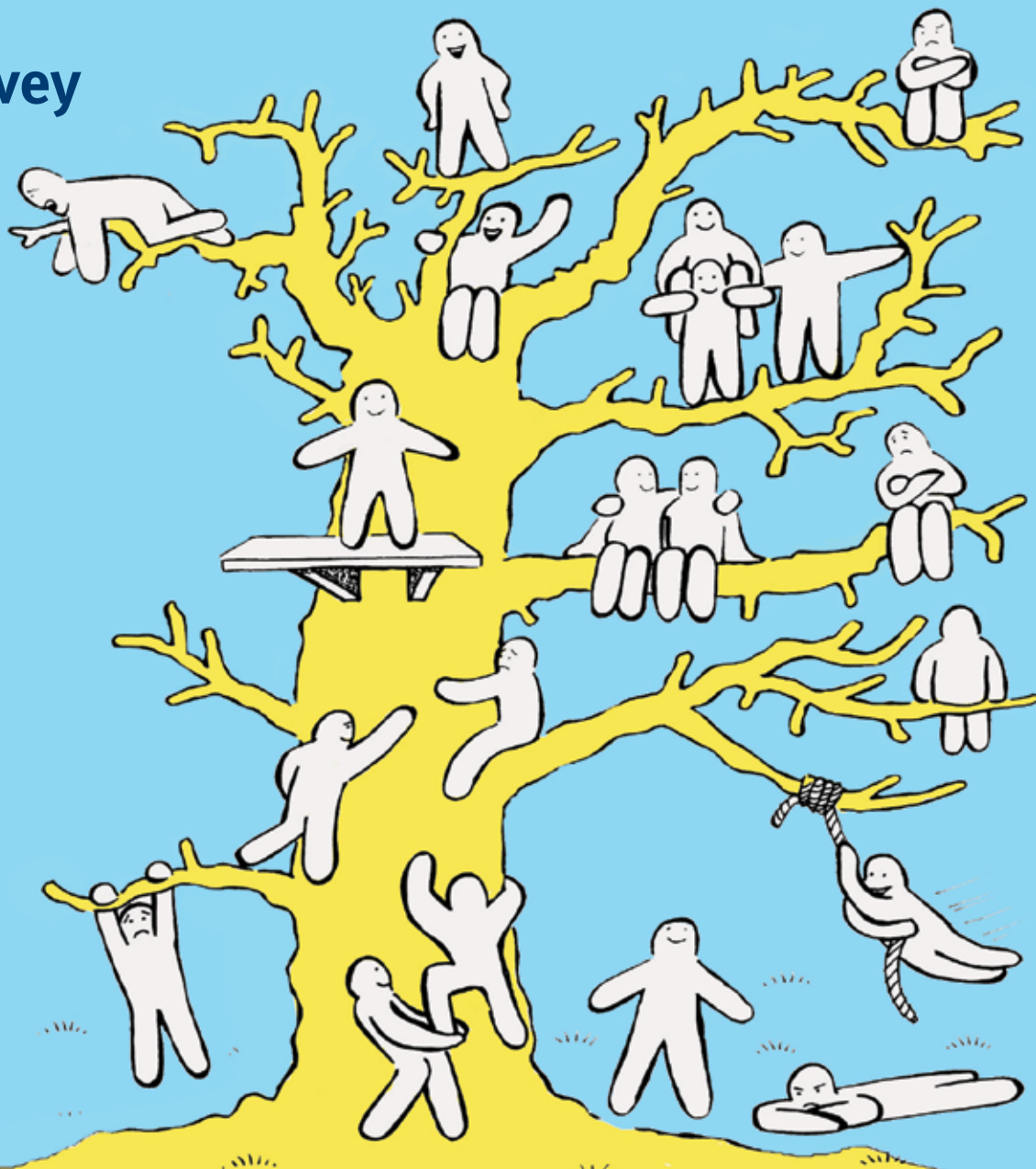


How are you feeling?

**2011 Staff Survey
results inside**

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LOW CARBON BRITAIN

New UK energy
review launched
at Imperial

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SIMULATED SURGERY

Fake blood and
prosthetics help
train Imperial
surgeons

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LOVE ON CAMPUS

Alumni return
for pre-wedding
photoshoot at
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EDITOR'S CORNER

Next step

Graduation is one of my favourite events in the College calendar – whether it's raining or sunny, the optimism of the **robed-up students** and their beaming friends and family is contagious. After the morning ceremony on 4 May I was tasked with capturing the feelings of graduates on leaving the College. While conducting video interviews over the **clinking of champagne glasses**, whoops and Queen's Tower bells was a challenge, it was a chance to chat to the students about what it meant to be part of Imperial. I spoke to Tom Quick who did a PhD in Environmental Technologies and was keen to keep in touch with his **inspirational supervisor**. I was also warmed by the words of Yousif Mohammed (Business School) who described the students in his class as the **best friends he'd ever made**, and said he looked forward to maintaining these friendships. It reminded me that while we sometimes view graduation as the end of students' relationship with the College, the links they make here continue long after they have completed their studies as they join the alumni community.

EMILY ROSS, EDITOR

Reporter is published every three weeks during term time in print and online. The next publication day is 9 June. Contact Emily Ross: reporter@imperial.ac.uk

Imperial College Union sabbaticals elected

The Imperial College Union sabbatical team for 2011–12 was announced on 14 March, following elections held during the spring term. Taking up sabbatical positions from 1 August are (pictured from left to right): Monya Zard, Deputy President (Clubs and Societies); Jason Parmar, Deputy President (Education); Scott Heath, President; Michael Foster, Deputy President (Finance and Services); Matt Colvin (Felix Editor), and Nicolas Massie, Deputy President (Welfare).

Speaking of his delight at the results, Union President elect, Scott Heath, said: "It feels great

to get the support of so many students to become their President and it is a role I am looking forward to performing. I hope my sabbatical team will build upon the working relationships I have developed as Royal College of Science Union (RCSU) President, and that it will be a year where we continue to communicate the value of the Union, expand our commercial capacity and actively encompass the newly formed mission statement and targets."

Turnout at the election was high, with 5,033 out of around 15,000 students voting –



32.5 per cent of the overall student body. The number of votes represents an increase of nearly 50 per cent compared with the 2010 sabbatical elections and the turnout was among the highest in UK universities' students' unions this year.

Reporter will be interviewing the new sabbatical team later in the summer.

More renewables needed to power low carbon Britain

The UK needs a portfolio of renewable energy and low-carbon alternative energy sources, according to a new energy review by the Committee on Climate Change (CCC), which was launched at Imperial in the second week of May.

The scientific experts on the committee, including Professor Sir Brian Hoskins, Director of the Grantham Institute for Climate Change, and Professor Jim Skea (CEP and the UK Energy Research Centre), said that renewable energy sources, such as wind, solar and geothermal heat, should be able to contribute at least 30 per cent of all power generated in the UK by the year 2030. This would make a major contribution to reducing the UK economy's carbon footprint over the next few decades.

The committee also suggested that a higher share of up to 45 per cent would be feasible, if the cost of renewable technologies were to fall and if the government pursued policies that would allow low carbon



technologies to be implemented. Current plans, they say, could lead to unnecessary costs that would be passed on to the average household energy user.

Professor Hoskins said: "In order to limit the risks of climate change, it is necessary to significantly reduce global emissions of carbon dioxide by 2050. We know this can be done but only by starting now on a major programme to reduce greenhouse gas emissions and develop new low carbon technologies, which themselves could also bring significant economic opportunities."

—SIMON LEVEY, COMMUNICATIONS AND DEVELOPMENT

Watch a recording of the launch of the energy review: <http://bit.ly/lia59R>

Imperial College London

Want a beach body?

Ethos is introducing new classes to help you get into shape this summer. These include outdoor pilates and yoga in Prince's Gardens, Body Attack, the Beach Body Quickfix and Summer Sculpt. *Ethos* members can join some classes free of charge throughout May.

Download the new timetable: www.imperial.ac.uk/sports/ethos



Postgraduates celebrate, Fellows and staff honoured

Graduands and guests from 52 countries converged on the Royal Albert Hall on 4 May for Imperial's 2011 Postgraduate Award ceremonies.

The largest graduation ceremonies for postgraduates in the College's history saw more than 2,000 graduands awarded their postgraduate degrees, watched by some 4,500 guests.

Addressing the audience, Rector Sir Keith O'Nions said:

"You are amongst the best equipped anywhere in the world to meet the chronic challenges of climate change, energy supply, issues of global health, food scarcity and an increasing global population. To ponder just what you will do for the world is truly exciting."

The graduates and guests were from countries as far apart as Brunei, Darussalam, Iceland, Indonesia and Trinidad and Tobago.

Also attending



the ceremonies were leading figures from the worlds of business and science. Sir Peter Gershon, a member of Imperial's Council from 2002–10, and the philanthropist Alan Howard were admitted to the Fellowship of Imperial College London, while Sir Liam Donaldson, former Chief Medical Officer, received an honorary degree.

