



## Energy in hand

Step inside Imperial's Energy Futures Lab  
and meet the inventors tackling global  
challenges **CENTRE PAGES**



### PRIZED EDUCATION

2,000 students  
graduate on  
Commem Day

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### TAKING OFFICE

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What makes  
gunpowder go  
off with a bang?

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EDITOR'S CORNER

## Energy matters

In laboratories across the world, scientists are engaged in urgent races to be the **first to discover** or innovate in their field. Few races have as much riding on them as that to discover and invent the **next generation of energy sources**. With carbon supplies depleted, it is recognised as the main technological challenge of our time. At Imperial we are at the forefront of inventions you haven't heard of yet, such as new devices that extract hydrogen from algae to power the home. Our focus for such ideas is the **Energy Futures Lab**, officially opened as an Imperial institute this week. Born four years ago, its new status recognises its role in bringing together researchers and spotlighting the innovations with energy which the College is making every day. See pages 8–9 to learn more.

EMILY ROSS, EDITOR

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The next publication day is 26 November. Contact Emily Ross: [reporter@imperial.ac.uk](mailto:reporter@imperial.ac.uk)

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**Cover photograph:** Dr Ricardo Martinez-Botas displays an invention designed by Imperial's Turbocharger Group (Mechanical Engineering). This active component recovers energy that would otherwise be wasted in an internal combustion engine exhaust.

## Research Excellence Awards

On 13 October, the College announced the 2009 results of the Research Excellence Awards, a scheme designed to reward research teams that have demonstrated high academic achievement and have significant future potential. The teams that will each receive an award for £150,000 for blue-skies research are:

- Research team: Molecular Systems Engineering, Department of Chemical Engineering and Chemical Technology. Team leader: Professor George Jackson.

- Research team: Complement regulation in health and disease, Division of Medicine. Team leaders: Professor Marina Botto, Professor H. Terence Cook and Dr Matthew C. Pickering.

- Research team: Nanoscale Science and Technology, Department of Physics. Team leader: Professor Russell Cowburn.

Commenting on the results, Professor Sir Peter Knight, Senior Principal of Imperial, said: "There was a high standard of entries for the Research

Excellence Awards this year from all areas of the College and the finalists were truly exceptional. Encouraging blue-skies research is vital for Imperial – as it is often research which starts out as curiosity-driven which leads to the biggest scientific breakthroughs."

The successful teams were chosen by a panel which included Rector Sir Roy Anderson and Professor Sir John Bell, President of the Academy of Medical Sciences and Regius Professor of Medicine at Oxford University.

## Face the future with confidence

Imperial graduates should face the future with confidence, despite the tougher job market, said the Rector, Sir Roy Anderson, at the Commemoration Day graduation ceremonies on 21 October.

Addressing over 2,000 graduates and almost 5,500 guests over two ceremonies in the Royal Albert Hall, Sir Roy said that confidence in the quality of Imperial's education is high, and that leading employers value the skills and knowledge the College's graduates possess.

The first Rector's Medals for Teaching and Pastoral Care for staff who have shown exceptional commitment to supporting and developing students were also awarded. Teaching Medals went to Dr Matthew Genge (Earth Science and Engineering), Dr Silvestre Pinho (Aeronautics), Professor Denis Wright (Life Sciences), recently appointed Dean of Students, and Professor Richard Thompson



(Physics). Recognised for their dedication to pastoral care were Professor David Lloyd Smith (Civil and Environmental Engineering), the first Dean of Students, and Mr David Allman from the Student Counselling Service.

Members of the College community were named for their contributions to Imperial. New Fellows are Professor Dame Julia Higgins, who served Imperial as lecturer, professor and Principal of the Faculty of Engineering; Mr

Tony Mitcheson, former College Secretary and Clerk to the Court and Council; and Professor Rees Rawlings, who was Pro Rector for Educational Quality from 1999 to 2007, and lecturer and professor in the Department of Materials before that. The College's new Associate is Miss Linda Jones, a leading administrator in the Faculty of Natural Sciences.

Honorary degrees were also awarded to leading structural biologist Professor Dame Louise Johnson, and to Dr Mohamed Ibrahim, mobile communications pioneer and founder of the Mo Ibrahim Foundation, which works for accountable government in Africa.

—JOHN-PAUL JONES, COMMUNICATIONS



Imperial's new Fellows, Associate and Honorary Graduates (from top left to bottom right): Mr Tony Mitcheson, Professor Dame Julia Higgins, Dr Mohamed Ibrahim, Professor Rees Rawlings, Miss Linda Jones and Professor Dame Louise Johnson.

## Helping farmers in sub-Saharan Africa



A new project that aims to help local farmers in sub-Saharan Africa and to provide healthy school meals for local children was launched on 15 October. The project, run by the Partnership for Child Development at Imperial, is supported in part by a \$12 million grant from the Bill and Melinda Gates Foundation.

The project will help governments to run school meal programmes using locally sourced food, providing regular orders and a reliable income for local farmers. While many countries in sub-Saharan Africa already have school meal programmes in place, these programmes are traditionally run by international aid agencies, mostly using imported food.

Smallholder farmers in sub-Saharan Africa, the majority of whom are women, can often find it difficult to earn enough money to feed their

families. They typically have small patches of land where they are only able to grow small amounts or poor quality food because they cannot afford modern seeds and fertilisers, and they lack access to a regular and lucrative market to sell their goods.

“By putting school feeding programmes using locally-sourced food in place, we can ensure that the smallholder farmers who supply the food get a reliable income that helps them look after their families and improve their businesses.

We want to give them the skills and know-how to shape their own futures and beat poverty,” said Dr Lesley Drake, project lead, from the Partnership for Child Development at Imperial’s Department of Infectious Disease Epidemiology.

—LUCY GOODCHILD, COMMUNICATIONS

“We want to give them the skills and know-how to shape their own futures and beat poverty”

## AHSC second birthday

On 20 October an event was held in the Queen’s Tower Rooms on the South Kensington Campus to celebrate the second birthday of the Academic Health Science Centre (AHSC).

The AHSC is a unique partnership between Imperial College London and Imperial College Healthcare NHS Trust that aims to improve the quality of life of patients and populations by taking new discoveries and translating them into new therapies as quickly as possible.

Speaking at the event about the achievements and aspirations of the AHSC, Professor Stephen Smith, Principal of the Faculty of Medicine and Chief Executive of Imperial College Healthcare NHS Trust, said: “I can truly say now that clinical research, education

and service are equal on everyone’s mind – that we are beginning to achieve our integrated triple mission to the benefit of patients. The unique partnership of our AHSC means that we can now harness new discoveries and translate them swiftly into patient care, and we’ve recent successes that reflect this – but we still have some way to go.”

The event also showcased four films that illustrate the AHSC’s approach in action. The films show how patients from the Trust and beyond are benefiting from new tests, treatments and surgical techniques that have been devised by researchers at the College, working closely with their colleagues at the Trust.

—LAURA GALLAGHER, COMMUNICATIONS



(L–R) Rector Sir Roy Anderson with the Imperial College Healthcare NHS Trust’s Managing Director, Chairman and Chief Executive: Claire Perry, Lord Tugendhat and Professor Stephen Smith.

To watch the videos showcasing the AHSC visit: [www3.imperial.ac.uk/news/ahscfilms](http://www3.imperial.ac.uk/news/ahscfilms)

### in brief

#### Director of HR

Mrs Louise Lindsay has accepted appointment as Director of Human Resources with effect from 1 November 2009 in succession to Mr Chris Gosling. Mrs Lindsay joined the HR Department in 1989 and was Director of HR Operations from 2004. In her new role she will retain senior responsibility for HR Operations. Mr Gosling has moved into the new position of Director of Health, Safety and Environmental Management.



#### Research Excellence Framework

The HEFCE consultation on the proposed development of the Research Excellence Framework (REF) was published on 23 September, for response by 16 December. The REF aims to identify the highest quality research activity and the impact arising from excellent research within the UK HE sector. The Planning Division is preparing the College’s response and is seeking input. For guidance on how to offer feedback on the consultation, email Josie Lewis-Gibbs, Planning Officer ([josie.lewis-gibbs@imperial.ac.uk](mailto:josie.lewis-gibbs@imperial.ac.uk))

For further information and a link to the REF consultation, visit: [www.imperial.ac.uk/planning/strategicprojects/researchassessment/ref](http://www.imperial.ac.uk/planning/strategicprojects/researchassessment/ref)

#### Imperial Innovations profits

Between July 2008 and July 2009 Imperial Innovations saw the value of its net assets rise to £85.6 million, an increase of 7 per cent and made £3.9 million through selling investments. The results published in its Annual Report showed that Innovations also invested over £14 million in 20 existing spin-out companies and supported the formulation of four new companies.

