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2008 has been a busy year for Imperial and what you read in the pages of Reporter is just a small snapshot of the activity which goes on across all campuses and in every department of the College. Since January we have attracted around 1,100 research awards, helped 3,731 students to graduate, held 88 major events and welcomed 1,561 new members of staff.

This month we’ll all get the chance to put down our books, turn off our computers and take a well deserved rest. To find out what some staff members are doing over the winter break, see page 13.

Enjoy your time off and see you in the New Year for the 200th issue of Reporter.

**Eastside topping out**

On 20 November, College staff, students and guests joined project contractors on the roof of the Eastside residential halls in South Kensington for a topping out ceremony, marking the point in building work when the structure reaches its full height.

Rector Sir Roy Anderson thanked everyone involved in the project for their hard work, and Chris Scott, Director of Projects at contractor Laing O’Rourke (pictured right), presented the Rector with a small glass memento of the day.

The Rector also buried a sprig from a yew tree in concrete, which according to ancient tradition should bring luck to the building and ward off evil spirits.

Marking this milestone in developing new student accommodation had particular significance for both the Rector and Mr Scott—talking earlier they discovered that as students they had both been based in Falmouth Hall in what is now Southside.

The new development replaces Linstead Hall, built in the 1960s, and will provide three student halls housing 441 students, along with two common rooms, a café bar and a convenience store. David Lloyd Smith, the Dean of Students, said: “It looks like a smashing building, much more in keeping with the architecture here and very appropriate for meeting both students’ and commercial needs.”

—JOHN-PAUL JONES, COMMUNICATIONS

**NEWS update**

Engaging the public with the natural world

A national project to involve the public in the first ever community-led study of the natural world was launched at the Natural History Museum on 25 November.

Directed by Dr Linda Davies from the Centre for Environmental Policy, the OPAL (Open Air Laboratories) project will pioneer a wide range of events and initiatives across England that will give people the tools and support to identify, monitor and record plants and wildlife in their local area.

Scientists from across the College are involved in OPAL. Biologists at the Silwood Park Campus, led by Dr Sally Power, are running the national OPAL Air and Climate Change Impacts projects. These two projects will focus on understanding the impact of air pollution on plants and how droughts, changing rainfall patterns and biodiversity loss affect the ability of ecosystems to carry out important processes.

Researchers from the Centre for Environmental Policy, led by Dr Nick Voulvoulis and community scientist Dr Martin Head, are running the OPAL soil centre which will focus on soil quality and the biodiversity of earthworms.

Professor Kalf Toumi from the Department of Physics and Dr Sally Power are running the OPAL London and OPAL South East regional projects respectively. These are two of nine projects being run by universities across the country which will focus on local environmental issues.

Professor Toumi’s OPAL London project aims to increase under standing of climate change and weather in London. Dr Power’s OPAL South East project will invite local communities to investigate the effects of traffic emissions on urban green spaces and nature conservation sites alongside major roads.

OPAL Director Dr Linda Davies said: “OPAL will encourage more people to spend more of their time outside exploring, studying and enjoying their local environments.”

To watch a video on the OPAL project, see: www3.imperial.ac.uk/news/opal
New process for clinical medical trials

From January, anyone planning a clinical trial of investigational medicinal products such as drugs or therapies will need to include costs in their grant applications for a new online system called InForm.

The new system allows:
- researchers to track their patients at each stage of the trial in real time
- both the College and the research team to oversee the trial activity
- the appropriate people to be informed of any event that requires urgent reporting or tracking, thanks to an auto alert function
- a full audit trail
- the investigator and sponsors to closely monitor participant progress and safety
- reports to be automatically generated
- the trials to be archived on the College system

All trials will be assessed by the Clinical Research Governance Office and a fee will be decided upon, depending on the complexity of the trials. From January funding applications for clinical trials of medicinal products should include a justification for the inclusion of the costs for InForm.

Up until now researchers have developed their own systems to log information which has been both time consuming and requires more staff to manage the administrative side of clinical trials. The new standardised data capture system will give the College access to information to ensure the trials are legally compliant and will also reduce the risk of having incomplete trial data.

The Clinical Research Governance Office is planning road shows to provide more information about InForm at each of the Campuses. Please check the CRGO website for updates.

If you are planning to begin a clinical trial from January onwards email the Clinical Research Governance Office before you apply for funding: c.beckford@imperial.ac.uk or for more information visit: www.imperial.ac.uk/clinicalresearchgovernanceoffice

£18 million for next generation of researchers

Five new Centres for Doctoral Training are to be set up at Imperial, thanks to a funding injection of over £18 million announced on 5 December.