Two long-serving retired staff members received the Imperial College Medal: Professor Robin Smith, former Associate Head of the Department of Physics, and Mr Phillip Blissett, former Faculty

Operating Officer for the Faculty of Medicine.

During the ceremonies, the Deputy Chairman of the Council, Baroness Manningham-Buller, spoke of the difference staff have made to the lives of the assembled graduands:

"They are the people who have supported you and steered you in your academic endeavours, criticised you and encouraged you. I think we would all wish to thank them for their contributions to your success."

—JOHN-PAUL JONES,
COMMUNICATIONS AND
DEVELOPMENT

Rector's visit strengthens College links to Asia

The Rector, Sir Keith O'Nions, visited Beijing and Taiwan during the Easter break, meeting alumni, ministers, and business and university leaders, to further strengthen the College's links with the region. Highlights of the eight-day trip included a meeting with President Ma of Taiwan, the signing of a new Memorandum of Understanding with a consortium of Taiwanese universities, Tsinghua University's centennial celebrations in Beijing, and events hosted by the Rector for alumni in Beijing and Taipei.

The Rector was accompanied on the visit by Professor Yi-Ke Guo (Computing) and Professor Chris Toumazou (Electrical and Electronic Engineering), as well as members of the Communications and Development Division. Alumnus and honorary graduate Winston Wong hosted the delegation on a visit to Tainan to meet the city's mayor, and the president and leaders of National Cheng Kung University.

Commenting on the reception the Imperial delegation received during the trip, the Rector said: "It has been striking how much support the College's name garners here, with one minister describing Imperial as a household name in China."



A milestone achieved during the visit was the formation a new academic partnership with the Top University Strategic Alliance in Taiwan, represented by National Yang-Ming University, Taipei. The agreement, only the third signed by the Alliance with an overseas partner, will provide opportunities for Taiwanese postgraduates and academic staff to undertake research at Imperial, drawing particularly on the expertise of the Business School and the Centre for Bio-Inspired Technology, part of the Institute of Biomedical Engineering. The collaboration, which is fully funded by Taiwan's Ministry of Education, will also support joint research projects and research visits to Taiwan by Imperial academics.

See <http://bit.ly/iLkpKL> to read how President Ma endorsed the work of Imperial's Railway and Transport Strategy Centre during the trip.

in brief



Students seek recipes to tackle waste

A group of Imperial undergraduates and postgraduates are looking for recipes as part of a project to develop a digital solution which helps tackle food waste within the student community. Their smart-phone

application, *Morph My Food* is being developed this month as part of a Europe-wide university competition, *Thought for Food*. The app allows users to enter a list of the leftovers in their fridges, before giving them a selection of possible recipes to use them up. The selection will be based on real recipes given to the team by the Imperial community.

To submit your recipes and to read more about the project visit: <http://bit.ly/joxANc>

Knight to head IOP

Sir Peter Knight, former Deputy Rector (Research), has been announced as the President elect of the Institute of Physics. He takes up his appointment on 1 October 2011, succeeding the late Professor Marshall Stoneham. Sir Peter retired from Imperial at the end of September 2010 following a career with the College that included roles as Head of the Department of Physics and Principal of the Faculty of Natural Sciences.

Access agreement submitted

The College has submitted its Access Agreement 2012–13 to the Office for Fair Access (OFFA). Institutions wishing to charge tuition fees of more than £6,000 for that academic year were required to submit an Access Agreement by 19 April 2011. In the agreement, they had to set out their intended fee levels and the measures they would put in place to sustain or improve access and student retention. OFFA is due to approve all Access Agreements by 11 July.

“For me it's about the variety – you can find articles on everything from deep vein thrombosis to road-kill cuisine.”

VINESH PATEL, THE PRESIDENT OF THE NEWLY ESTABLISHED IMPERIAL WIKIPEDIA SOCIETY, SPEAKING ABOUT HIS PASSION FOR THE WEBSITE ON THE LATEST IMPERIAL PODCAST, AIRED ON 18 MAY: WWW3.IMPERIAL.AC.UK/MEDIA/PODCASTS

Imperial College Healthcare NHS Trust

Hope for rare heart condition

Surgeons working in hospitals that form part of the Imperial College Academic Health Science System have introduced a life-saving service for patients with a heart condition that is often fatal.

The surgeons at the Hammersmith, Royal Brompton and Harefield hospitals provide emergency surgery to patients with acute aortic dissection – a rare condition that can quickly lead to death.

The new service means patients have access to heart surgeons with particular expertise in this condition, through a dedicated surgical rota operating 24 hours a day, seven days a week.

Mr Prakash Punjabi, one of the cardiothoracic surgeons from Hammersmith Hospital and an Honorary Clinical Senior Lecturer in NHLI, said: “Acute aortic dissection has a high rate of mortality and many patients die before they even reach hospital. We hope that by concentrating our combined expertise within this service, we’ll be able to ensure that more people survive.”

An average of 50 acute aortic dissection patients are seen by the three hospitals per year. Previously patients saw one of up to 20 different surgeons at their nearest cardiac centre. The new service means they are transferred by ambulance to the hospital ‘on call’ and seen by one of six expert surgeons.

The joint service is one of the first initiatives resulting from a formal collaboration announced in June 2010 between the College, Imperial College Healthcare NHS Trust, and the Royal Brompton and Harefield NHS Foundation Trust. The alliance is an extension of the Academic Health Science Centre, known as the Academic Health Science System, which aims to exploit the critical mass of expertise and patients to deliver world-leading improvements in clinical care, education and research activities.

Surgical centre opens

The new Imperial Surgical Innovation Centre (ISIC), based in the Paterson Building on St Mary’s Campus, opened its doors to outpatients on 3 May.

When completed this autumn, the Centre will boast two state-of-the-art theatres and a 14-bed short stay ward. It will specialise in breast, bariatric (weight loss), gastrointestinal and urology surgery.

The ISIC will also house Imperial’s clinical skills laboratory for undergraduate and postgraduate teaching, as well as the robot-assisted microsurgery laboratory, which will continue the College’s groundbreaking research in robotic surgery.

Mr Justin Vale, Clinical Director of the Department of Surgery and Cancer, said: “The ISIC will deliver a sea-change approach in how we provide surgical and cancer services and is a fantastic example of the benefits of an Academic Health Science Centre by bringing together education, research and patient care under one roof.”

—IMPERIAL COLLEGE HEALTHCARE NHS TRUST PRESS OFFICE

Imperial researchers win prestigious fellowships

Four leading researchers from Imperial have been honoured with fellowships of the Academy of Medical Sciences.

Professor Gianni Angelini (NHLI), Professor Daniel Davis (Life Sciences), Professor Christoph Tang (Medicine) and Professor Dominic Withers (Institute of Clinical Science) are among 40 eminent scientists who have been awarded Academy fellowships this year.

Academy Fellows are elected for outstanding contributions to the advancement of medical science, for innovative application of scientific knowledge or for their conspicuous service to healthcare.

The new Fellows will be formally admitted to the Academy at a ceremony on 29 June.



Professor Sir Anthony Newman Taylor, Principal of the Faculty of Medicine, said: “I’m delighted that four academics from Imperial have been recognised for their outstanding contribution by the Academy of Medical Sciences. Their fellowships are wholly deserved and I’m sure everyone at the College will join me in congratulating them. We now have around 80 fellows of the Academy here, which is a great reflection on the quality of our medical research at Imperial.”

—SAM WONG, COMMUNICATIONS AND DEVELOPMENT

Maths learning centre transformation completed



On 30 March, a reception was held on the South Kensington Campus to celebrate the official opening of the Mathematics Learning Centre (MLC) in the Huxley Building, home to the Department of Mathematics.

The Rector, Sir Keith O’Nions, marked the occasion by giving a speech thanking all those who helped to transform the former Mathematics Library into a modern learning and research

space to benefit students.

The creation of the MLC was a College-funded initiative, and was achieved thanks to input from the Faculty of Natural Sciences, the Department of Mathematics and the Library.

The new space provides students with new study rooms with tables, whiteboards, more computers with large screens, and an informal soft seating area. The space can also be used for teaching sessions and a number

of academic staff use it for their regular meetings with students.

The work was finished on time and within budget, and the new centre opened for students at the beginning of the academic year in October 2010.

Since then, artwork by Edmund Harriss, a former PhD student and post-doc in the Department, has been placed in prime positions in the Centre.

Commenting on the development, Jenny Evans, Mathematics and Physics Librarian, said: “The MLC is fantastic – the new facilities enhance the student experience, and I am regularly on hand to help with any queries. Moving the physical library collections to the Central Library has meant they are available for more hours per week, meeting students’ study needs”.

media mentions

—TANYA GUBBAY, COMMUNICATIONS AND DEVELOPMENT



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THE INDEPENDENT ▶ 21.4.2011

Immigrant TB testing not effective



Screening processes are failing to detect the majority of cases of tuberculosis in immigrants to the UK, reports *The Independent*. Researchers from Imperial found that using new blood checks rather than chest X-rays would detect over 90 per cent of imported latent TB, as opposed to the current success rate of fewer than 30 per cent of cases being detected. The team explained that new methods of blood testing would mean that people with imported latent TB could be given a course of antibiotics to prevent them from developing an active form of the disease. Professor Ajit Lalvani (NHLI), director of the Tuberculosis Research Unit at Imperial, said: “By treating people at that early stage, we can prevent them from developing a serious illness and becoming infectious.”

