been adopted by 16 universities nationally. Ms Alison Ahearn and Dr Sunday Popo-Ola (both Civil and Environmental Engineering) report on the 2010 event for Imperial students, which they helped to run.

"*Constructionarium 2010* saw 200 student civil engineers build 10 structures in five days, including a 20-tonne oil rig, three bridges, two towers and a four-storey 'Gherkin' skyscraper. The event involved all Imperial second and third year civil engineering students forming mini construction companies, complete with budget officers and contract negotiators. Supervised by a mix of Imperial staff, industry engineers from John Doyle Construction and Expedition Engineering, and engineering alumni volunteers, the students ran a regime of breakfast meetings from 6.30, followed by early starts on site where concrete wagons rolled in up to four times per day. Most teams made four to five per cent profit on their projects,

"Most of the students had been novices five days earlier but by the end of the week they could justify using the title 'engineer'"



with one team managing a record-busting nine per cent profit by recycling or reusing their waste materials by selling them on to other teams, instead of disposing of them as waste. The pace was hectic, so risk management was always at the forefront. Most of the students had been novices five days earlier but by the end of the week they could justify using the title 'engineer', having turned engineering drawings into a sizeable structure."

### ▶ TIME OUT

## Silwood Green Club

Potato peelings, old cardboard boxes and used teabags are some of the compostable materials that will be transformed in 12 months time into nutrition for the next generation of plants or vegetables, thanks to the work of Silwood Park Campus's Green Club. Before the Green Club was set up, Silwood was without a composting and recycling system – absurd for an ecology campus. After all, as club member Lynsey McInnes (Life Sciences) points out, "It's such an easy way to make a difference". Now there's a campus-wide environmental group with representatives from all departments to prioritise and plan ways to demonstrate the campus's green credentials.

Half an hour each week is enough to get involved. For those who don't want to get their hands dirty, there are bake sales and green awareness weeks to organise. Proceeds go to the Silwood Park Centenary Reserve, which has raised £5,000 since 2007; enough to save more than 150 acres of rainforest in Ecuador from development. Anyone can take part, with current club members including Master's students and postdocs.

For former club president, Louise Cuttiford (Life Sciences) it was her passion for green issues, and her drive to promote them, that led her to join the club. "It's amazing how difficult it is to get people interested in green issues – even biologists and ecologists," she says. However Lue convinced people to join and over the last year,



The refractory compost bins produce fertiliser for growing vegetables on the campus allotments and feeds the chickens.

Green Club members have raised awareness of their work by selling cakes to raise funds for green causes, have handed out flyers and used their powers of persuasion to get people to sign up to the 10/10 scheme: a project which aims to unite all sectors of society by working towards a common target of cutting emissions by 10 per cent this year.

—NAOMI THORNE, LIFE SCIENCES

### The facts

- **Society size:** 20
- **Equipment:** Enthusiasm and vegetable peelings
- **Meeting times:** Vary, organised by email
- **Donations:** To donate to the Silwood Park Centenary Reserve and save a corner of rainforest go to: [www.justgiving.com/offset\\_silwood\\_carbon](http://www.justgiving.com/offset_silwood_carbon)



**Professor of Cancer Biology Mustafa Djamgoz (Life Sciences) is an expert on metastatic cancer. He established the Pro Cancer Research Fund in 2002, founded the therapeutics company Navion in 2009 and holds two further patents.**

#### What is novel about your research?

Most current cancer treatments, such as chemotherapy, attack all the body's cells, not just those with the disease. Our research proved that electrical signalling differs between benign and metastatic cells (cancer cells that have become aggressive), meaning that there is a chance of controlling cancer through its bioelectricity. My team was the first to use electrophysiological techniques to investigate cancer in this way. We discovered that the ion-channel protein we found specifically in metastatic cells

## INVENTOR'S CORNER Combatting cancer

could enable early diagnosis, and that it may be possible to block that channel and suppress the formation of secondary tumours with drugs similar to the toxin found in pufferfish. The new techniques we are developing could possibly reduce, or even eliminate, the need for chemotherapy.