“One of the most memorable moments of the trip was walking along a track through the jungle, and seeing a group of chimpanzees emerge from the trees and walk right across the path in front of us”

—THIRD YEAR BIOLOGY STUDENT TOM BARBER SPEAKING ABOUT IMPERIAL’S FIRST FIELD TRIP TO KIBALE NATIONAL PARK IN WESTERN UGANDA.

To see a slideshow of pictures from the trip visit: [www3.imperial.ac.uk/news/ugandatrip](http://www3.imperial.ac.uk/news/ugandatrip)

Imperial College Healthcare NHS Trust

## Trust's gold standard

Imperial College Healthcare is one of only 10 NHS Trusts in the country to be awarded the gold standard of safety – NHS Litigation Authority (NHSLA) level three. The award demonstrates that the Trust is providing a safe environment and safe clinical care, and has competent and capable staff and excellent governance, according to more than 50 criteria.

The NHSLA provides insurance to the Trust in relation to clinical negligence claims. As a result of demonstrating how seriously it takes patient safety, the Trust will save £3 million a year by having lower mandatory insurance fees.

## Hand hygiene campaign reinforced



The Trust is reinforcing its hand hygiene awareness programme ahead of the winter season.

Banners picturing Clinical Programme Group Director Professor Nick Cheshire (SORA) wash-

ing his hands alongside the slogan: "My hands are clean, are yours?" are being placed across to Trust to promote the campaign. Hand hygiene helps reduce the transmissions of infection, including flu and norovirus. Good hand hygiene is particularly important to Professor Cheshire in preventing surgical site infections in his Clinical Programme Group, which cares for cardiothoracic and surgical patients.

—IMPERIAL COLLEGE HEALTHCARE NHS TRUST PRESS OFFICE

## L Block construction underway

Construction of the flagship facility of the Academic Health Science Centre (AHSC) began in September following demolition of the former L and J blocks on the Hammersmith Campus.

The new L block will bring together Faculty of Medicine staff previously spread across different campuses and will be a powerhouse of clinical research, transforming discovery into treatment in the same building and playing a pivotal role in fulfilling the aims of the AHSC.

The development will encompass the largest cardiovascular research facilities in Europe, a new Wellcome Trust clinical research facility, the Medical Research Council Clinical Sciences Centre (MRC CRC) and a new imaging unit. Imperial researchers based there will develop better therapies for conditions such as heart failure, artery disease, arthritis, diabetes and obesity.

Work on the foundations of the new building is now underway and will be completed by January 2010. The architecture will incorporate a central atrium connecting the laboratories in its west block and offices for scientists and researchers in its east block.

Speaking of the project's progress, Professor Gavin Screaton, Campus Dean, said: "With the old buildings now demolished, the next stage of the project will see a world class facility for medical research rise from the ground. It's an exciting phase in the history of the Hammersmith Campus and the development of the AHSC."

Building work will be complete by



[Top] Construction company Bovis Lend Lease have started work on the foundations for the new L block development. [Bottom] Artist's impression of the new L block, due for occupation in 2012.

summer 2011, with the facilities due for occupation in 2012.

The AHSC is a unique kind of partnership between Imperial College London and Imperial College Healthcare NHS Trust, formed in October 2007.

—CAROLINE DAVIS, COMMUNICATIONS

## Celebrating the life of Riva Desai



Dr Lynda White, Senior Tutor (Mathematics) attended the ceremony along with Dr Frank

Imperial staff and students attended a memorial service earlier in the autumn to celebrate the life of 20-year-old Riva Desai, who was reading mathematics at the College when she died in a moped crash on 14 August in Nadiad, Gujarat, India.

Berkshire, Director of Undergraduate Studies (Mathematics). Describing Riva, Dr White said: "I knew Riva in her role as MathSoc president, a role she undertook with her usual infectious enthusiasm and efficiency, and which made her well-known in the Mathematics Department. In addition to her enormous contribution to the Department through her involvement with MathSoc, Riva was a very able student who loved mathematics and who was probably on her way to achieving a first class degree. It is no great surprise that her second year group produced one of the three best projects in the summer, earning

them a share of the Winton Capital prize."

The memorial service was attended by 200 people and was held in Riva's home town of Willenhall in Wolverhampton on 20 September. The event was organised by Riva's family and included speeches by her friends and cousins, a dance performed by East Meets West (Imperial's Indian society) and singing by a gospel choir.

Commenting on the service, Dr White said: "It was a very moving occasion which emphasised Riva's involvement with many aspects of College life and her love of life in general. Her passing is a very sad loss for the Department."

## media mentions

—AMNA SIDDIQ, COMMUNICATIONS



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

**BUSINESS MIRROR.COM** ▶ 18.10.2009

### Missing the 2010 biodiversity target

By some estimates, 12,000 species become extinct each year, and the rate is accelerating, according to the *Business Mirror*. Despite a pledge made in 2003 by government ministers from 123 different countries to reduce the rate



of biodiversity loss by 2010, the international organisation Diversitas claims that many green policy decisions do not consider impact on diversity. Professor Georgina Mace (Centre for Population Biology and vice-chair of Diversitas) said: "Changes to ecosystems and losses of biodiversity have continued to accelerate. Species extinction rates are at least 100 times those in pre-human times and are expected to continue to increase."

**BBC NEWS ONLINE** ▶ 22.10.2009

### Low doses of radiation damaging to heart

Studies show that workers exposed to long-term doses of radiation have higher levels of heart disease, reports the BBC. A team led by Dr Mark Little (Epidemiology and Public Health) constructed a mathematical model to find the risks associated with low background levels of radiation. This model suggests the risk would increase as the dose increases. Dr Little said: "If the mechanism is valid it implies that risks from low-dose radiation exposures like medical and dental X-rays, which until now have been assumed to result only from cancer, may have been substantially underestimated."

**THE TIMES** ▶ 23.10.2009

### Student has say on *Question Time* controversy

Debate over the inclusion of Nick Griffin, leader of the British National Party, on the BBC's



*Question Time* panel made its way to Imperial, according to a report in *The Times*.

About 600 demonstrators protested outside Television Centre as Mr Griffin was ushered towards the studio. Physics undergraduate Josh Gordon was one member of the programme's audience who thought that it was right to have Mr Griffin on the show. "It's all about freedom of speech. By having him here I know no one else is being censored," he said.

**THE SUN** ▶ 26.10.2009

### Diets not working may be linked to 'fat brain'

Have you ever wondered why you crave high calorie fatty foods rather than healthy fruit and vegetables? The answer may be that some of us simply have a 'fat brain', says *The Sun*. The newspaper reports that Imperial researchers have found that overweight people experience more powerful brain signals when they see high calorie food than slimmer people. The research may also show why skipping a meal could make you gain weight. Dr Tony Goldstone (Clinical Sciences) explains: "Our studies show that when we miss a meal our brains crave high calorie foods over healthy foods like salad. This makes it difficult to lose weight when you skip meals or reduce food intake because your brain is working against you."



## awards and honours

### ENGINEERING

#### Undergraduate wins UK's 'Most Enterprising Student'



Chemical Engineering student Ling-Kang Chao won the local and regional finals of Shell's annual search for

the UK's most enterprising student in its nationwide work placement programme. Working at medical imaging company Ixico, Ling-Kang helped increase the company's user base by 30 per cent using social media.

### ICT

#### Installation of the year

Imperial has won the Education Installation of the Year award in the annual AV Awards, run by A-V magazine, held on 9 October. Over the last three years, ICT has worked with audio visual framework partner Reflex to refurbish, service and maintain 38 lecture theatres across the College campuses. Among the projects recognised through the award was the refurbishment of the Wolfson Education Centre on the Hammersmith Campus.

### ENGINEERING

#### IBE recognised for outstanding innovation

Scientists from the Institute of Biomedical Engineering (IBE)

received the Outstanding Contribution to Innovation and Technology Award at the 2009 *Times Higher Education* awards ceremony, held at the Grosvenor House Hotel on 15 October 2009. The IBE researchers were recognised for pioneering work that has led to new developments in medical diagnosis equipment, personalised healthcare devices, new regenerative medicine techniques and new medical imaging technologies.



### ENGINEERING AND MEDICINE

#### BBSRC success

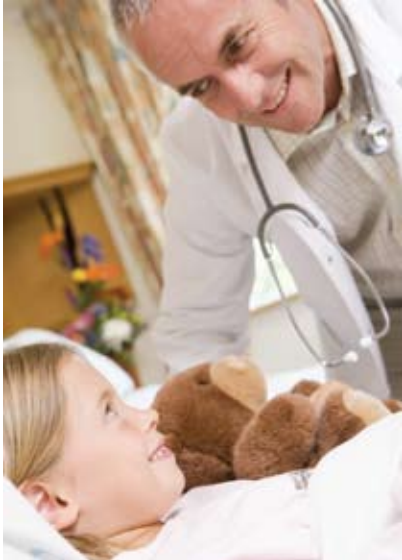
Nir Grossman, a student working for his PhD in the Institute of Biomedical Engineering and Division of Neuroscience, has been

awarded a BBSRC Enterprise Fellowship to enable him to advance the commercialisation of his work developing a new type of retinal prosthesis for blind people with degenerated retinas.