BLOOMBERG BUSINESS WEEK ▶ 22.4.2011

Hospital infection holds fatal risk for bowel patients

A study from Imperial and St George’s Healthcare NHS Trust finds that patients hospitalised for treatment of inflammatory bowel disease have a sixfold increased risk of death, if infected with *Clostridium difficile* bacteria, reports *Bloomberg Business Week*. Study author Dr Sonia Saxena (Public Health) is urging hospitals to work to control these infections: “These high-risk patients need to be screened for *C. difficile* proactively on admission so that if they are exposed, they can be diagnosed and treated more quickly.” Researchers found that the death rate after 30 days was 25 per cent for patients who were infected.

TIMES HIGHER EDUCATION ▶ 23.4.2011

Spin cycle



Imperial has produced more spin-outs than any other university in the UK, according to the *Times Higher Education*. It fostered 59 new companies from 2000–10. The figures, from a database called Spinouts UK, show that 11 research intensive universities have produced over half of all spin-out companies in the past decade. They also reveal that, across the sector, sales of spin-outs totalled £3 billion. This newly launched database collates information on the commercialisation of intellectual property in higher education, and tracks the progress of spin-outs. The authors of the study hope that these figures will allow the UK to follow in the footsteps of the US in commercialising its tremendous intellectual property and innovation.

THE GUARDIAN ▶ 26.4.2011

More to learn from Chernobyl

Lessons from Chernobyl have been missed because of research gaps, according to *The Guardian*. Keith Baverstock, a former advisor to the World Health Organisation, says full assessment of Chernobyl’s impact on health should be funded by the European Commission. Professor Geraldine Thomas (Surgery and Cancer), Director of the Chernobyl Tissue Bank at Imperial, agreed that lifespan studies that monitor the health of people around Chernobyl would be valuable, if only to prove there were no other long-term consequences from the accident. However, she warned that this could raise unnecessary fears: “Telling a whole population that it may have health consequences at some point is not good for that population psychologically.”

awards and honours

INSTITUTE FOR SECURITY SCIENCE AND TECHNOLOGY

Hankin appointed to INRIA



Professor Chris Hankin, Director of Imperial’s Institute for Security Science and Technology,

has been appointed Chairman of the INRIA Scientific Council. INRIA is the French national institute for research in computer science and control. The Scientific Council opines on major aspects of the

institute’s scientific policy, guiding the work of its research teams.

MEDICINE AND NATURAL SCIENCES
Wolfson Awards

Professors Alfred Rutherford (Life Sciences) and Guy Rutter (Medicine) have been appointed to new roles in the College, following the announcement of the Royal Society’s Wolfson Research Merit Awards. The scheme provides a five-year salary enhancement to help universities appoint or retain respected scientists of outstanding achievement and potential. It is jointly funded by the Wolfson Foundation and the Department for Business, Innovation and Skills (BIS).

ENGINEERING

Rio Tinto safety prize

Dr Kathryn Hadler, Research Associate (Earth Science and Engineering), has won a Rio Tinto Safety Award and £2,000 in recognition of her efforts to create a culture of safety in the Rio Tinto Centre for Advanced Mineral Processing at Imperial. Among her achievements are the arrangements she made for safety training her team when they collected data at the Kennecott Utah Copper mine.

GRANTHAM INSTITUTE AND NATURAL SCIENCES

Fellowships for Dallman and Hoskins

Professor Maggie Dallman, Principal of the Faculty of Natural



Sciences, and Professor Sir Brian Hoskins, Director of the Grantham Institute for Climate Change, were elected Fellows of the City and Guilds Institute in the most recent round of elections in March.



NATURAL SCIENCES
Lansdown to join RSC

Dr Alan Lansdown, former Honorary Senior Lecturer (Medicine), has been invited to become a Fellow of the Royal Society of Chemistry in recognition of his research into the safety of metals.

Molar power

Milk teeth wanted for art project



Children across Britain are being asked to donate their milk teeth to create *Palaces*, a spectacular glittering sculpture made from crystal resin and decorated with retired pearly whites. The project is part of an art–science collaboration that aims to inspire the nation with the regenerative potential of adult stem cells.

Artist Gina Czarnecki and stem cell biologist Professor Sara Rankin (NHLI) hope that thousands of children will participate in their art project, which aims to raise awareness of different sources of stem cells in the body. Along with a form to send in with one's tooth, the project website provides a token which children can leave under their pillow to inform the tooth fairy of their

donation to her palace.

The finished artwork will resemble a coral castle under water, two metres high and two metres wide. It is due to go on display at the Bluecoat, Liverpool, in December 2011 and at the Science Museum in London in 2012.

“The artwork will provide a focus to engage young people with this research and increase awareness, understanding and informed debate about these new biomedical possibilities and their social, cultural and ethical implications,” said Professor Rankin.

“At the moment the debate around stem cell research is predominantly focused around ethical issues associated with the use of embryonic stem cells. We

want to promote awareness about adult stem cells such as those found in bone marrow or umbilical cord, which could be used to develop new

treatments without any ethical issues,” she added.

—SAM WONG, COMMUNICATIONS AND DEVELOPMENT

Visit the project's website at: www.palaces.org.uk

“The artwork will provide a focus to engage young people with this research”



Scientists find gene linked to alcohol consumption

A gene that appears to play a role in regulating how much alcohol people drink has been identified in an international study led by researchers from Imperial and King's College London, published on 4 April in *Proceedings of the National Academy of Sciences*.

This gene, called autism susceptibility candidate 2 or AUTS2, has previously been linked to autism and attention deficit hyperactivity disorder, but its function is not known.

The study, which looked at 47,000 people, found that there are two versions of the AUTS2 gene, one three times more common than the other. People with the less common version drink on average five per cent less alcohol than people with the more common version.

The gene is most active in those parts of the brain associated with neuropsychological reward mechanisms, suggesting that it might play a part in regulating the positive reinforcement that people feel when they drink alcohol.

Professor Paul Elliott (Public Health) said: “Of course, there are a lot of factors that affect how much alcohol a person drinks, but we know from twin studies that genes play an important role. The difference that this particular gene makes is only small but, by finding it, we've opened up a new area of research into the biological mechanisms that control drinking.”

The researchers say that the discovery of a common genetic variation influencing levels of alcohol consumption may lead to a better understanding of the mechanisms underlying alcohol drinking behaviour in the general population.

—SAM WONG, COMMUNICATIONS AND DEVELOPMENT

Climate change is making our environment bluer



The ‘colour’ of our environment is becoming ‘bluer’, a change that could have important implications for animals’ risk of becoming extinct, say Imperial ecologists in a major study published on 7 April in the *British Ecological Society's Journal of Animal Ecology*.

Ecologists have investigated the link between fluctuations in the environment and those of animal populations for the past 30 years. They describe fluctuations as a colour spectrum. Here red signifies an environment or population that fluctuates more slowly over time, such as ocean temperature, and blue signifies more rapid fluctuations, such as changes in air temperature.

The researchers have shown that the colour of changes in the environment maps onto the colour of changes in animal populations, meaning there are redder (slower) fluctuations in population size if there are also redder (slower) fluctuations in aspects of the environment. Furthermore, they found that our environment is becoming ‘bluer’, in other words, fluctuating more rapidly over time.

Previous studies show that the spectral colour of a population is linked to its risk of becoming extinct; now this study shows a way in which climate change could be having an impact on the extinction risk of species, by affecting the colour of populations.

While the study seems to provide some good news for species facing extinction, the researchers warn that this is offset by other pressures. Dr Daniel Reuman (Life Sciences) said: “This apparent good news is tempered by the fact that habitat loss, over-exploitation and other factors are likely to be more important drivers of extinction risk than the colour of temperature fluctuations.”

—ADAPTED FROM A NEWS RELEASE BY THE BRITISH ECOLOGICAL SOCIETY



Sugar-grain sized meteorites rocked the climates of early Earth and Mars

Bombardments of ‘micro-meteorites’ on Earth and Mars four billion years ago may have caused the planets’ climates to cool dramatically, hampering their ability to support life, according to research by Imperial scientists published on 1 April in the journal *Geochimica et Cosmochimica Acta*.

Micro-meteorites, the size of sugar grains, come from the rocky asteroid belt between Mars and Jupiter, and are dragged by gravity towards Earth and Mars. As they enter the planets’ upper atmospheres, they heat up to temperatures of approximately 1,000 degrees Celsius and release gases, including sulphur dioxide. This sulphur dioxide forms aerosols consisting of solid and liquid particles, which deflect sunlight away from the surface, making the planets cooler.

The researchers studied the effects of the Late Heavy Bombardment, a period of time in the early solar system, when meteorite showers lasting around 100 million years barraged Earth and Mars.