"The new techniques...could possibly reduce, or even eliminate, the need for chemotherapy"

#### Did you come across any resistance along the way?

Bringing a new method into oncology meant our initial findings were viewed critically by our peers, as they were sceptical about the benefits it could offer. I had to educate the field before progress could

be made but our perseverance was worth it, as we've now opened up new funding and clinical opportunities.

#### How did your charity Pro Cancer Research Fund begin?

It was set up following the public's response to an article in *The Sunday Times*, which reported our breakthrough research into determining which cancerous cells are likely to spread and which are not. It's the charity which has kept the critical stages of the whole thing afloat.

#### What lies ahead?

In 2009, with the help of Imperial Innovations, I founded a company called Navion, which aims to develop a monoclonal antibody ('magic bullet') to achieve effective, non-toxic drug therapy using the electrical signals and their proteins as a map to target just the tumour. Presently our work is focused on prostate and breast cancer, but we are confident that our new techniques are likely to benefit patients with other forms of the disease.

—ANOUSHKA WARDEN, IMPERIAL INNOVATIONS

## DRUID conference

Tom Horner, an MSc Science Communication student, reports on helping out at the DRUID innovation and technology conference, hosted by Imperial College Business School, between 15–18 July.



"I spent six weeks organising a tour of the Science Museum for 150 delegates of the DRUID conference – an international affair attracting about 400 academics and industry leaders from around the globe.

I was asked to put together the tour as part of a three-day events programme that also included a meal in the shadow of the diplodocus skeleton at the Natural History Museum.

"Tour guides focused on the stories behind the objects and the characters that shaped those stories"

What started off as a tempting little 'proposition' by the Head of my Department soon ballooned to encompass most of my spare time. However, with the help of Alan Worman, a Science Museum employee, magician and purveyor of bizarre facts, and after rounding up a cohort of Imperial's most engaging students, I eventually got together a made-to-measure tour of the museum. The theme of the tour was British innovation but instead of spouting technical facts and figures, tour guides focused on the stories behind the objects and the characters that shaped those stories; the giant red-haired wrestler who invented a revolutionary steam engine, the gold digger who funded an airborne drag race and the reputed engineer, who may have also been an insurance fraudster."



"Traffic, heat, excitement and perhaps a tiny competitive edge made it literally a breathtaking finish"

## From London to Paris

On 23 June Russ Cummings, Chief Investment Officer at Imperial Innovations (pictured second from left), set out with five work colleagues to cycle from London to Paris in support of The Prince's Trust. Russ reports on his experience.

"After many months of training we were finally at the starting line. But within a mile, 25 of the 40 members of the group were lost after taking a wrong turn! After completing a two-mile detour we were back on track. By lunchtime we were beginning to feel the pace but by mile 70, the day's pain was temporarily over and we enjoyed a fast 20 mph descent into Dover. After hitting French soil at dusk, we had a gentle eight-mile warm down to the hotel.

Mid afternoon the following day saw us tackling a five-mile stretch of continual uphill, culminating in a series of hairpin bends from the village of Houdain. On our third day poppy-lined fields, punctuated by all too brief stops at the World War II cemeteries around the town of Cléry-sur-Somme, passed us by.

On to the final day and the moment we'd all been building up to – the 17-mile run into Paris. Traffic, heat, excitement and perhaps a tiny competitive edge made it literally a breathtaking finish."

So far Russ has raised £3,060. To sponsor him, visit [www.justgiving.com/Russell-Cummings](http://www.justgiving.com/Russell-Cummings)

## obituaries



### PROFESSOR JAROSLAV STARK

Professor Jaroslav Stark, Chair in Applied Mathematics (Mathematics), died on 6 June 2010. Professor John Elgin (Mathematics), who worked closely with him, pays tribute:

“Jaroslav Stark was born in Pardubice, Czechoslovakia, in 1960 and moved with his family to London in

1968. After studying Part III of the Maths Tripos at Cambridge, he joined the newly formed Mathematics Institute at the University of Warwick, where he gained a PhD in the emergent field of dynamical systems theory.

Jaroslav was an applied mathematician. As such, he held strongly the belief that the language of mathematics is the most precise way of making a meaningful statement about any given system. The term ‘applied’ is important here, since this reflects the need for the mathematician to ‘build’ a model of the system under study: in particular, how does one construct a model of a biological system without the knowledge of how such systems work? To gain this knowledge, Jaroslav took a two-year break to study biology.