### MEDICINE

#### Yale visiting professorship for Chayen

Professor Naomi Chayen (SORA) has been named the Sterling Drug Visiting Professor of Pharmacology at Yale University. Professor Chayen is the President of the International Organisation for Biological Crystallisation and is regarded as one of the world's foremost experts on the crystallisation of proteins.



## Children's short stay hospital admissions show increase

The number of children being admitted to hospitals in England for short stays increased by 41 per cent between 1996 and 2006, according to research published in *PLoS ONE* on 15 October. The authors of the study, from Imperial, say this increase may be linked to a short-

fall in out-of-hours primary care services, but further research is needed before they can draw any firm conclusions.

The new research looked at unplanned hospital admissions of children aged under 10. While longer stays in hospital decreased by 12 per cent between 1996 and 2006, short stays of less than two days increased by 41 per cent. Overall, there was a 22 per cent increase in the rate of children's unplanned hospital admissions.

Dr Sonia Saxena, Clinical Senior Lecturer in Primary Care (EPHPC) and her collaborators from St George's Healthcare NHS Trust and the UCL Institute of Child Health identified the five most common illnesses that led to short stay admissions in the ten year study period, which included asthma, abdominal pain, respiratory infections and fever. They say that, in many cases, illnesses like these are usually minor and could be treated in the community, rather than in hospital.

Commenting on the results, Dr Saxena said: "Our study suggests that too many children may be being admitted to hospital with minor illnesses. Short, unplanned stays in hospital are expensive for the health service and can be very disruptive for families, as well as putting the child at risk of hospital acquired infection unnecessarily."

—LUCY GOODCHILD, COMMUNICATIONS

## Herschel scans hidden Milky Way

The Herschel Space Observatory has produced spectacular new images of interstellar material in our galaxy, using the UK-led SPIRE camera in tandem with Herschel's other camera, PACS.

Imperial physicists have played a key role in conceiving, designing and developing the SPIRE instrument over the last 20 years, and more recently have been instrumental in developing the software to convert masses of raw data from space into the pictures that were released by the European Space Agency on 2 October.

The new pictures, made during the first trial run with the two instruments operating at the same time, have unveiled a small part of our Milky Way galaxy as we have never seen it before, and bode well for one of Herschel's main scientific projects, which is to survey large areas of the galaxy.

Dr David Clements (Physics) from the SPIRE team said: "These images show SPIRE and PACS working together in perfect harmony, something that will be needed not only for studies of our own galaxy but also for Herschel's large UK-led studies of galaxy evolution. It also demonstrates the UK's instrumentation expertise for future far-infrared (IR) space missions."

The SPIRE camera responds to light at wavelengths between 250 and 500 microns, or millionths of a metre, which is 500 to 1,000 times longer than the wavelength of visible light. PACS covers wavelengths between 70 and 170 microns. Together they provide detailed images in five different far-IR colours.

The two instruments have taken images of an area about 16 times as big as the size of the Moon as seen from Earth, revealing an extremely rich reservoir of cold material in the galactic plane.

—JULIA SHORT, PRESS OFFICER, SCIENCE AND TECHNOLOGY FACILITIES COUNCIL



## Improving British athletes' performance on the world stage

Imperial scientists are developing a range of miniaturised wearable and track side sensors, computer modeling tools and smart training devices to help British athletes improve their performance on the world stage, as part of a new £8.5 million project that launched on 28 October.

The Elite Sport Performance Research in Training with Pervasive Sensing (ESPRIT) project is funded by the EPSRC and is led by Imperial in partnership with UK Sport and supported by Queen Mary University of London and Loughborough University. It involves researchers from the three universities working alongside British athletes via UK Sport's Research and Innovation programme.

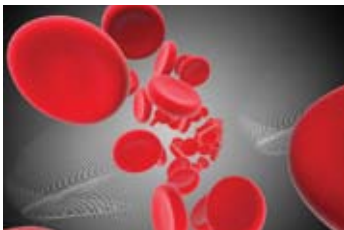
For their first project, the Imperial team has created prototype networks of miniature video camera sensors, called Vision Sensor Networks (VSNs), which coaches can use to monitor an athlete's movements and assess their strategies while training. The scientists are already trialling the VSNs with athletes training for Britain's summer and winter Olympic sports.

Professor Guang-Zhong Yang (Computing) is the principal investigator and programme director of ESPRIT. He said: "We expect that the ESPRIT project will make innovative leaps in biosensor design and allow us to look in really fine detail at the physiological changes that happen to an athlete during training and competition. .... The project will also give scientists new insights into how people's bodies work, in order to help them to design devices that improve the health and wellbeing of the general population."

—COLIN SMITH, COMMUNICATIONS

“Medals are won and lost within the tiniest margins.”

# Hemoglobin regulation gene identified



A gene with a significant effect on regulating hemoglobin in the body has been identified as part of a genome-wide association study, which looked at the link between genes and hemoglobin level in 16,000 people. The research was carried out by scientists from Imperial and published in *Nature Genetics* on 16 October. It shows a strong association between a gene known as *TMPRSS6* and the regulation of hemoglobin.

“This new finding is critical: understanding how hemoglobin levels are controlled at a genetic level has significant public health implications for people of all ages in developing and developed countries”, explained Dr John Chambers (EPHPC), one of the lead authors of the study.

“Abnormally high or low

levels are associated with a range of serious health problems, such as poor growth (low levels) and increased risk of stroke (high levels). Changes in hemoglobin levels can also affect our susceptibility to diseases like malaria, which infect the red blood cells,” said Professor Kooner (NHLI), the study’s chief investigator.

The new research adds to our understanding of the multiple causes of problems with hemoglobin levels, which include an iron-deficient diet, chronic diseases such as cancer, and genetic associations. In the future, the findings could lead to new treatments for people suffering from chronic problems with hemoglobin levels not linked to iron in the diet.

“The enzyme protein produced by the *TMPRSS6* gene is a good target for drug development. Designing a drug that enhances *TMPRSS6* activity could augment hemoglobin in people such as cancer and kidney failure patients, who suffer from chronically low levels,” added Dr Chambers.

—LUCY GOODCHILD, COMMUNICATIONS

## Expect the unexpected when adapting to climate change in Africa

Nations, communities and families in Africa need to safeguard their homes and livelihoods against the unpredictable effects of climate change, according to a discussion paper written by Professor Sir Gordon Conway (Centre for Environmental Policy), published on 28 October.

The paper describes how predicting the impact of climate change on specific countries, regions or towns in Africa is extremely difficult. Africa’s climate is driven by three very complex factors – the cycle of hot air and rain in the tropics, the monsoons, and the El Niño/La Niña phenomena in the Pacific Ocean. This makes it hard to forecast what will happen, when and where.

Climate change could cause more frequent and severe floods, droughts and other extreme weather events; decreased access to drinking water; damage to agricultural land and crops; and the spread of diseases like malaria into previously unaffected areas – all of which could have serious

“The key is helping people develop more resilient lifestyles and livelihoods”



consequences for the poorest members of society.

The uncertainty about where these effects will be felt in Africa presents a unique set of challenges, as Sir Gordon explains: “Essentially it means having to prepare for the unknown,” he said. “This might sound impossible but it’s not – the key is helping people develop more resilient lifestyles and livelihoods, so that unknown and unpredictable ‘shocks’ and extreme weather events are not so damaging.”

Sir Gordon is calling for governments, NGOs and the private sector to work together to increase communities’ resilience to extreme weather events associated with climate change.

—DANIELLE REEVES, COMMUNICATIONS

## Cause of common chronic diarrhoea revealed

A common type of chronic diarrhoea may be caused by a hormone deficiency, according to new research published in the November issue of *Clinical Gastroenterology and Hepatology*. The authors of the paper, from Imperial, with collaborators from King’s College London and the University of Edinburgh, say their results could help more doctors recognise this type of diarrhoeal illness, and may lead to the development of more effective tests and treatments to help improve the lives of many people with



chronic diarrhoea.

chronic diarrhoea.

Chronic idiopathic bile acid diarrhoea affects an estimated one in 100 people in the UK and it can cause people to have up to 10 watery bowel movements a day, often for months at a time. This type of diarrhoea occurs when an overload of bile acid reaches the colon and causes excess water to be secreted into the bowel.

The study suggests that bile acid diarrhoea is caused by the body producing too much bile acid, because of a deficiency in a hormone called FGF19, which normally switches off bile acid production.