They believe that the high sulphur dioxide levels, together with a Sun 30 per cent weaker than today’s, could have plunged Earth into an Arctic winter lasting millions of years, and making conditions for primitive microbial life extremely difficult.

Dr Richard Court (Earth Science and Engineering), lead author of the study, said: “These sugar-grain sized meteorites are left over material from the construction of our early solar system, helping to build rocky planets such as Earth and Mars. Our study is helping us to see how these tiny space rocks could also bring environmental devastation on a global scale to early Earth and Mars.”

—COLIN SMITH, COMMUNICATIONS AND DEVELOPMENT

New technology to control malaria-carrying mosquitoes

Scientists from Imperial and the University of Washington, Seattle, have taken an important step towards developing control measures for mosquitoes that transmit malaria.

In the study, published in *Nature* on 20 April, researchers from the Department of Life Sciences have demonstrated how some genetic changes can be introduced into large laboratory mosquito populations over the span of a few generations by just a small number of modified mosquitoes. In the future, this technological breakthrough could help to introduce a genetic change into a mosquito population and prevent it from transmitting the deadly malaria parasite, Plasmodium, to humans.

Malaria is a debilitating disease that affects more than 300 million people every year, and kills nearly 800,000 annually.

The researchers bred mosquitoes with a green fluorescent gene, as a marker that can easily be observed in experiments. They allowed these insects to mingle and mate with a small number of mosquitoes that carried a segment of DNA coding for an enzyme capable of permanently inactivating the fluorescent gene. After each generation, they counted how many



mosquitoes still retained an active fluorescent gene.

They found that in experiments which began with close to 99 per cent of green fluorescent mosquitoes, more than half had lost their green marker genes in just 12 generations.

One of the senior authors of the study, and head of the research group, Professor Andrea Crisanti (Life Sciences) said: “This is an exciting technological development, one which I hope will pave the way for solutions to many global health problems. It demonstrates significant potential to control these disease-carrying mosquitoes. We expect to conduct many more experiments to determine its safety and reliability.”

—SIMON LEVEY, COMMUNICATIONS AND DEVELOPMENT

TB discovery paves the way for drugs that prevent lung destruction

Imperial scientists have identified a key enzyme responsible for destroying lung tissue in tuberculosis (TB). Drugs that inhibit this enzyme are already available, meaning that the finding could lead quickly to new treatments.

The findings were published in the *Journal of Clinical Investigation* on 25 April.

TB is caused by the bacterium *Mycobacterium tuberculosis*. The infection destroys patients’ lung tissue, causing them to cough up the bacteria, which then spread through the air and can be inhaled by others. The mechanism behind this lung damage is poorly understood, and no treatments currently used prevent it

from occurring. Patients require at least six months of antibiotic treatment, but drug-resistant strains of the bacterium are becoming increasingly common.

The new research shows that in patients with TB, there is an increase in levels of an enzyme called MMP-1 in their lungs. When the researchers infected human immune cells with TB in the lab, they found that the cells greatly increased production of this enzyme.

Dr Paul Elington (Medicine) said: “Almost two million people die from the disease every year. Standard TB treatment has remained unchanged for 35 years, and no current treatments prevent the lung destruction that



TB causes. These findings suggest that drugs available now might be able to reduce deaths from TB.”

The study was undertaken by researchers at Imperial with collaborators at Columbia University in New York and the University of East Anglia, and it was supported by the National Institute for Health Research (who funded the work on human cells), the Scadding Morriston Davies Travel Fellowship and the US National Institutes of Health.

—SAM WONG, COMMUNICATIONS AND DEVELOPMENT

“These findings suggest that drugs available now might be able to reduce deaths from TB”

How are you feeling?

The 2011 Staff Survey drew over 3,800 responses and paints a picture of motivated, environmentally-minded staff, who enjoy working with their colleagues but who are concerned by workload pressures and would like more recognition for their efforts. *Reporter* offers a preview.



88%

are motivated to perform well
in their job

41% find *Reporter* a useful way of
keeping informed of College
news and events

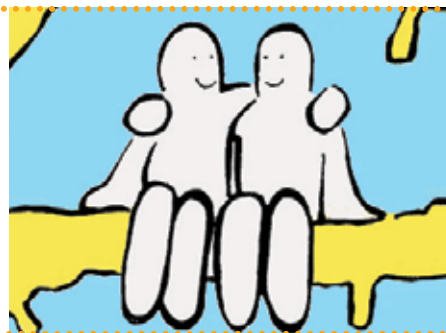
79% are satisfied
with their
current job

74%

are taking steps
to help the College
to reduce its
carbon footprint

50% said they have
experienced unreasonable
levels of pressure at work
a lot or some of the time

70% said that
their relationship
with colleagues is
one of the most
important factors
in their job

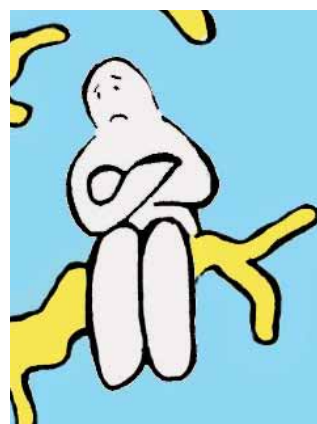


26% believe
the College has
progressed in
promoting equality
and eliminating
discrimination, while
30% believe there
has been no change,
over the last
three years.

14%

said they had personally
experienced some form of
harassment or bullying and
13% said they had witnessed
some form of harassment or
bullying to others

The full results will be on the HR website shortly:
www3.imperial.ac.uk/hr/collegesurvey



21%
fear negative
consequences if they
express their views
and opinions

Staff Survey – the lowdown

Reporter asked Louise Lindsay, Director of Human Resources, about the Staff Survey and the issues the results have highlighted.

What was the aim of the survey?

Everything we do at Imperial relies on people: our staff and their service, their contributions, their ideas. So we want to retain and motivate the best individuals. Thanks to the survey we've been able to find out what staff regard as the priorities that keep them here and where the pressure points lie. The data will inform the HR Division's three-year action plan, which will set out the projects that we should prioritise in addition to the regular services we provide to managers and staff. In particular, we hope to look carefully at departments where staff seem particularly satisfied, according to the survey, to develop best practice guidance that can be shared with the rest of the College.

What, for you, were the most positive results?

It was really nice to hear that 86 per cent of staff are proud to work for the College – this is a feeling I have shared over the 22 years I've been here. The fact that 70 per cent of staff would like the College to stay in touch if they left Imperial also shows they value this connection. And it was really positive to hear that so many staff perceive the College as a safe place to work – it's a massive endorsement of our health and safety initiatives.

What areas of concern has the survey raised?

Around one in seven said they have experienced or witnessed discrimination and one in four said they had witnessed or

experienced harassment or bullying. Although this means that the vast majority of the respondents had not encountered such behaviours, these are worrying statistics and I would like to take action to improve the position. The working environment should be completely free from discrimination or harassment. The next stage is to drill down further and look at the trends in any particular areas of the College, then we will work closely with departments to tackle any issues head on.

Has the survey highlighted other issues you are keen to address?

The survey revealed that only two-thirds of employees feel able to express an opinion without fear of negative consequence. For some staff, their concerns could stem from a lack of confidence about speaking out, but there could also be some more autocratic management styles in practice that deter people from giving their opinions. I really want to come up with some guidance and support for managers at Imperial, so they fully understand what the College expects of them and how they can enhance contributions from staff and develop their potential.

One in five people are dissatisfied with the recognition they receive for their achievements. How will you tackle this?

One of my objectives for the next few years is to increase the returns



of the annual Personal Review and Development Plan (PRDP). The process offers a good opportunity for managers to discuss development needs with their staff, tell them where they have done a good job, and help them feel supported.

One of the questions asked staff what they would change about Imperial – what were the top answers?

The most common suggestions were to improve the environment, working conditions, temperature or provide more space. Four per cent of staff said they'd like to change the location of the College to closer to their home which, although I'd like to please everyone, is one thing I simply can't do!

How will you act on the data?

We are holding presentations across the Imperial campuses to share the results with staff. After the presentations we will speak to the faculties and departments and show them how the responses from their area relate to the College norm. We'll then help them develop action plans which concentrate on particular issues. We hope to seek opinions again through a survey in three years' time to see what progress has been made.

Staff Survey feedback session

The Rector will be presenting the feedback from the Staff Survey on the following dates. To register for your place please visit: www.imperial.ac.uk/staff/announcements/staffsurveypresentations

South Kensington Campus

24 May
15.00–16.00
Pippard Lecture Theatre

St Mary's Campus

20 June
15.00–16.00
Cockburn Lecture Theatre

Hammersmith Campus

28 June
10.30–11.30
Lecture Theatre 1
Wolfson Centre

A model patient



In the Paterson Wing at St Mary's Campus, a surgeon tries to stem the flow of blood from a patient who's been stabbed in the abdomen. As a heart monitor bleeps urgently and fluid continues to emerge, the pressure of the situation is inescapable. Yet the man lying on the operating table is not a man at all, but a very convincing dummy.