In January 2003 he moved to the Department of Mathematics at Imperial, where he founded the mathematical biology group, and in 2007 he became Director of the Centre for Integrative Systems Biology.

Jaroslav became a key figure in cross-disciplinary research in the UK, pioneering the use of mathematics to study biological systems. Thanks to his enthusiasm, clever use of images, clarity of thought and crystal-clear prose, the developmental biologists and immunologists he worked with could quickly grasp the implications of his mathematics. This allowed mathematicians and biologists to generate mathematical models which enable them to understand complex biological problems.

Jaroslav is survived by his wife, Kate Hardy (Professor of Reproductive Biology, SORA), his son, Daniel, and his father, Jaroslav.”

## Trail blazing Charing Cross

Carol Doan, a fourth year medical student, has just completed a research project looking at the experiences of female medical students at Charing Cross Campus in the early twentieth century with the help of Anne Barrett, College Archivist and Corporate Records Manager. Carol says:

“Charing Cross was a trail blazer, accepting women while other institutions lagged behind, unwilling to train female doctors until much later. During the First World War, Charing Cross started admitting women on the same terms as men, and carried on doing so until 1928, although most colleges stopped admitting females when the men returned from the war. The Dean at the time, Dr Fenton, was very pro women; he thought it was logical to accept them and that we should all be equal. But when the Dean retired due to ill health in 1927, his successor, Dr Young, had strong views that unfortunately stuck and women were not admitted again until after World War II. Under University of London policy by that time, they had to accept women to get grant funding. What I found out surprised me, because nowadays both men and women can study medicine, and I took this for granted. But women didn’t always have the same equal opportunities, particularly in medicine, which was always a male dominated area. It was shocking the way some med schools treated women, but Charing Cross was different.”

—EMILY GOVAN, INTERNATIONAL OFFICE

long  
service

Reporter features staff who have given many years of service to the College.

Staff listed below celebrate anniversaries in the period 19 August–1 September. Data is supplied by HR and is correct at the time of going to press.

### 30 years

- Mr Russell Carter, Technician (Aeronautics)

### 40 years

- Professor John Graham, Senior Research Investigator (Aeronautics)

## figuring it out

# ONE MILLION

The number of visits to the Central Library on the South Kensington

Campus between 1 August 2009 and 30 June 2010 ▶ The Library has seen a steady increase in visitors since it modernised the ground floor in 2008.

Data is correct at the time of going to press. If your department has some statistics you’d like to share with the rest of the College, please forward them to: [reporter@imperial.ac.uk](mailto:reporter@imperial.ac.uk)

## Miles for Matthew

Bob Forsyth, former Senior Tutor in the Department of Physics, reports on a 200-mile walk from Imperial to Stafford undertaken by Andy Smith in memory of his son Matthew, a former Imperial student, who died tragically in a road accident last September, aged 23.

“I got to know Matthew (Smithers to his friends) not long after he arrived at Imperial as an undergraduate in 2004, as he didn’t have the easiest time settling in. But he subsequently made many good friends, particularly in the Science Fiction Society, and my little contact with him in later years was a mark of how well he eventually did find his feet. After graduating, he went to work for electricity generation and distribution



Andy Smith (pictured far right) sets out on the walk in memory of his son.

technologies company AREVA in Stafford, hence the end point of the walk his dad undertook to pay tribute. Matthew had good prospects of moving to France to work in the company’s nuclear power division, a technology that Matthew felt received an unfair press, but sadly he never had the chance

to fulfil all his ambitions.

Andy’s walk in memory of his son, accompanied by his friend Mike Young, began in Beit Quad on the South Kensington Campus on Sunday 13 June, preceded by a visit to Imperial’s Science Fiction Library. Waved off by the Physics Senior Tutor, Professor Ray Murray, 12 of us, including family and Imperial friends, set off across Hyde Park but gradually dispersed, so that beyond five miles it was just Andy, Mike and me. Being a keen walker myself, and sucked in by Andy’s and Mike’s infectious enthusiasm, I joined them for three subsequent weekend days of the walk as they wound along rural canal towpaths through Oxfordshire and Warwickshire in beautiful sunny weather, accompanied one day by Danny Segal, Matthew’s personal tutor at Imperial.”