Lead author of the study, Dr Julian Walters (Medicine), said: “Bile acid diarrhoea is a common condition, likely to affect more people than Crohn’s disease

or ulcerative colitis, yet until now we did not understand exactly what causes it. People with bile acid diarrhoea need to use the toilet urgently many times during the day and night. This can have a big impact on their lives, at home, at work and while they are travelling, as they always need to be near a toilet.”

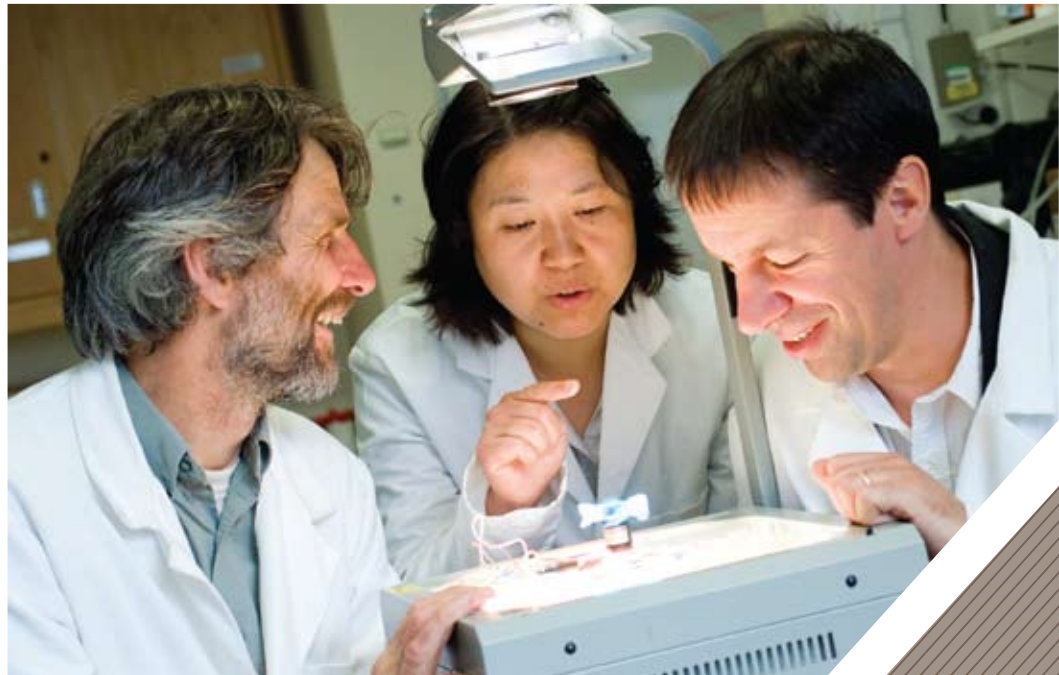
—LUCY GOODCHILD, COMMUNICATIONS



## energy FUTURES

With the UK committed to achieving an 80 per cent reduction in CO<sub>2</sub> levels by 2050, finding alternative sources of energy is a concern affecting all of us. *Reporter* finds out how the Energy Futures Lab will help the College to gear up for the research challenges of the future.

TOP: Imperial researchers discuss the performance of dye sensitised, nanocrystalline solar cells. From left to right: Dr Brian O'Regan, co-inventor of dye sensitised solar cell technology; Xiaoe Li, PhD student and research technician working on development of these solar cells; and Professor James Durrant, Deputy Director of the Energy Futures Lab.



On 4 November, the Energy Futures Lab (EFL) relaunched as a fully fledged Imperial College London Institute, housed in brightly coloured new offices in Dalby Court on the South Kensington Campus. It was opened by the Chief Scientific Advisor to the government, Professor John Beddington, highlighting the Institute's commitment to work closely with government and industry.



"Energy remains a critical global challenge, which Imperial is uniquely placed to address"

The Lab, which was founded four years ago, is directed by Professor Nigel Brandon, Chair in Sustainable Development in Energy from the Department of Earth Science and Engineering (pictured left). By bringing together the expertise of individuals spread across the faculties, and providing

coordination and support for projects, he hopes the Institute will have a big impact on the field.

"Energy remains a critical global challenge, which Imperial is uniquely placed to address," he says, "And one of EFL's key objectives is to identify future research priorities to help the College maintain its leadership position."

Activity at the Institute focuses on a number of areas. It fosters 15 research networks to encourage researchers

throughout the College to develop a critical mass of collaboration. These feed into and inspire five research 'Grand Challenges'. EFL also provides education, through the Sustainable Energy Futures MSc course, and develops links with industry, for example, its Grand Challenges with BP and Shell, and the government.

The Institute has already attracted high profile attention with recent visits including President Kagame of Rwanda; Lord Adonis, Secretary of State for Transport; and Ed Miliband, Secretary of State for the Department of Energy and Climate Change.

### Multidisciplinary

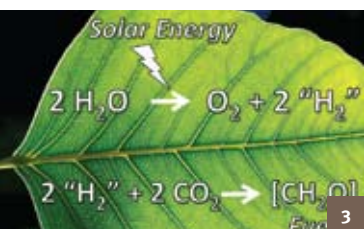
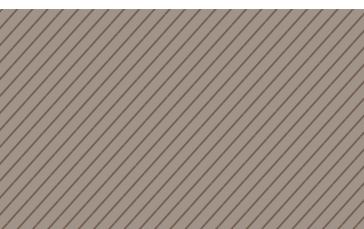
Along with the Grantham Institute for Climate Change, the Institute for Global Health and the Institute for Security Science and Technology, EFL joins the list of Imperial institutes that are addressing global problems in a multidisciplinary way.

Professor James Durrant (Chemistry) has been involved with EFL since its foundation and became Deputy Director this March. Speaking about the importance of multidisciplinary work, he says the answers to the big energy problems tend to lie between disciplines and require lots of different skills. He believes EFL can help to foster these synergies. "Having a holistic view of the problems can also help with applications for funding, as individual research projects can only go so far – multidisciplinary teams have the potential to make a far greater impact," he says.





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1. Professor Nilay Shah, co-directs the Urban energy systems Grand Challenge to explore energy savings in cities. He is pictured above with Dr Céline Weber, Research Associate.

2. Dr Ricardo Martinez-Botas (Mechanical Engineering) leads on the hybrid and electric research network, which focuses on improving electrical vehicles and hybrids as well as creating intermediate models.

3. Professor James Durrant's artificial leaf group is working to achieve artificial photosynthesis with higher efficiencies and lower demands on agricultural land than the natural process.

4. Dr Fessehaye Zemichael works in the bioreactor, a cutting edge lab, researching the production of hydrogen from, amongst other sources, algae.

5. Professor Martin Blunt (right) demonstrating carbon capture. Professor Blunt's research sits within the Shell Grand Challenge and the large Qatar Carbonates and Carbon Storage Research Centre which is part of EFL.

Multidisciplinary working is integral to solving EFL's Grand Challenges. This name is given to research which tackles the question of how to generate, supply and utilise our energy in a sustainable way and builds on the quality of the energy research Imperial is already carrying out. These include urban energy systems, clean fossil fuels and new and renewable routes to solar hydrogen.

### Artificial leaf

James is project lead of the artificial leaf project, which aims to develop artificial systems using sunlight to drive the synthesis of chemical fuels. The project is inspired by natural photosynthesis, the process by which plants use sunlight to convert water and carbon dioxide into sugar, but aims to achieve it with higher efficiencies and lower demands on agricultural land than those required for direct bioenergy conversion.

Imperial researchers are already making headway in this field through research programmes determining the molecular details of natural photosynthesis, and developing molecular based solar cells. Now the team is bringing these two areas

together to focus on the development of photoelectrodes for water photolysis – the light driven splitting of the water molecules into molecular hydrogen and oxygen – funded by a £4.5 million grant from the EPSRC led by the EFL.

When James first studied for his PhD at the College over 20 years ago, there were very few opportunities for research in solar energy. At the time, oil was cheap and solar energy was attracting almost no research in the UK. Today, it is becoming accepted that solar will be a key player in our future energy supply. “Of all the renewable technologies, solar has the greatest potential,” he says. “The solar energy hitting the planet in one hour is equivalent to the world annual demand. The key now is to develop technologies which reduce the cost of harnessing this energy resource.”

### Electric and hybrid vehicles

Another of the EFL's priorities is its 15 research networks. These include bioenergy, carbon capture and storage as well as electric and hybrid vehicles.

Dr Ricardo Martinez-Botas (Mechanical Engineering) leads on the hybrid and electric research network. He describes the challenges: “Electrical vehicles (EVs) and hybrid cars are the future of transportation but there is a limited number on the road due to public perception, expense and fears over safety.”