Simulated operations are increasingly becoming a major part of a surgeon's training. Virtual reality is commonly used to rehearse procedures, with simulators now able to reproduce faithfully the feel of real instruments as they move through tissue. At Imperial, the Distributed Simulation Group, led by Dr Roger Kneebone (Surgery and Cancer), is developing a real-world approach to training, involving experienced medical staff, an inflatable theatre, and realistic silicone models like those used in TV hospital dramas.

Surgical registrar Miss Alexandra Cope devises scenarios that put an entire team through their paces in a mocked-up operating theatre. The walls of the theatre are formed by an inflatable 'igloo' that effectively recreates the feel of a clinical space.

Picture caption: Left - Max Campbell holding one of the prosthetic models used by Imperial medics in their training. Right - The model in action, covered in sugar-based fake blood, which clots realistically.

"The difficulty of doing a simulation on a lab bench is that people say, 'in real life I would do something like this,'" says Alex. "We want to see people behaving as they really would in the workplace. Putting them in the right environment helps with immersion, but not everything needs to be faithfully reproduced."

If you look at the igloo closely, it doesn't look much like an operating theatre. But it is roughly the right colour and it gives a sense of being in a hospital. According to Alex, that's enough for people to get immersed in the simulation and behave as they would do in a real operation.

"The principle behind what we do is called 'selective abstraction'. What's in the centre of the participant's vision has to be highly realistic, but the further away you get from the action, the less realistic things need to be. They just need to be represented, so that they're not obviously absent," she explains.

Unlike training in virtual

settings generated by computers, using the igloo drills trainees in working as a team. "It tests not just whether they can do the clinical procedure, but whether they can do it under pressure, and, at

“Even though you know it's just a mannequin and not a real patient, the whole situation still makes your heart rate go up”

the same time, communicate with the anaesthetist and direct an assistant," Alex explains.

With the atmosphere set, the next thing a simulated operation needs is a suitable patient.

When the Imperial team first started using the igloo, the surgeon operated on organs taken from pig cadavers. Then they were approached by Max Campbell, a special effects make-up and prosthetics artist with over eight years' experience in the film and television industry.

"When I was working on *Holby City*, we always had top surgeons come and work with us on the day, to ensure accuracy from a medical perspective," Max says. "Often, they would comment on how realistic everything was and

say they didn't have anything like it in their industry."

Now Max and his company, Health Cuts Ltd, produce life-like silicone models specially designed for surgeons to rehearse operations. Some of the models contain rubber tubing that carries fake blood – a feature that plays no small role in recreating the pressure of a real operation.

To ensure that his models behave as much like real anatomy as possible, Max consults extensively with doctors, observes real procedures, and examines cadavers in the anatomy lab.

According to medical student Claudia Craven, it's easy to forget, once a simulation begins, that the operating theatre is not real. "When Miss Cope is shouting for more swabs, there's a vessel bleeding onto the floor, and you hear the ominous bleeps from the anaesthetic machine while you're trying to open a suture pack, it certainly feels like a real situation. Even though you know it's just a mannequin and not a real patient, the whole situation still makes your heart rate go up. It's emergency situations like this where rehearsal is vital."

—SAM WONG, COMMUNICATIONS AND DEVELOPMENT

inside*

story

mini profile

Yannis Hardalupas

Professor Yannis Hardalupas, Professor of Multiphase Flows (Mechanical Engineering), speaks to *Reporter* about chocolate, liquid fuel, washing powder and lasers.



Why did you choose to work at Imperial?

I left Greece in 1984 to come to the College to do my PhD and have never left. I was attracted to the Department of Mechanical Engineering, as it is renowned for developing new technologies in the fields of fluid mechanics and combustion.

Can you tell me a bit about your work?

My work focuses on the flow of two or more different phases of a substance, for example droplets in gas or bubbles in liquids. The aim of my research is to try to understand how these elements interact with each other.

What projects are you working on at the moment?

One of the projects relates to the atomisation and combustion of liquid fuel in aeroplane and car engines, to ensure that the fuel is injected inside the engines at the right time and place. We are using advanced laser diagnostics to give precise measurements. I'm also working with Dr Maria Charalambides in the Department of Mechani-

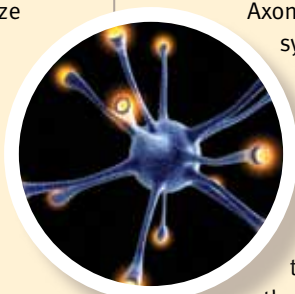
cal Engineering to develop new methods for adding bubbles to chocolate, like in Aero bars. It is all about adding bubbles at the right time, which can improve the efficiency of the manufacturing process and reduce costs.

What are your biggest achievements?

I'm really proud of helping to develop laser technologies that can measure the size of bubbles in liquids or the size of droplets in spray drying. Spray drying is the process by which washing powder or coffee powder is produced – droplets of atomised liquid are dried so you are left with the powder. The technologies I've been involved in developing ensure that the appropriate size of powder is produced so that clothes are washed properly, for example.

—EMILY GOVAN,
INTERNATIONAL OFFICE

Professor Yannis Hardalupas will give his inaugural lecture on 2 June. For details see the event highlight on the back page.



Drug discovery conference

On 31 March the Cancer Drug Design and Discovery group (CD3) and the Drug Discovery Centre (DDC) held a symposium entitled “Academic Drug Discovery: Challenges and Perspectives”. The Rector Sir Keith O’Nions opened the Symposium, which was attended by almost 200 staff and students from all the Faculties. It also attracted delegates from several pharmaceutical companies as well as Cancer Research UK, the Medical Research Council and technology transfer company MRCT. Dr Albert Jaxa-Chamiec (Medicine), who helped organise the event, reports on his experiences of the day:

“The Symposium highlighted the emerging importance of academic institutions as the main drivers of efforts to discover new medicines. It also made clear that the challenges that this complex task brings are beyond these institutions, unless they can acquire the necessary interdisciplinary, drug discovery expertise. The adequate funding, or rather lack thereof, of the fledgling programmes

was also a constant theme.

For me the most interesting presentation of the day was given by Professor Guido Franzoso from the Department of Medicine, who described a truly innovative approach to tackling multiple myeloma (bone marrow cancer). He has discovered a way to block the pathway by which cancer cells evade death by targeting a protein (Gadd45b) which is only present in the cancerous cells.

I enjoyed listening to the enthusiastic discussion among the post-graduates from the Department of Chemistry during the post-symposium wine mixer. The second key note speaker – Professor Chas Bountra from the

University of Oxford – struck a resonant chord with his controversial advocacy of making all research pre-competitive. This would require pharmaceutical companies to share the results of their research, which has historically been held in secret.”

For more on the symposium please visit: <http://bit.ly/jHQXUA>

“The Symposium highlighted the emerging importance of academic institutions as the main drivers of efforts to discover new medicines.”

▶ SCIENCE FROM SCRATCH

As explained by Thea Cunningham, MSc Science Communication

Axons

If your brain wants to tell your foot to move, it sends a message via your nerves. Each nerve consists of a bundle of nerve cells called neurons, and each neuron has a long, specialised extension – the axon.

Axons make contact with other neurons at specialised junctions called synapses. The electrical message an axon carries away from the neuron cell body is called an action potential. Action potentials can only occur when there is an imbalance of electrical charge – a voltage – across the neuron’s membrane. When an action potential travels along an axon, it temporarily reverses the voltage across the membrane from negative to positive. When it reaches the synapse, the action potential triggers the release of chemicals that stimulate a new action potential in the second neuron. Axons that are thick, or covered in a fatty layer known as the myelin sheath, can transmit nerve impulses more quickly.



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

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

Student blogger Charlotte on the royal occasion:

blog SPOT

“Many students wanted to get back before the royal wedding. As for me, I went to Green Park together with Richard and Nicolas to watch it on the big screens. I had originally planned to go to Hyde Park, but seeing the amount of people on their way there, I was happy ending up in Green Park instead. It was nice seeing everyone in such a festive mood, and also seeing how empty the streets of London can get. When ‘God Save the Queen’ started everyone stood up and sang along, waving flags at the end. Most impressive is how these events become an occasion for the people, with all the happy faces.”

www.imperial.ac.uk/campus_life/studentblogs

I'm a scientist, get me out of here!

Dr James Chan (Kennedy Institute) has come top in *I'm a scientist, get me out of here!*, a competition combining science, school kids and X Factor-style voting. Supported by the Wellcome Trust, the competition pitted scientists against each other in a battle to win the hearts and minds of secondary school students around the country for prize money of £500 to spend on science communication. James shares his experiences of the scheme and why he got involved:

“I've always been inspired by people who are excited about what they do and also possess the communication skills to infect you with their excitement. I also love being challenged by ideas that I've never entertained and what better way than to get kids involved?”

The competition involved interacting online with 13–18 year olds over two weeks and answering their questions about science and research. I also took part in a number of heated debates on subjects like the ethical issues surrounding stem cell research, and got the kids thinking about how science impacts on their daily lives and society. The competition has totally re-energised the way I approach my research and reminded me just how privileged we are to be paid to essentially be working on complex puzzles.”