For the full story of Andy’s walk visit: [www3.imperial.ac.uk/news/matthew](http://www3.imperial.ac.uk/news/matthew)

## Welcome new starters

Miss Deeqa Aden, Medicine  
 Miss Marie-Laure Aknin, Medicine  
 Miss Honorine Avenie, Finance  
 Dr Clement Barriere, Surgery and Cancer  
 Dr Michael Beaton, Electrical and Electronic Engineering  
 Mr Adam Candy, ESE  
 Dr Marta Castagnini, Medicine  
 Dr Jie Chen, Mechanical Engineering  
 Dr Chun-yea Cheng, Chemical Engineering and Chemical Technology  
 Mr Colin Clarke, NHLI  
 Miss Victoria Crome, Medicine  
 Miss Lara Davidson, Medicine  
 Dr David Estruch, Aeronautics  
 Dr Julian Farmer, Chemistry  
 Dr Ignacio Gallo, Mathematical Sciences  
 Mr Nicholas Glanville, NHLI  
 Mr Ben Godsall, Biology  
 Ms Dina Grishin, Surgery and Cancer  
 Ms Qi Guo, Medicine  
 Mr Matthew Hadrill, Humanities  
 Miss Camilla Halewood, Mechanical Engineering  
 Dr David Hastie, Public Health  
 Dr Lucy Heinemann, NHLI  
 Dr Fabian Jutz, Chemistry  
 Dr Nikolaos Kantas, EEE  
 Dr Sarika Kapoor, NHLI

Professor Myungshik Kim, Physics  
 Dr Izabela Komarowska, Medicine  
 Ms Nikki Krol, Medicine  
 Dr Sylvain Ladame, Bioengineering  
 Dr Dominic Lee, Chemistry  
 Dr Verity Leeson, Medicine  
 Dr Xiaofeng Li, Physics  
 Mr Manuel Liebecke, Surgery and Cancer  
 Dr Elena Lugli, Kennedy Institute  
 Dr Johann Malawana, Surgery and Cancer  
 Dr Massimo Marenzana, Bioengineering  
 Ms Rebecca Metcalf, Medicine  
 Mr Mohamed Mohamed, Mechanical Engineering  
 Ms Tracey Nolan, NHLI  
 Dr Bidyut Pal, Mechanical Engineering  
 Ms Sandra Peak, NHLI  
 Dr Apostolos Pesiridis, Mechanical Engineering  
 Dr Yvonne Pinto, Environmental Policy  
 Miss Michelle Pugh, NHLI  
 Miss Rebecca Robey, Medicine  
 Dr Sohag Saleh, Medicine  
 Dr Munazza Shahid, Chemistry  
 Mr Thomas Walpuski, Mathematics  
 Dr Claudia Walter, Materials  
 Mr Marc Wells, Business School  
 Miss Claire Wenden, NHLI  
 Ms Linda Wijlaars, Public Health  
 Mr Ben Wilkins, Medicine  
 Dr Andrew Wynn, Aeronautics

## Farewell moving on

Dr Ali Abbas, Civil and Environmental Engineering  
 Dr Maha Ahmed Shaikh, Business School  
 Ms Isobel Anderson, Surgery and Cancer (6 years)  
 Dr Julian Asher, Medicine  
 Dr James Atteck, Mechanical Engineering  
 Miss Juliana Beckers, Sport and Leisure  
 Mr Max Cai, Computing  
 Miss Hollie Cancro, Sport and Leisure  
 Miss Charlotte Chaney, Educational Quality  
 Mr Ben Chisnall, Planning  
 Dr Angela Clerk, NHLI (13 years)  
 Professor Matthew Coop, Civil and Environmental Engineering (9 years)  
 Miss Karina Corware, Medicine  
 Miss Rosemary Dalton, Human Resources  
 Mr Omisore Dickson, Catering Services  
 Dr Peter Dodd, Public Health (9 years)  
 Dr Odile Dumont, NHLI  
 Dr Ayman Elshkaki, Centre for Environmental Policy  
 Ms Sarah Essilfie-Quaye, NHLI  
 Dr Steve Fuller, NHLI  
 Dr Oliver Gaemperli, Medicine  
 Dr Lutz-Christian Gerhardt, Materials