Therefore the network focuses not only on improving EVs and hybrids but also on creating intermediate models. For example, one group is building a conventional low carbon car which releases 99.7 grams of CO<sub>2</sub> per kilometre as opposed to a conventional car which typically releases 140–160 grams of

CO<sub>2</sub> per kilometre. “Models like these will help the world make the transition from burning fossil fuels in the grand majority of transport systems, to achieving almost zero emissions by 2050,” says Ricardo.

He sees hybrid cars (which have an internal combustion engine and an electric motor) becoming more and more popular. He reveals that he is thinking about purchasing a Toyota Prius which releases typically 89 grams of CO<sub>2</sub> per kilometre – one of the most popular hybrids on the road.

He explains what put him off choosing an EV: “EVs are perfect for inner city driving and are undoubtedly the most energy efficient cars, but they are still evolving. There is still the fear that you will run out of power and get stuck on a motorway.”

To address this problem, researchers in the network are looking at integrating EVs with a small engine which can get people home if they run out of power. Ricardo describes it as a ‘range extender’ which will give the owner peace of mind. The network is also working on projects to improve the battery life of electric vehicles.

Ricardo is enthusiastic about the research which EFL has enabled at the College, and is keen to work with industry and advise government departments on sustainable energy policy. While he acknowledges that there are already incentives in place for drivers of EVs, including exemptions from the congestion charge and free charging points, he says the government needs to invest in research to help create cheaper hybrids and EVs. He says: “I hope EFL can work closely with the government and play some part in giving the public more confidence in sustainable transport.”

—EMILY ROSS, COMMUNICATIONS



# Imperial's first PhD President

Reporter speaks to Ashley Brown, Imperial College Union

President, on the importance of a positive student experience, how he hopes to cater for non-drinkers in the future and how it really feels to be President.

## Were your friends and family surprised when you stood for president?

I don't think they were surprised as I've always been involved in clubs, and I edited *Live!*, so they knew I was outspoken. Certainly my parents thought it was because I didn't want to go out and get a job, which wasn't totally true – I did part of my computer science degree in industry, at a company called Celoxica and really enjoyed it.

## Why did you decide to run for president?

I'd spent two years as Editor of *Live!* saying: "This is wrong, this is wrong, this is wrong!" Now, rather than complain, I can do something about it.

## How would you describe your job?

Part management, part trouble shooting, as well as knowing what's going on and knowing the right people to turn to when other people are having problems. I also go to a crazy number of meetings – my Outlook diary looks like a game of Tetris!

## How do you make sure that you're at the heart of what's going on?

I was really involved in Freshers' Week events, which definitely helps, and have lots of close friends who are undergraduates from the clubs I was involved in, who are always very forthcoming about their views on what's going on.

## What motivates you in your role?

It's amazing looking outside Beit Quad on Wednesday afternoon and seeing all the students gathered to go to their clubs and societies – there's so much energy and everyone is really excited about what they're going off to do.

## Do you think your previous involvement with *Live!* will allow you an easier ride with the student media?

The people running *Live!* know I'd be disappointed if I did get an easy ride. I think people respect you when you're just honest, and you hold your hands up and say "that went wrong" rather than try and cover it up.

## What does it feel like to be the president?

It's very strange to go from just being another punter in the bar to having people know who you are. You go from being effectively nobody to somebody people have to listen to, who has responsibility for so much.

## Are there any big projects in the pipeline?

Subject to approval we plan to refurbish the ground floor of the Students' Union building. The building plan had three phases, including the bar on the ground floor, the disabled lift, the office space, the mezzanine floor and the new gym. It's so important to attract people to the Union – get a good bar and good facilities and once people are here try to get them involved in representation – because representation isn't sexy!

## I heard you were also trying to find a way of catering for students who don't drink alcohol?

40–45 per cent of students are international and many of them don't drink, and we don't offer much over here for them at the moment. We are working on finding a place for people to drink coffee or relax outside the bar area.

## What are your key policies?

I'm the first PhD president and I think postgrad issues have been pretty neglected in the past. I'm keen to improve things, working with the Graduate Students Association. Education-wise I'm keen to get the departmental representatives and year reps more engaged with the Union.

## How important is the student experience to you?

I think the student experience has a real effect on not only how you feel when you're here but how you feel when you leave. So if you think that the lecturers and tutors have been really effective and they've really helped you then you're in a really positive frame of mind about the College. However, that's not always the case – Imperial is a fantastic place but it's easy to forget that when your workload's too heavy, or when you're being asked to do lots of work and then don't get any feedback.

## Who needs to do more?

There's been a culture shift over the last couple of years. The College and students have now got working groups and IT projects, as well as a feedback system to help improve things. It's all coming together – what's frustrating is that it takes a while to filter through. People just need to keep doing what they're doing and drive the projects that are ongoing through to completion.

## How do you see your career progressing after your year as president?

I really miss working in industry. I'd like to go back to the company I was at before in a technical consultancy role.

## What would you change about Imperial?

If you'd asked me five years ago I'd have said there was a perception that it was College versus students. But I think that's actually changed quite a lot. It now feels like College and students. So instead I'd like to change the awful sixties buildings we still have. John Pendry needs to get his invisibility cloak working...

— EMILY ROSS AND JOHN-PAUL JONES, COMMUNICATIONS

# inside

## story

### mini profile

## Karim Abadir

Karim Abadir, Chair in Financial Econometrics in the Business School, on how he has developed an economic model which can see into the future.



**You have come up with a new way of modelling the economy – how is it unique?**

For a long time the economy has been modelled on a structure which assumes there is one typical firm and one typical consumer. I wanted to develop a more realistic heterogeneous system. Working with Professor Talmain from the University of Glasgow, I was able to come up with a mathematical solution that provides dynamic forecasts of the future economy – putting us in the position of being able to predict downturns and slumps before they occur. Our first results were published in the *Review of Economic Studies* in 2002.

**You used the model to predict the recession and map the trends of its recovery – how would you like your model to be used?**

Six months ago I gave a lecture where I used the model to predict that Europe and the world would come out of the recession with the US emerging first and the UK and Europe struggling to recover. This has all come true. I would like the government and banks to work with our model – it will provide them with a set of glasses to help them see where the economy is going.

**How will imminent funding cuts impact on the future state of the economy?**

Cutting funding to research agencies is the worst possible reaction to the economic situation – if anything, the government should increase the amount of funding available for research and development. It is vital to invest in the next generation because limited funding and research grants will limit the next generation's knowledge of how to run the economy and this will perpetuate the problems.

**Does your model have other uses?**

If we can forecast the economy, we can forecast the weather. Our model uses mathematical and statistical tools that can be used to analyse climate change. Together with Dr Walter Distaso (Business School), we are planning to collaborate with the Grantham Institute to develop this concept further.

—EMILY ROSS, COMMUNICATIONS

### inventor's corner

## Sustainable building

Dr Nikolaos Vlasopoulos (Civil and Environmental Engineering) has been at Imperial for six years and is a Research Associate and Chief Scientist for Novacem, a start-up company based in the Incubator at the College, which specialises in sustainable, low-carbon cement.



Dr Nikolaos Vlasopoulos holding cubes of sustainable cement – the key product of Imperial spin-out Novacem.

Novacem was founded with support from Imperial Innovations and builds on the work Nikolaos did for his PhD in the Department of Civil and Environmental Engineering, working with his supervisor, Dr Chris Cheeseman, who now has an advisory position within the company.

The sustainable cement Nikolaos has designed is made from magnesium oxide combined with special mineral additives. It offers a practical alternative to Portland cement, the most common type of cement in general use around the world, which is estimated to be responsible for CO<sub>2</sub> emissions greater than those from the aviation industry.

The manufacturing process developed by Novacem requires much lower temperatures than Portland cement making its production more envi-

ronmentally friendly. In addition, the cement hardens by absorbing significant amounts of CO<sub>2</sub>, which means that Novacem cement has the potential to be used as a 'carbon negative' product.

Now full-time at Novacem, Nikolaos divides his time between company research and management responsibilities. He works closely with technology entrepreneur Stuart Evans who joined Novacem as Executive Chairman in 2008.

Nikolaos continues to develop Novacem cement formulations and is driving the technology forward with the immediate goal of developing pilot plant facilities to showcase the material to future investors.

—ANUSHKA WARDEN, IMPERIAL INNOVATIONS

Q [www.imperialinnovations.co.uk](http://www.imperialinnovations.co.uk)

### ► SCIENCE FROM SCRATCH

As explained by Anne Coleman, MSc Science Communication

## Gunpowder



Originally developed by the ancient Chinese in the second century BC, gunpowder forms the basis of the oldest and simplest rocket, the firework. Gunpowder is a propellant comprising of mostly potassium nitrate (75 per cent), along with carbon and sulphur. When this powerful little powder is inserted into a firework and set alight, the oxygen molecules in the potassium nitrate supply the air needed for the carbon and sulphur to burn furiously. The chemical reaction produces flames and gas that expand to fill the firework, giving the thrust needed to propel the firework up and away. An internal fuse burns until the rocket reaches its optimum height and triggers the delay in the explosion of stars. Along with the brilliant colours, provided by extra chemicals added to the gunpowder, the delayed bangs add to the excitement and suspense that keeps the November tradition alight.