Finding love at Imperial



Greta Chan and Clement Wong, who graduated from Imperial in 2005, returned to the South Kensington Campus on 5 May for a photo shoot in advance of their wedding later this year. The couple met at Imperial in the third year of their Civil Engineering degree and wanted to return to the College before their big day

because being on campus held so many special memories for them: “We spent most of our first two years together in lessons, having lunch and hanging around South Kensington,” explains Greta.

After six and a half years of being together, Clement proposed in Hong Kong, where they now live. He popped the question at the

airport express station: “We were chit-chatting about the old days and he got down on one knee and presented an engagement ring!” remembers Greta. “Even though I acted calmly, I was really excited when it happened.”

Clement is currently working in the field of geotechnical engineering and Greta has a job in the banking sector. Greta says that the best thing about being in a relationship with another scientist is that they understand each other. “Although I am not a scientist now, we love to talk about scientific facts and we both care about what is happening around the world.”

The couple are getting married on 30 September 2011 in Hong Kong – they have invited lots of alumni to share their big day with them.

Fundraising for Windsor's seniors

Cheers broke out at King George VI Day Centre in Windsor as John Rowntree, Security Officer (Support Services), completed a sponsored half marathon walk through Datchet, Langley and Windsor on 5 April. John raised over £1,500 to help the centre, which provides a range of services for Windsor's senior citizens, including lunches, hairdressing and chiropody, and which was recently threatened with closure. John's wife Frances has been working at the facility for three years and John helps out by driving a minibus to pick up the pensioners. Now volunteers and members of the lunch club are working together to ensure that future generations will benefit from the Centre's services. Commenting on the amount he raised, John said: “Special thanks to colleagues and medical students in the Reynolds Building and Lab Block at Charing Cross”.





INVENTOR'S CORNER

Precise steering

Dr Ferdinando Rodriguez y Baena, Senior Lecturer (Mechanical Engineering), holds a PhD in medical robotics and worked for Imperial spin-out company Acrobot prior to joining the College as a lecturer.

What have you invented?

A flexible and steerable probe that can be used to guide surgeons cutting into soft tissue. The invention allows a number of surgical procedures, such as catheter placement or deep brain stimulation, to be conducted with extreme precision, making them minimally invasive. The device is called STING (Soft Tissue Intervention and Neurosurgical Guide).

Why is your invention unique?

The mechanism of STING is based on the egg-laying tube of a species of wasp. The mechanism is made up of four interlocking segments; as one moves, the others stabilise it, which means the surgeon can steer the device precisely.

Current surgical instruments can't steer accurately through soft tissue but we've tested STING in gelatine with a consistency comparable to brain matter and have found that it is capable of smooth two-dimensional motion.

Was there a 'eureka' moment?

I was at a dinner with Julian Vincent from the University of Bath. He is a leader in the field of biomimetics – a field of study that seeks to replicate, or take inspiration from, nature in order

to solve mechanical and engineering problems. He explained to me that he had studied the wood wasp in great detail, and said he was sure that there could be some application for the mechanism it used to lay its

eggs. This suggestion sparked the inspiration that led me to invent STING.

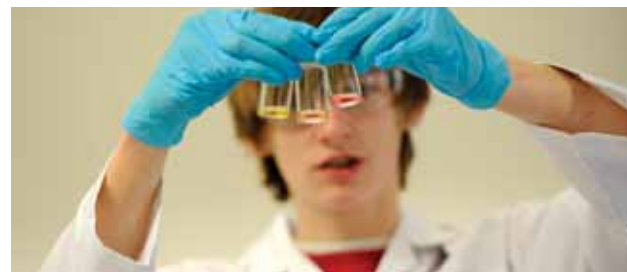
How will your invention be used?

Thanks to a €1.5 million grant from the European Research Council, we are working to produce an MRI-compatible miniaturised catheter, which is able to steer in full three-dimensional space. The surgical techniques that STING supports will be especially useful in an organ like the brain. The ability of the device to follow curved paths will allow access to deep areas of the brain, while minimising any damage to brain tissue.

—GAVIN REED, IMPERIAL INNOVATIONS

www.imperialinnovations.co.uk

“The mechanism of STING is based on the egg-laying tube of a species of wasp”



Top of the Bench final

Last month, 29 teams of school students, aged 13–16, came to Imperial from across the country to compete against one another in the Royal Society of Chemistry's (RSC) Top of the Bench final. Dr Melanie Bottrill, Scientific Projects Manager (Outreach), organised the competition in the Department of Chemistry. She describes the day:

“The final of the Top of the Bench competition took place on 2 April and involved 170 students undertaking a number of different tasks. In order to win, the teams needed to have the highest overall mark following the four different components of the assessment day.

In the morning the students did a written chemistry knowledge test and answered basic questions about chemistry, specific to their age. In the afternoon they had to identify the concentration of a hydrochloric acid solution using a known concentration of sodium carbonate solution. They then used these results to identify the concentration of an acid rain solution. After that they undertook a problem solving exercise.

The day rounded off with Dr Oscar Ces (Chemistry) giving a talk to the students introducing them to a variety of techniques his team are developing to study single cells. He explained that being able to explore single cells is vital to enable us to study rare cells such as circulating tumour cells.

At the end of the day, a team from the RSC marked all the students' answers and collated the results. Dr Ces then presented the winning team, Forest School, Cheshire, and runners up, Nottingham High School and Charterhouse, Surrey, with their silverware.”

VOX POP

How are you going to keep in touch with the College?

Reporter spoke to students at Imperial College London's 2011 Postgraduate Award ceremonies on the 4 May about becoming Imperial alumni.



evenings and other events, so they'll help me to keep in touch with Imperial.”

ELEANOR FARNWORTH, MSc IN ENVIRONMENTAL TECHNOLOGY (CEP)

“I did my MSc in the Centre for Environmental Policy, which has a really active alumni network. They send emails through every week with details of job opportunities, internships, networking drinks



was great meeting with people from the College and I'm planning to attend more alumni events in India and London.”

ANIRUDH SOMPALLI, MSc IN MANAGEMENT (BUSINESS SCHOOL)

“It feels really great to be part of Imperial College alumni – they always keep me updated with what's happening by email. A couple of months ago I attended an Imperial alumni meeting in Hyderabad, India, where I'm from. It



love going on the website and finding out about the latest research and technologies being developed.”

YEWANDE OLOMOLEHIN, PhD IN TRIBOLOGY (MECHANICAL ENGINEERING)

“I will definitely keep in touch with my Imperial colleagues and my 'crew'! I moved back home to Nigeria after doing my PhD, so am really excited to be back here to see my friends and get the Imperial vibe again. Finding out what's going on in the College is really important to me and, even though I'm not studying here anymore, I

obituaries

BRIAN DOBLE

Brian Doble, former Audiovisual Technician at the NHLI, died on 3 March 2011. Dr Duncan Rogers, Reader (NHLI), pays tribute to his colleague and friend:

“Brian worked at the NHLI at the Royal Brompton Hospital (previously the Cardiothoracic Institute) for over 30 years. He was a pivotal figure in supporting the NHLI courses and conferences, which attract the very best respiratory and cardiovascular speakers from across the globe. At work, Brian was the consummate professional. He always ensured that the audiovisuals that we were all using to enhance our lectures were the best that could be created. When we moved from drawing pictures on pieces of paper and photographing them to using computer generated images, Brian was right there leading the way. He quickly learnt the software and became indispensable to those of us who wanted to embrace this new technology to enhance our lectures.

It was this dedicated professionalism, combined with his cheerful personality, that endeared him to people from all aspects of life at the NHLI including Professor Sir Magdi Yacoub, the renowned heart transplant surgeon, the maintenance guys, PhD students and everybody in between. Brian loved the arts and was an accomplished pianist – often entertaining us during the early days of the NHLI at our Christmas concerts. When he retired just a few years ago, it really was the end of an era. You knew that whenever Brian was around you were never very far away from laughter. His death is such a sad loss to so many of us.”

long
service

Reporter features staff who have given many years of service to the College. Staff listed below celebrate anniversaries in the period 1 June–22 July. Data is supplied by HR and is correct at the time of going to press.