Mrs Helen Gilmour, Library (19 years)  
 Mr Davide Grandolfo, NHLI  
 Dr William Hanage, Public Health (9 years)  
 Dr Adam Hawkes, Grantham Institute (7 years)  
 Dr Jongin Hong, Chemistry  
 Mr James Inglis, Mathematics  
 Mrs Rachel Israel, NHLI  
 Mr John James, Imperial College Union  
 Dr Isaac Jamieson, Public Health  
 Dr Panos Karamertzanis, Chemical Engineering and Chemical Technology  
 Dr Fu Liu, Chemical Engineering and Chemical Technology  
 Dr Yutie Liu, Chemical Engineering and Chemical Technology  
 Dr Martin Lukac, Biology  
 Miss Emma Mackenzie, EYEC  
 Dr Thomais Markou, NHLI  
 Dr Andre Moeller, Clinical Sciences  
 Mr Brendan Molloy, ICT (34 years)  
 Dr Christopher Moore, NHLI  
 Mr Robert Osborne, Imperial College Union  
 Ms Susanne Raum, Environmental Policy  
 Dr Tushar Salukhe, NHLI  
 Mrs Anitha Samsonroy, Medicine  
 Dr Peter Schmid, Surgery and Cancer (5 years)  
 Miss Anna Serra da Costa Franca, Clinical Sciences  
 Professor Peter Sugden, NHLI

Dr Laura Torrente Murciano, Chemical Engineering and Chemical Technology  
 Dr Markos Trichas, Physics  
 Dr Antony Valentini, Physics  
 Ms Geraldine Vaughan, Educational Quality  
 Miss Jill Waddingham, Surgery and Cancer  
 Dr Yun Zhou, Electrical and Electronic Engineering

## retirements

Mrs Elizabeth Evans, Surgery and Cancer  
 Mr Michael Milne, Medicine (14 years)  
 Mrs Vernetice Rice, Mechanical Engineering (17 years)

This data is supplied by HR and covers the period 26 May–15 June. It was correct at the time of going to press. Years of service are given where an individual has been a member of College staff for over five years. Asterisk (\*) indicates where an individual will continue to play an active role in College life.

✉ Please send your images and/or comments about new starters, leavers and retirees to the Editor at [reporter@imperial.ac.uk](mailto:reporter@imperial.ac.uk)

The Editor reserves the right to edit or amend these as necessary.

## Sir Peter Knight moves to Kavli



From 1 October, Deputy Rector Sir Peter Knight will become the first Principal of the Kavli Royal Society International Centre, a new residential centre based in Buckinghamshire that will bring together lead-

ing scientists from around the world to stimulate debate and explore new ideas. However his ties with Imperial will stay strong and he will remain as Senior Advisor to the College, as well as Emeritus Professor in the Department of Physics.

“Kavli is going to keep me pretty busy but Imperial hasn’t got rid of me yet,” he promises. “I’ve made some tremendous friends here and I’ll miss the daily engagement.”

Sir Peter first arrived at Imperial in 1979 as a Science and Engineering Research Council Advanced Fellow, after completing his PhD in Physics at the University of Sussex and working in America. When Sir Peter returned to the UK, his area of research – quantum optics – was not well-established here.

He put together and led a substantial group within the Department of Physics focused on quantum optics and, with his wife Chris as editorial manager, edited two major publications, *The Journal of Modern Optics* and *Contemporary Physics*.

Sir Peter has held a number of leadership roles at the College as Head of the Department of Physics 2001–05, Principal of the Faculty of Natural Sciences 2005–08, Senior Principal of Imperial 2008–09 and Deputy Rector (Research) from 2009.

— ABIGAIL SMITH, COMMUNICATIONS

For the full interview: [www3.imperial.ac.uk/news/mybuzz](http://www3.imperial.ac.uk/news/mybuzz)

## Rotund rodents

Dr Arpat Ozgul (Life Sciences) pictured above with a yellow-bellied marmot (*Marmota flaviventris*) in the Colorado Rocky Mountains. Dr Ozgul is the lead author of a study published in *Nature* on 22 July which uses data from the last 33 years, on a population of large mountain rodents.