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 Jonny on shared house vs. halls of residence:

“It’s not until you stop to write a blog that you realise how much you fit into your life; at least given the right company and opportunities. Living in a house with three other people satisfies the first condition. There is something very different about living in a house compared to halls. Mainly because I care about my house; it may lack internet and have a worrying (growing) hole in the bathroom ceiling, but this is part of the charm. My halls were a little too perfect though, somewhere in between three star hotel and psychiatric hospital kind of perfect. Don’t worry potential freshmen, we shipped the hall off to London Met!”

blog SPOT



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

## Finance exam success

Last month Imperial celebrated the success of five staff members who passed the final exams of their professional finance qualifications during the past year. One of the five, Andrew Stagg, Finance Manager (Medicine) pictured second from right, describes his experiences of working towards the Chartered Institute of Management Accountants qualification, which he commenced in 2004:

“I knew when I started here as a trainee accountant that this qualification was the thing to aim for. At the same time I was aware of the amount of work involved and knew it can take a long time and I would have to make sacrifices, especially around exam time. That said, it didn’t impact on my life as much as I thought it would; the College gave me study leave and I just had to put more thought into how I managed my work, study and social life! My proudest moment was passing three intense exams, all on different subjects, which I had to take on three consecutive days.

As well as financially supporting the qualification, the College organised



Chief Operating Officer Martin Knight (far left) and Director of Finance Andrew Murphy (centre back) congratulate staff who have recently completed finance qualifications.

“I knew when I started here that this qualification was the thing to aim for”

workshops where people studying for the qualification and those who had finished came together to share knowledge. Being able to share experiences and tips with people who were going through the same thing, as well as getting advice from people who’d finished, was invaluable. The College also arranged for qualified accountants to act as mentors for us which was great. I think the fact that I was studying for the qualification has been a real asset to me already and has helped me to progress in my career.”

### ▶ TIME OUT

## Skydiving society

Jumping out of an aeroplane thousands of feet above the ground, and freefalling above the clouds for a precious few seconds, Imperial College Sky Diving Club’s members are part of a sport that is exhilarating, scary and humbling all at the same time. It’s a physical and disciplined sport, but the rewards are priceless.

Claudio Lettieri, who is studying for a Master’s in Mechanical Engineering, is one of the Sky Diving Club’s most experienced members, with 2,000 jumps to his name. He says he has always dreamed of flying: “We have a saying: if you think flying is with

a plane, you think swimming is with a boat!” Explaining how sky diving links to his work at the College he says: “I studied turbulence for my PhD. I saw the comparison with sky diving immediately: I can understand what’s behind the flight.”

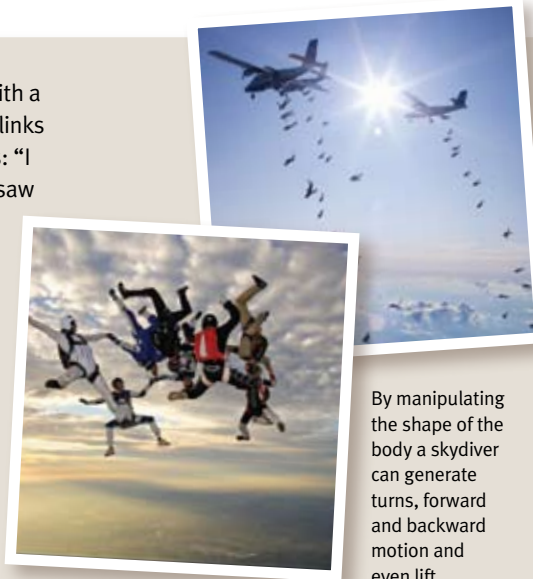
Anyone can have a go at sky diving and Imperial’s club is open to everyone from staff members to freshers. For those who take it up as a serious hobby, there are several disciplines to get involved in, such as free fly, which explores different positions and speeds, and the artistic and graceful free style, which resembles ballet in the sky.

Claudio won silver and bronze medals last year for freefly and freestyle in the UK nationals. This year he has been invited back to compete in the Sky Diving World Championship representing the UK.

Sky diving is something many people see as a once in a lifetime

experience. So what keeps Claudio coming back? He says: “When you start sky diving you realise it is so complex and you can do so much more. And it’s amazing, total freedom. You are on your own and flying, so you can see the sky. For me, it is like serenity: the sky is so peaceful.”

—EMILY GOVAN, INTERNATIONAL OFFICE



By manipulating the shape of the body a skydiver can generate turns, forward and backward motion and even lift.

### Highlights

- **Meeting times:** Every Tuesday plus trips every month to the sky diving drop zone in Weston on The Green (Bicester). Also periodic trips abroad.
- **Society size:** 45
- **Equipment:** Members can rent everything they need at the dropzone and it costs between £20–30 per jump which includes the kit.
- **Website:** [www.union.ic.ac.uk/rcc/parachute](http://www.union.ic.ac.uk/rcc/parachute)



Nature in portrait: This shot entitled 'Mer-de-Glace' was taken by Research Postgraduate Bharat Lad (Mechanical Engineering) at Mont Blanc, Chamonix.

## From Morocco to Mont Blanc

Photographs of people, places and animals from around the world taken by Imperial's Photo Club are to be displayed in an exhibit with the theme of *Nature and Portrait*. The Photo Club brings together amateur photographers from around the College, who meet once a month to share their work and discuss tips and methods. Commenting on this year's themes, club member Val Flisher (Outreach) said: "Nature and portrait were the most popular themes amongst club members; last year's exhibition covered urban photography as one of its themes and we wanted to do something a bit different." Explaining the international flavour of the exhibition Val said: "People in our club do seem to travel quite a lot, around the

UK and also the world. I'll be exhibiting work from my trip to Morocco this year, for instance." Val added that the club also wanted the exhibition's subject to be inclusive. She said: "We didn't want anything too structured, that might restrict creativity. Everyone took their photos for a reason, so it was up to each member to decide for themselves what should be included; we wanted that element of freedom to run through the exhibition."

—JEAN-PAUL JONES, COMMUNICATIONS

*The exhibition will be held in the Blyth Art Gallery, Level 5, Sherfield Building, South Kensington Campus from 12–20 November. To join the photo club or to find out more, email Val: v.flisher@imperial.ac.uk.*

## Fun and fundraising

Robert Young (ICT) reports on some charitable fundraising which unleashed some hidden culinary talents, required some Sherlock Holmes-like detective work, and ended in a chase around Hyde Park.



"Charitable fundraising is a great way to get to know your colleagues better, whilst having some fun, all in a good cause. This year, ICT raised a record breaking amount for Jeans for Genes, the national charity for children with genetic disorders. The organising team's approach was to encourage greater camaraderie and participation amongst work colleagues, and many areas responded creatively with different fund-raising ideas. Highlights included the cooking competition in which 23 savoury and sweet entries (one pictured above) were judged by over 40 tasting judges, with the recipes published in the 2009 ICT

*Master Chef Cookbook*. An innovative picture quiz was another fundraising event, requiring detective work to match mystery photographs with scattered locations around ICT, allowing people to get to know their work area better. There were many other events, but our efforts culminated in a sponsored five-kilometre run and power walk around Hyde Park on a lovely sunny lunchtime. It was inspiring to work with so many talented people in

Imperial. In all, a spectacular £648 was raised for Jeans for Genes."



Staff from ICT embark upon a five-kilometre run

### VOX POP

## What do you most enjoy about teaching?

Reporter speaks to three winners of the first Rector's Medals for Teaching, which reward staff who have shown exceptional commitment to supporting and developing students.



Teaching is made worthwhile by seeing students evolve over their time at Imperial into the next generation of confident professionals. The change is often dramatic and it is satisfying to play a part in this process. Engaging with students is best achieved by

teaching on a one-to-one basis. Just a little personal attention makes students much more comfortable in asking questions and admitting when they don't understand. It can be difficult to find the time, but you reap the rewards by making yourself approachable.

DR MATTHEW GENGE, SENIOR LECTURER IN EARTH AND PLANETARY SCIENCE (EARTH SCIENCE AND ENGINEERING)



The unexpected questions, the different personalities and ways of looking at things – all of this is enriching. Sometimes it is just having so many intelligent people in the same room – focusing on a given problem. Good communication creates engagement

and empathy, and it's great when students compete to volunteer questions. I also enjoy the endearing moments, like this morning I arrived to find one of my tutees in front of my office with some hand-made ice-cream and waffles which he wanted to share.