—EMILY ROSS, COMMUNICATIONS AND DEVELOPMENT

20 years

- Miss Angela Frederick, Section Administrator (Civil and Environmental Engineering)
- Dr Jianguo Liu, Reader in Remote Sensing (ESE)
- Dr Andrew Marquis, Senior Lecturer (Mechanical Engineering)
- Mrs Sheelagh McGinley, Accounting Operations Student Finance Manager (Finance)
- Mr Christopher O’Sullivan, Forward Delivery Supervisor (Faculty of Medicine Centre)
- Dr Dimitrios Papadakos, IT Support Specialist (ICT)
- Mr Martin Sayers, Digital Media Producer (Communications and Development)
- Professor John Seddon, Professor of Chemical Physics (Chemistry)
- Professor Daniel Segal, Professor of Quantum Optics (Physics)
- Dr Atanas Tomov, Research Associate (Chemistry)

30 years

- Mr Stephen Berry, Operations Supervisor (ICT)

40 years

- Miss Jennifer Linfield, Principal PA to Director (Kennedy Institute)

SPOTLIGHT

Martin Sayers, Digital Media Producer, Communications and Development 20 years



When Martin first joined the College in 1992, he worked in the Department of Materials as a technician. His career path altered dramatically in 1996, when he met TV Studio Manager, Colin Grimshaw, who sparked his interest by talking to him about his job. “Six weeks later a vacancy came up for a production assistant in the studio and I got it,” he says. Over the next 16 years, Martin and Colin made over 300 productions together, capturing College research, high profile visits and public events, before Colin retired last December. “He was a fountain of knowledge on all things video and taught me a lot,” says Martin. In 2002, the TV Studio joined the Communications and Development Division, and Martin was promoted to Digital Media Producer. Today, his role includes creating videos for news stories on the College website and live broadcasts of graduation ceremonies at the Royal Albert Hall. “One of my most memorable jobs was earlier this year, when I went to Buckingham Palace to film Prince Philip in his private library,” he says. Outside work, Martin enjoys living by Shoreham beach, skateboarding, skiing and snowboarding, and spending time with his wife and two boys.

Forty years of animal welfare research

Richard Oxenham (Bioengineering) retired from the College this month after 40 years of service. He was first employed by Imperial in 1971 as an Assistant Experimental Officer in the Physiological Flow Studies Unit. He was promoted to Assistant Research Officer, then to Research Officer, and finally to his last role at the College as Electronics Officer.

Richard specialises in projects using physiological data, such as body temperature, to judge the well-being of animals and has worked with everything from camels to oxen. He

pinpoints a project he did on penguins in Antarctica as one of his most memorable. The aim of the project was to find out whether penguins were getting unduly stressed by the tourist trade. “For the project we had to make artificial penguin eggs with instrumentation inside to detect the heart rate of the penguins using infrared detectors. Sadly I didn’t get to go to Antarctica myself,” he notes. Richard also did some work in preparation for the Olympics in Atlanta in 1996 to find out the best way to look after horses travelling long distances.

Richard officially retired

two years ago but has continued to work part-time. He insists that this time it is “proper retirement!” Over the years, he has really enjoyed working with his colleagues. “It’s also been fantastic to get the chance to do some really interesting projects and help improve the welfare of animals by understanding their needs.”

Richard is looking forward to doing more walking, travelling and cooking in his retirement. “I like making casseroles and other concoctions – in true research fashion I like to experiment!” he says.

—EMILY ROSS, COMMUNICATIONS AND DEVELOPMENT



Top: Richard Oxenham pictured at his retirement party in the Department of Bioengineering.



Bottom: Richard undertook a project studying the effect of tourism on penguins in Antarctica.

Welcome new starters

Ms Shirley Adeyefa, Faculty of Medicine
 Dr Mauricio Arias, Medicine
 Ms Naomi Armanasco, Medicine
 Dr Ali Ashek, Medicine
 Dr Wenjia Bai, NHLI
 Mrs Claire Bellone, Surgery and Cancer
 Dr Susan Brook, Medicine
 Dr Viviana Buffa, Medicine
 Mr Steven Burgess, Biology
 Miss Mira Chawda, Medicine
 Mr Graeme Cleugh, Chemistry
 Mr Tom Cole, Medicine
 Dr Alethea Cope, Medicine
 Mr Aurelio De Sousa Ferreira, EEE
 Mr Saeed Dehghanpoor Abyaneh, Civil and Environmental Engineering
 Mr Thomas Digby, Occupational Health
 Miss Saheli Dodhia, Clinical Sciences
 Professor Sir Liam Donaldson, Global Health Innovation
 Mr Carlos Dunn, Catering
 Miss Abbey Evans, Medicine
 Dr Tom Fayle, Life Sciences
 Mr Lambert Felix, Public Health
 Dr Lucia Fischetti, Medicine
 Dr Ian Flindall, Surgery and Cancer
 Dr Nicolas Foin, Bioengineering
 Dr Ioannis Fotinopoulos, Business School
 Mr Paul Francis, Computing
 Mr Kenko Fujii, Computing
 Dr Piers Gaffney, Chemical Engineering and Chemical Technology
 Mr Juan Gallo Paramo, Surgery and Cancer
 Mr Juan Garcia De La Cruz Lopez, Aeronautics
 Dr Toby Gee, Mathematics
 Dr Daniel Gibbons, Public Health
 Mr Eral Goxhi, Catering
 Mr Ricardo Gozalbo Belles, Mechanical Engineering
 Mr Lukasz Grabowski, Mathematics
 Mr Mark Hahnel, NHLI
 Miss Sarah Harman, Medicine
 Mr James Hayward, Public Health
 Dr Martin Hedegaard, Materials
 Mr Sebastian Henkel, Mechanical Engineering
 Dr Carolina Herrera, Medicine
 Mr Edward Hill, Physics
 Miss Nicola Hopewell, Medicine
 Miss Neveen Hosny, Chemistry

Dr Hazem Ibrahim, Medicine
 Mr Syed Imtiaz, EEE
 Dr Rajeshree Khengar, Medicine
 Dr Deborah King, Medicine
 Mr Ben Kingsbury, Chemical Engineering and Chemical Technology
 Dr James Kinsey-Jones, Medicine
 Dr Chuay Koo, Surgery and Cancer
 Dr Myutan Kulendran, Surgery and Cancer
 Mr Ka Kwok, Computing
 Miss Megan Lawrence, Medicine
 Ms Abi Lower, Aeronautics
 Miss Frances Main, Communications and Development
 Dr Jamie Mann, Medicine
 Dr Nadine Martin, Clinical Sciences
 Dr Richard Matthews, Chemistry
 Mrs Deborah Mckenna, Medicine
 Miss Claire Merrifield, Surgery and Cancer
 Ms Karen Mortell, Faculty of Medicine
 Dr Omar Moudam, Chemistry
 Ms Hayley Osborn, Sport and Leisure
 Mr James Pagram, Faculty of Engineering
 Miss Charlotte Palmer, Physics
 Dr Dilip Patel, NHLI
 Dr Vishal Patel, Surgery and Cancer
 Ms Charlotte Pauwels, Business School
 Dr Kristopher Peterson, Bioengineering
 Mr Daniel Piner, Civil and Environmental Engineering
 Mr Christopher Rhodes, Medicine
 Mr Andrew Roberts, Security Services
 Mr Paul Rogers, Medicine
 Dr Anindita Roy, Medicine
 Professor Alfred Rutherford, Molecular Biosciences
 Mr Srikrishna Sahu, Mechanical Engineering
 Mrs Jayne Saïdy, Engineering
 Mr Desmond Samuel, Business School
 Dr Markus Schmuck, Chemical Engineering and Chemical Technology
 Dr Hema Sharma, Medicine
 Professor Robin Shattock, Medicine
 Dr Asna Siddiqui, Medicine
 Mr Terrence Simmons, Public Health
 Miss Alies Sjoukes, NHLI
 Dr Kumuthan Srisikandarajah, Surgery and Cancer
 Miss Margarita Stapountzis, Chemistry

Mr Szabi Steiner, Faculty of Medicine
 Mr Alan Styles, Reactor Centre
 Ms Mihaela Sutu, Medicine
 Ms Julie Swales, Medicine
 Dr Shafuiddin Syed, ESE
 Dr Anny Sykes, NHLI
 Mrs Inez Talbot, Medicine
 Mr Emile Tan, Surgery and Cancer
 Mrs Samia Taufiq, NHLI
 Dr Teresa Thurston, Medicine
 Miss Ana Tome Moita Banito, Clinical Sciences
 Dr Florent Tonus, Materials
 Dr John Tregoning, Medicine
 Mr Andrius Urlakis, Catering
 Mr Ivan Vallado Echevarria, Medicine
 Ms Vidhya Varghese, Surgery and Cancer
 Dr Louella Vaughan, Medicine
 Dr Almut Veraart, Mathematics
 Miss Ai Vu, Medicine
 Dr Bonnie Webster, Public Health
 Mr Mark Wheelhouse, Computing
 Mr Ray Whyte, Catering
 Mr Samuel Wilkinson, Clinical Sciences
 Dr Garry Williams, Kennedy Institute
 Mr Cihangir Yandim, Medicine
 Mrs Sharlene Yardley, Life Sciences
 Mr Ivan Zadrazil, Chemical Engineering and Chemical Technology

Farewell moving on

Ms Caroline Adams, Surgery and Cancer
 Dr Nadine Afram, Physics
 Ms Mona Aggarwal, Physics (6 years)
 Dr Rasmus Andreassen, ESE
 Dr Marco Apollonio, Physics
 Dr Elham Ashoori, Mathematical Sciences
 Mrs Ranetta Athwal-McNair, NHLI
 Dr Shakil Awan, Bioengineering
 Dr Rekha Badiger, NHLI
 Emeritus Professor Andre Balogh, Physics (5 years)
 Dr Colin Bateman, Medicine
 Dr Szabolcs Bertok, Surgery and Cancer
 Dr Mairi Black, Centre for Environmental Policy
 Ms Kristina Blagoeva, Kennedy Institute
 Ms Annelies Bobelyn, Business School
 Miss Ceri Bosede-Alabi, Faculty of Natural Sciences