The research has revealed that climate change is causing marmots to grow larger and get better at surviving.



For the full story and to see more marmot pictures see: [www3.imperial.ac.uk/news/marmots](http://www3.imperial.ac.uk/news/marmots)

## take note

### Central Library floor closures over the summer

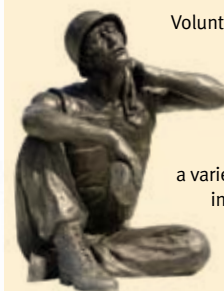
As a result of work to reorganise books from several separate collections into a single classified sequence, a number of Central Library floors will be closed for periods over the summer.

Full details of the project visit the Library website at: [www3.imperial.ac.uk/library/oservices/openinghours/centrallibrary](http://www3.imperial.ac.uk/library/oservices/openinghours/centrallibrary)

## VOLUNTEERING

### Conservation and Office Volunteer

Project ID: 1339  
Organisation: War Memorials Trust  
Date(s): Ongoing  
Time(s): Minimum commitment of one full day per week  
Location: Victoria



Volunteers are needed to support War Memorials Trust staff. The volunteering role involves a variety of tasks including developing record-keeping systems such as a photographic database, working on the website and general administrative duties. The charity is looking for people with initiative, enthusiasm and, preferably but not essentially, an interest in our war memorial heritage. War Memorials Trust works for the protection and conservation of war memorials in the UK. It provides advice and information, and runs grant schemes for the repair and conservation of war memorials.

#### For more information

To take part in a scheme or to hear more about volunteering in general, contact Marco Benozzi:

☎ 020 7594 8141  
✉ [volunteering@imperial.ac.uk](mailto:volunteering@imperial.ac.uk)

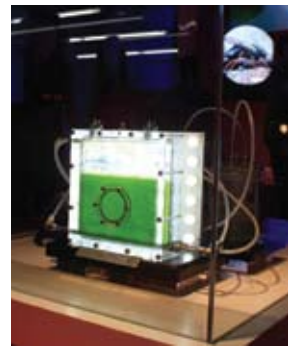
For full details of over 250 volunteering opportunities please visit: [www.imperial.ac.uk/volunteering](http://www.imperial.ac.uk/volunteering)

✉ Subscribe to the weekly newsletter by emailing [volunteering@imperial.ac.uk](mailto:volunteering@imperial.ac.uk)

#### ONGOING ► EXHIBITION

### Imperial at the Science Museum

Imperial scientists are showcasing their research this summer at the Science Museum. In the *Who Am I?* exhibit, Professor Colin Caro



(Bioengineering) is showcasing a stent that he has developed, which mimics the twisted shape of arteries. The stent can be inserted into arteries, forcing the blood to swirl and cross-mix, preventing plaque build-up and the onset of vascular disease.

Also on display is the colourful 'brainbow',

mapping neurons in a mouse's brain with fluorescent proteins which Dr Simon Schultz (Bioengineering) is using to image brain activity. In the Antenna Wing, Professor Paul Freemont (Life Sciences) and Dr Alexander Bismarck (Chemical Engineering and Chemical Technology) feature in a video as part of the *Trash Fashion* exhibit. The researchers have been working with fashion designers to develop environmentally friendly material made from sheets of 'biofilm', produced by the microbes that ferment green tea. A mini-bioreactor that uses sunlight to extract hydrogen from algae is also on display there. A team from the Energy Futures Lab have set up a mini bioreactor (pictured) to show how hydrogen could provide a carbon-free energy source for the future.

## PHOTO EXPO

Some of Imperial's civil engineering students participating in Constructionarium 2010. Among the constructions created over the five-day event was a four-storey Mini-Gherkin tower (pictured right), which sits on concrete foundations precision excavated by the students, and a viewing tower made from hemp-reinforced concrete, which students found a challenging material to use (bottom left). The 2010 Imperial event was co-funded by John Doyle Construction, Expedition Engineering and Imperial. For a full review of the Constructionarium experience see page 12.



## Stay in the loop

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