DR SILVESTRE PINHO, SENIOR LECTURER (AERONAUTICS)



Everything – it's incredibly rewarding. There are always new things to learn and new, increasingly hard questions from students. It can help formulate research ideas too. I love the theatre of teaching. As the way people communicate and learn continues to

evolve, teaching has become much more diverse. I'm particularly a fan of e-learning, as I believe that if it's used well it can greatly enhance more traditional methods and helps our teaching become more inclusive for the student population as a whole.

PROFESSOR DENIS WRIGHT, PROFESSOR OF PEST MANAGEMENT (LIFE SCIENCES)/DEAN OF STUDENTS

## obituaries



DR GWYNETH DAVEY

Dr Gwyneth Davey, Project Manager in the Department of Epidemiology and Public Health, died on 21 July 2009.

Her colleagues from the Division of Epidemiology, Public Health and Primary Care pay tribute:

“After studying at the University of Exeter and completing a PhD on

geographical aspects of health, Gwyneth worked at the Cancer Research UK Cancer Epidemiology Unit in Oxford in 1986. There she worked on studies of cancer risk in relation to nuclear installations and nitrate in drinking water, before taking on the management of the EPIC-Oxford prospective study of the long-term health of 60,000 people living throughout the UK.

Gwyneth worked on the EPIC-Oxford cohort until 2004, when she moved to work at the International Agency for Research on Cancer in Lyon, contributing her skills to the coordination of the whole EPIC-Europe collaboration of around 200 scientists in 10 European countries. She greatly enjoyed being at the centre of this collaborative endeavour, and continued in this post when the scientific coordination of the EPIC study transferred to Imperial in 2006.

Gwyneth made an immense contribution to the success of the EPIC study during the 20 years she was involved in the project. For those who worked with her, she was a fantastic colleague, always bright, positive and fun to work with.

Outside work Gwyneth had a very full life with her family, church, choir, flute and cello. She will be sadly missed.”

## Team building at Scotney Castle



Management Trainee James McSean on Building Projects' team building trip to Scotney Castle, Kent.

“Last month an 18-strong party of

staff from Building Projects descended on Scotney Castle for a couple of days of team-building, toiling in the sun on a National Trust Estate. Arriving on Thursday night, we were shown round our ‘rustic’ dorms and immediately taken on a sunset ramble around the fantastic castle grounds – working up an appetite for a sizeable barbecue.

After a hotly contested quiz it was a long night around the campfire, something which brought everyone together and set the tone for the team effort on Friday – clearing an overgrown and derelict orchard (definitely not weeding!) in the castle grounds. Everyone pulled together, with scratches and aches aplenty to show for the collective endeavour. After one more night, with everyone slightly wearier, it was back into the minibuses and home for Saturday lunchtime. Everyone’s thanks must go to the ultimate team man, Kim Winter (who started organising next year’s event on the Monday after), for organising what was a fantastic experience.”

long  
service

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

Staff featured celebrate anniversaries on 1 October. Data is supplied by HR and is correct at the time of going to press.

— ECE MENGUTURK, COMMUNICATIONS



## SPOTLIGHT

**Miranda Lubbock, Senior Administrator (HR) 30 years**

Following secretarial college, Miranda Lubbock initially joined Imperial as a temporary secretary for two weeks in 1975. She has since had a lengthy and varied career within the College, working first as a secretary then as a PA in the Department of Chemical Engineering and Chemical Technology, as well as for two Deputy Rectors and the Director of Finance. She currently works in HR as a Senior Administrator. Miranda says that the variety of jobs has been a great attraction of working at the College. A Chelsea girl born and bred, she says: “I remember walking past Imperial whilst attending school in Queen’s Gate – I never imagined that one day it would become such a huge part of my life!” Having taken her advanced driving test in 1986, Miranda is now a member of the Institute of Advanced Motorists. She has also been a member of the Royal College of Organists when it was based in Kensington. Miranda is an avid reader with an eclectic interest in fiction and is a keen supporter of Chelsea Football Club.

### 20 years

- Professor Abbas Edalat, Professor in Computer Science and Maths (Computing)
- Professor Paul French, Head of Photonics Group (Physics)
- Dr Robert Forsyth, Reader in Space Physics (Physics)
- Dr Eleni Hadjiconstantinou, Reader in Management Science (Business School)
- Dr David McPhail, Senior Lecturer (Materials)
- Dr Jonathan Mestel, Reader in Applied Mathematics (Mathematics)
- Dr Anna Nyburg, Coordinator of Evening Classes and Socrates/Erasmus (Humanities)
- Professor David Phillips, Senior Research Investigator (Chemistry)
- Dr Mehdi Vahdati, Principal Research Fellow (Mechanical Engineering)

### 30 years

- Professor Richard Kitney, Professor of BioMedical Systems Engineering (Bioengineering)
- Professor Sir Peter Knight, Senior Principal (College Headquarters)

## Swine flu-inspired art



Inspired by the illustration of the swine flu virus featured on the front cover of *Reporter* issue 209, Caroline Jaffe-Castle, receptionist for the Guy Scadding Building at NHLI and artist in her free time, has been creating pieces of art which she calls boomballs. She explains: “My art is often influenced by what I see in my everyday life and, with Imperial being at the forefront of the swine flu research, the virus image

has been inspirational. To make the boomballs I take polystyrene balls, thread sequins and beads on dress-making pins and in they go! In my eyes this turns the creepy looking virus that we see on the news into a ‘beautiful’ one!”



## Welcome new starters

Dr Yazan Abdallah, SORA  
 Mr Joel Abrahams, SORA  
 Dr Josefin Ahnstrom, Investigative Science  
 Mr Alex Almoudaris, SORA  
 Mr Barry Anderson, Grantham Institute  
 Mr Mark Atkinson, Development and Corporate Affairs  
 Dr Monica Barroso Silva da Cruz, Chemistry  
 Dr Shane Bergin, Chemistry  
 Dr Laurence Billingham, Earth Science and Engineering  
 Ms Kristina Blagoeva, Kennedy Institute  
 Dr Edo Boek, Chemical Engineering  
 Dr Thomas Bond, Civil and Environmental Engineering  
 Miss Victoria Booth, Chemistry  
 Dr Nancy Brewig, SORA  
 Mr Christopher Brown, Library Services  
 Dr Antoine Buchard, Chemistry  
 Dr Alessandra Carriero, Bioengineering  
 Mr Driss Choujaa, Computing  
 Mr Andre Chow, SORA  
 Mr Daniel Cohen, SORA  
 Mr Thomas Collins, NHLI  
 Mr David Damerell, Molecular Biosciences  
 Mr Adam De Smith, Medicine  
 Miss Shobana Dissanayake, Medicine  
 Mr Jake Dunning, NHLI  
 Ms Cecilia Flori, Physics  
 Dr Loic Fourel, Earth Science and Engineering  
 Mr Samuel Furse, Chemistry  
 Miss Isabel Garcia Perez, SORA  
 Dr David Gibeon, NHLI  
 Dr Matthew Gilbert, Materials  
 Mr Stuart Gormley, NHLI  
 Dr Susan Gotensparre, SORA  
 Dr Ioannis Gousias, Clinical Sciences  
 Dr Nadia Guerra, Cell and Molecular Biology  
 Dr Bronwen Herbert, SORA  
 Dr Shuxin Hou, Chemical Engineering  
 Mr Sehban Husain, Materials  
 Dr Bilal Iqbal, NHLI  
 Mr Slavomir Jasenec, Estates  
 Mr Matthew Jennions, Molecular Biosciences  
 Dr Paul Johnson, Mathematics  
 Dr Denis Kramer, Chemistry  
 Miss Yi Lu, Medicine

Mr Sui Mak, EEE  
 Mr Charles Mallo, Development and Corporate Affairs  
 Mrs Judith Marsh, NHLI  
 Mr David McBride, Molecular Biosciences  
 Dr Osama Naji, SORA  
 Ms Barbara Paracchini, Investigative Science  
 Dr Stephane Paulus, Medicine  
 Mr Chris Powell, EPHC  
 Mr Marc Pradas Gene, Chemical Engineering  
 Miss Lynda Rea, NHLI  
 Mrs Fiona Rose-Clarke, SORA  
 Miss Lucy Salmon, Natural Sciences  
 Mr Thomas Sponfeldner, Mechanical Engineering  
 Miss Lenka Sykora, Sport and Leisure Services  
 Mr Nicholas Symons, SORA  
 Miss Wing To, Kennedy Institute  
 Mr Rajagopal Vellingiri, Chemical Engineering  
 Dr Katherine Vernon, Medicine  
 Mr Chenguang Yang, Bioengineering  
 Mr Petr Yatsyshin, Chemical Engineering  
 Miss Zhengzi Yi, SORA  
 Dr Elham Zarrinpashneh, NHLI  
 Dr Tingting Zhu, Mechanical Engineering