Mr Michael Breza, Civil and Environmental Engineering
 Mr Edward Brightman, ESE
 Dr Frederic Brischoux, Clinical Sciences
 Dr Dorje Brody, Mathematics (11 years)
 Dr Ellen Bushell, Life Sciences
 Miss Ciara Byrne, Medicine
 Dr Alessandra Carriero, Bioengineering
 Dr Dongbin Chen, Surgery and Cancer
 Dr Jie Chen, Mechanical Engineering
 Dr Adrian Chester, NHLI (23 years)
 Dr Lawrence Cheung, Mechanical Engineering
 Dr Rana Dajani, Life Sciences
 Ms Judy Davies, NHLI
 Dr Adam De Smith, Public Health
 Dr Changyu Dong, Computing (5 years)
 Miss Kate Dudley, Business School
 Dr Bryn Edwards-Jones, Life Sciences
 Miss Katherine Elvira, Chemistry
 Mr Christoph Emmerich, Medicine
 Mrs Sally Farries, Sport and Leisure
 Dr Matthew Gardiner, Kennedy Institute
 Dr Eileen Gentleman, Materials (5 years)
 Ms Pamela Gibbs, Faculty of Engineering
 Professor Jeff Hand, Clinical Sciences
 Ms Nicky Harman, Humanities (10 years)
 Dr Hsueh-Lui Ho, Medicine
 Dr Ka Ho, Surgery and Cancer (5 years)
 Dr Richard Husicka, Surgery and Cancer
 Dr Becky Inkster, Medicine
 Ms Vasanthi James, Medicine
 Dr Andrew Jones, NHLI
 Dr Werner Karl, EEE (7 years)
 Dr Clemens Kupke, Computing
 Dr Thomas Lafitte, Chemical Engineering and Chemical Technology
 Dr Renaud Lambiotte, Mathematics
 Mr Jean-Noel Levy, Chemistry
 Mr Rhys Lloyd, Physics
 Dr Robert Long, Mechanical Engineering (6 years)
 Dr Jason Lotay, Mathematics
 Dr Anne-Laure Mahul-Mellier, Medicine
 Dr Mahlatse Makgoba, Surgery and Cancer
 Mr Szymon Manka, Kennedy Institute
 Ms Elisabeth Mari, Medicine
 Dr Mardit Matian, ESE
 Mr Thomas Mercer, NHLI

Dr Danilo Miskovic, Surgery and Cancer
 Dr Alexey Moshkov, NHLI
 Dr Miguel Olalla Tarraga, Life Sciences
 Miss Kerstin Papenfuss, Medicine
 Dr Vanash Patel, Surgery and Cancer
 Dr Stuart Paterson, Physics
 Mr Christopher Payne, Computing
 Miss Annarosa Pesole, Business School
 Dr Izabela Piotrowska, NHLI
 Dr Salman Rana, Surgery and Cancer
 Dr Michael Roberts, Chemical Engineering and Chemical Technology
 Dr Emma Robinson, Computing
 Mr Gordon Ross, Mathematics
 Dr Indrani Roy, Physics
 Mr Federico Sastre Charlo, Life Sciences
 Dr Christina Schumacher, Public Health
 Mr Vineet Sharma, Clinical Sciences
 Dr Francesco Simonetti, Mechanical Engineering (7 years)
 Dr Thomas Sorensen, Mathematics
 Dr Jeff Temblay, Medicine
 Professor Howard Thomas, Medicine
 Mr Chris Thompson, Life Sciences
 Dr Flavie Vial, Public Health
 Mr Tobias Wood, Computing
 Dr Susannah Wyles, Surgery and Cancer
 Dr Veronica Yu, Clinical Sciences (5 years)

retirements

Mr Steven Dolman, Security Services (18 years)
 Mrs Anne McCarthy, Surgery and Cancer (19 years)
 Professor Geoffrey Pasvol, Medicine (20 years)
 Mr Richard Patterson, Estates (15 years)

This data is supplied by HR and covers the period 28 March–17 April. This data was correct at the time of going to press.

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

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



25 MAY ▶ PUBLIC LECTURE

The pursuit of pulsars

As a doctoral student, Professor Dame Jocelyn Bell Burnell, Visiting Professor, Oxford University, discovered pulsars – rapidly spinning neutron stars that emit beams of radiation. The discovery opened up a new branch of astrophysics, and was recognised by the award of a Nobel Prize

to her supervisor Antony Hewish. In the fourth Peter Lindsay Memorial Lecture, presented by the Department of Electrical and Electronic Engineering in association with the City and Guilds College Association, she will introduce these amazing pulsing stars and discuss their extreme properties. Professor Peter Lindsay was a renowned electrical engineer who specialised in research on microwave electron tubes.



2 JUNE ▶ INAUGURAL LECTURE

A random walk through droplets, powders and flames

Experiments are vital to scientists who seek to understand why flames, droplets and powders behave in a certain way. In his inaugural lecture, Professor Yannis Hardalupas (Mechanical

Engineering) will describe the engineering problems that have driven his research. From the production of detergent powder to the dispersion of droplets in rocket engines, he will show the importance of experiments in understanding the 'real' physics.

Read an interview with Professor Hardalupas on page 11.

take note

NatWest sub-branch closure

The NatWest sub-branch in the Sheffield Building on the South Kensington Campus closed on 12 May. The cashpoints on the ground floor will remain; NatWest customers can use other branches in South Kensington (opposite the station), Knightsbridge and Gloucester Road.

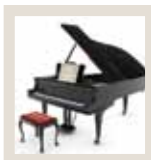
For details of consequent changes to the College's banking operations, visit: www.imperial.ac.uk/staff/announcements



17 MAY ▶ MUSIC

Lunchtime concert

Andrew Zolinsky (piano)



19 MAY ▶ MUSIC

Lunchtime concert

Gina McCormack (violin) and Nigel Clayton (piano)

17 MAY ▶ INAUGURAL LECTURE

Structural engineering for extreme loads

Professor Ahmed Elghazouli (Civil and Environmental Engineering)

19 MAY ▶ PUBLIC LECTURE

Carbon capture and storage: our only hope to avoid dangerous climate change?

Professor Martin Blunt (Earth Science and Engineering)



24 MAY ▶ PUBLIC LECTURE

Nuclear forensics: a capability we hope never to use

Dr Jay Davis, President, The Hertz Foundation



24 MAY ▶ PUBLIC LECTURE

Innovation and economic growth

Panel including Dr Keith Smith, Department for Business, Innovation and Skills (BIS)

17 MAY ▶ SEMINAR

Interplay between adaptive and innate immune responses to optimise vaccination strategies

Professor Vincenzo Cerundolo, Weatherall Institute of Molecular Medicine

19 MAY ▶ PUBLIC LECTURE

From cellular mechanotransduction to biologically inspired engineering

Professor Don Ingber, Harvard University



24–26 MAY ▶ COURSE

Teaching with a difference

Residential course led by the Graduate Schools

18 MAY ▶ INAUGURAL LECTURE

A zigzag journey into the inner workings of cellular nano-machines

Professor Xiaodong Zhang (Life Sciences)



19 MAY ▶ PUBLIC LECTURE

Computational service economies: design and application

Professor Nick Jennings, University of Southampton

20 MAY ▶ INAUGURAL LECTURE

Chemical engineering and beyond

Professor Serafim Kalliadasis (Chemical Engineering and Chemical Technology)

26 MAY ▶ MUSIC

Lunchtime concert

Jesse Krebs (clarinet) and Kazuo Murakami (piano)

1 JUNE ▶ INAUGURAL LECTURE

These joints are made for walking

Professor Anthony Bull (Bioengineering)

MEET THE READER



Marcus Rees-Roberts, Development Manager, Major Projects (Communications and Development)

What are you doing in the picture?

I was visiting the Great Wall of China on a day off from a work trip to Asia. I was accompanying the Rector, senior academics and members of my Division to run the first Rector-hosted events for Imperial alumni in Beijing and Taipei.

What would you do if you were editor of Reporter for a day?

I would try and find some kind of link between Imperial and the mighty Cambridge United, so I could interview my team.

Who would be your cover star?

I'd love to use the picture of me shaking hands with President Ma, the President of Taiwan! He was full of praise for Imperial – in particular the Railway and Transport Strategy Centre (RTSC), which helped Taiwan to develop one of the best metro systems in the world.

Want to be the next reader featured in Reporter? Send in a picture of yourself with a copy of Reporter in your location of choice to: reporter@imperial.ac.uk

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✉ Visit www.imperial.ac.uk/events for more details about these events and others. To sign up for regular updates about Imperial events please email: events@imperial.ac.uk