## Farewell moving on

Dr Carlos Abellan de Andres, EPHC  
 Mr David Allen, Biology  
 Ms Jacqueline Ardley, EYEC  
 Dr Arun Bakshi, NHLI  
 Ms Ceri Ball, Investigative Science  
 Dr Matthieu Boulesteix, Biology  
 Ms Cliona Boyle, Investigative Science (6 years)  
 Ms Jana Carga, Investigative Science  
 Ms Sarah Christen, SORA  
 Dr Roberto Di Napoli, Educational Quality Office  
 Dr Anthony Dorling, Medicine (13 years)  
 Dr Daniel Finfer, Bioengineering  
 Dr Patricia Fitton, Medicine  
 Dr Paul French, Physics  
 Dr Jon Gudnason, EEE (6 years)  
 Mr Carl Hassett, Medicine  
 Ms Dolores Iorizzo, Computing  
 Mrs Carol Jovanovic, Commercial Services (15 years)\*

Miss Jennifer Kennedy, Library Services  
 Dr Jerome Lafont, Kennedy Institute  
 Dr David Lara, Physics  
 Dr Phang Lim, NHLI  
 Dr Alexandra Lo, Kennedy Institute



**Professor Aldo Boccaccini** came to Imperial in August 2000, having studied

previously in Germany, California and his native Argentina. In the Department of Materials he has specialised in tissue engineering and has recently been working on bone and cardiac regeneration using bioactive glasses. He leaves to chair a new institute of biomaterials at the University of Erlangen-Nuremberg, Germany, and remains a visiting professor at Imperial.

Dr Yajie Ma, Computing  
 Dr Andrew Milestone, Medicine  
 Dr Nikica Mise, Medicine  
 Dr Mark O'Neill, NHLI  
 Dr Yi Peng, Chemical Engineering  
 Miss Roberta Perelli, Kennedy Institute  
 Dr Kin Shiu, Medicine  
 Dr Louise Slater, NHLI  
 Dr Simon Thompson, Bioengineering  
 Mr Jamie Wright, NHLI

## retirements

Dr Jane Cox, Clinical Sciences (23 years)  
 Mr Aiden Donnelly, Security Services (6 years)  
 Professor Tom Sensky, Neurosciences and Mental Health (20 years)

This data is supplied by HR and covers the period 9–24 October. 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.

## CORRECTION

Reporter would like to apologise for the inaccuracies in the list of retirements published in issue 209 on 15 October. The correct details of staff who retired from the College in the period 13 September–3 October are shown below.

## retirements

Dr John Allwright, EEE (42 years)  
 Professor Colin Atkinson FRS, Mathematics (38 years)\*  
 Dr Chris Barnett, Mathematics (26 years)  
 Mrs Sue Brookes, Computing (19 years)  
 Mrs Eve Burgess, Medicine (11 years)  
 Mr Jose Diaz Couto, Estates, (13 years)  
 Mr Aiden Donnelly, Security Services (6 years)  
 Mrs Esther England, Medicine (36 years)  
 Mr David Gentry, Physics, (43 years)  
 Mr Robert Gussetti, Estates (33 years)  
 Professor Andrew Holmes FRS, Chemistry (5 years)\*  
 Professor Christopher Isham, Physics (33 years)\*  
 Mr Frank Kriwaczek, Computing (26 years)  
 Professor David Lloyd Smith, Educational Quality Office (38 years)\*  
 Professor Gareth Parry FEng, Physics, (12 years)\*  
 Mrs Jan Preece, SORA, (17 years)  
 Ms Beverley Ricketts, Estates (13 years)  
 Mr Mick Rogers, Molecular Biosciences (48 years)  
 Mr Dick Sheppard, Chemistry (40 years)  
 Professor Rodney Sobey, Civil and Environmental Engineering (5 years)\*  
 Mrs Mary Symons Eur Ing CEng MBCS, ICT (30 years)  
 Mrs Roma van Dam, Business School (10 years)  
 Professor John Wood, International Office\*

✉ 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.

## Silwood fun day

Dr Emma Green, Research Associate (Biology), reports on Silwood Park's second fun day, held on 11 October and themed around climate change and exploring nature.

"Activities, led by scientists and students, included calculating carbon footprints, exploring colour with chromatography, making molecules out of marshmallows, looking at the world through a microscope, live demonstrations of how chemicals make light and

many more. As Silwood is an active science research centre, there was an opportunity for the public to take a tour of some of our experimental facilities, plus an explorer was on hand to give walks around Silwood pointing out exciting things in the natural world. By introducing members of the public to the questions and experimental approaches underpinning research on pollution impacts, we hope that people of all ages will be excited by the idea of environmental research and be inspired to take part in the full range of activities run by the Open Air Laboratories."



Introducing children to the natural world – one of the activities at Silwood's fun day.



11 NOVEMBER ▶ INAUGURAL LECTURE

## The biomechanics of glaucoma: engineering meets ophthalmology

Professor Ross Ethier (Bioengineering) will review the pathophysiology of glaucoma. Glaucoma is the name given to a group of eye

conditions that affect vision. Professor Ethier will describe how he has tried to unravel the biomechanics of glaucoma and how this has revealed a previously unknown role for the sclera (the white part of the eye) in the condition. He will also reveal how his interdisciplinary interactions with colleagues may help identify novel risk factors for development of glaucoma.



30 NOVEMBER ▶ SPECIAL LECTURE

## Molecular cooking is cooking: Molecular gastronomy is a scientific activity

Hervé This, one of the world's experts on the chemistry of cooking and inspiration to

Heston Blumenthal, will present this special demonstration lecture. In 1988, Hervé This co-founded the scientific discipline of Molecular Gastronomy to refocus attention on the chemical processes involved with cooking. Join the father of molecular gastronomy as he launches his new book *The Science of the Oven*, and learn more about his philosophy and the science behind his food.

11 NOVEMBER ▶ LECTURE

### Multimodal and adaptive behaviour in insects and robots

Barbara Webb, University of Edinburgh

11 NOVEMBER ▶ LECTURE

### Harry Elliot: His cosmic odyssey and legacy

A half-day symposium in memory of Harry Elliot CBE, FRS

11 NOVEMBER ▶ INAUGURAL LECTURE

### The biomechanics of glaucoma: engineering meets ophthalmology

Professor Ross Ethier, Head of the Department of Bioengineering

13–20 NOVEMBER ▶ EXHIBITION

### Nature and portrait

Second Photo Club exhibition

18 NOVEMBER ▶ INAUGURAL LECTURE

### The fluid mechanics of turbines to turbinate

Professor Denis J. Doorly, Professor of Fluid Mechanics (Aeronautics)

25 NOVEMBER ▶ INAUGURAL LECTURE

### On the edge of quantum reality: probing molecules with intense laser fields

Professor Leszek Frasinski, Professor of Atomic and Molecular Physics (Physics)

26 NOVEMBER ▶ INAUGURAL LECTURE

### Unintended consequences: why cheap mobile calls and well-meaning regulators might make us pay more

Professor Tommaso Valletti, Professor of Economics, Imperial College Business School

30 NOVEMBER ▶ SPECIAL LECTURE

### Molecular cooking is cooking: Molecular gastronomy is a scientific activity

French chemist and cook, Hervé This

## take note

### Do you manage a College website?

The Content Forum is a new initiative which has been developed to help College website editors to meet the needs of Imperial's audiences. The new Content Forum website has a toolkit of resources including a blog, workshops, training, FAQs and best practice tips. If you manage a College website, get involved in the community of over 300 site editors to share ideas, ask questions and help develop College web strategy.

To find out more and to complete the site editor survey visit: [www.imperial.ac.uk/webguide/contentforum](http://www.imperial.ac.uk/webguide/contentforum)



## VOLUNTEERING

### Card aid shop volunteer

Project ID: 2274  
Organisation: Charities Advisory Trust  
Dates: Until 23 December 2009  
Times: At least three hours a week until Christmas  
Location: Kensington Library, Phillimore Walk, London W8 7RX (nearest tube High St Kensington)

Volunteers are needed to help in a new Card Aid shop in Kensington Library. Card Aid shops stock cards from over 150 charities, and ensure that at least one third of the price of every card goes direct to the appropriate charity. Volunteers will serve customers, label stock, help out with signage and help the shop manager where required. It is a good way to learn about a wide range of charitable organisations, gain customer relations experience as well as improve your communication and PR skills.

#### For more information

To take part in a scheme or to hear more about volunteering in general, contact Petronela Sasurova

☎ 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)

## PHOTO EXPO

In October, the Early Years Education Centre (EYEC) celebrated Diwali – the festival of light. Children of all ages got the chance to help cook onion bhajis, try out some Indian dancing and light oil lamps known as 'divas' in the EYEC garden.



## Stay in the loop

✉ Visit [www.imperial.ac.uk/events](http://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](mailto:events@imperial.ac.uk)