The funding is part of a larger £250 million award from the Engineering and Physical Sciences Research Council (EPSRC) announced by Lord Drayson, the Minister of State for Science and Innovation, which will fund 44 Centres for Doctoral Training (CDTs) and create over 2,000 PhD studentships at universities across the UK over five years.

Unlike traditional PhD programmes, CDTs enable PhD students to work with, and learn from, scientists across a variety of fields. They aim to produce a new generation of researchers with the interdisciplinary skills and expertise to help them tackle some of the major challenges facing the world today.

Three of Imperial’s new CDTs will be led by the Department of Physics and will focus on plastic electronic materials, materials theory and simulation, and controlled quantum dynamics.

The two additional Centres, designated as industrial doctorate training centres, will be led by other institutions, in collaboration with the Department of Civil and Environmental Engineering and the Department of Materials.

—Danielle Reeves, Communications

www.imperial.ac.uk/news/5centres

in brief

- Revised Imperial College fire safety policy
  The Imperial College Fire Team is launching a revised fire safety policy. Central to the revised arrangements is the need to have a Fire Safety Coordinator for each building or department, supported by Fire Wardens. Help, advice, support and training course are available from the Fire Team. Look out for the new Imperial College Fire Team Intranet site early in 2009. For more information contact: p.p.seal@imperial.ac.uk

- Guardian Student Media Awards success
  Felix, Imperial’s student newspaper, won the Student Newspaper of the Year Award at this year’s Guardian Student Media Awards on 26 November. Last year’s editor, Tom Roberts, received the title Student Journalist of the Year. I. Science, the student science publication, was a runner up in the Student Magazine of the Year category and Felix’s Angry Geek was a runner up for Student Columnist of the Year.

- Visit from top Taiwanese institutions
  A group of 10 Taiwanese university presidents visited Imperial on 2 December to meet academics, build stronger research links with the College and discuss possible future collaborations.
  The visit was part of a tour of five of the UK’s universities including the University of Oxford, the University of Cambridge, UCL and King’s College London.

- Outstanding win for Hoskins
  Professor Sir Brian Hoskins, Director of the Grantham Institute for Climate Change, has been awarded the 2008 Oceanic and Atmospheric Research Outstanding Scientific Paper Award by the US Office of Oceanic and Atmospheric Research. Professor Hoskins was nominated for a report which contributed to work undertaken by the Intergovernmental Panel on Climate Change.

www3.imperial.ac.uk/news/5centres
news update

awards and honours

Sir Peter presented with Ives Medal
Professor Sir Peter Knight, Imperial’s Senior Principal, received the Ives Medal from the Optical Society of America (OSA) at the OSA’s annual meeting in New York in October. The medal recognises overall distinction in the optics field and is the highest award given by the OSA. Sir Peter’s research expertise focuses on theoretical quantum optics, strong field physics and quantum information science.

Dr Ying to speak on bionanotechnology
Dr Liming Ying (NHLI) has been selected as a speaker at the Biochemical Society conference Bionanotechnology II: from biomolecular assembly to applications, in January 2009. Nanotechnology has been widely touted as the basis of ‘the next industrial revolution’. A particular aspect of nanotechnology is its interface with the biological sciences, which has been dubbed ‘bionanotechnology’. This emerging discipline draws on biological inspiration and provides new tools to investigate biological systems with unprecedented resolution and input. www.biochemistry.org/meetings/programme.cfm?Meeting_No=SA093

Professor Schneider wins ‘Dragons’ Den’ medical award
Professor Michael Schneider (NHLI) has won the Translational Research Innovation Award for Cardiology to help turn his research into a treatment for heart disease patients. The award is one of the Medical Futures Awards, which have been dubbed the medical equivalent of Dragons’ Den, after the BBC programme in which would-be entrepreneurs pitch ideas to a panel of judges. The award will help Professor Schneider harness the regenerative power of heart progenitor cells and bring the treatment to clinical trials.

Imperial volunteers recognised
On 2 December Nur Syahidah Sahrom (one of Imperial’s 2008 biochemistry graduates) received a Student Volunteering Award from the Higher Education Academy for a homework and tutoring volunteering project she was involved in, organised by the Imperial Volunteer Centre. Helen Kefall (pictured), a Contracts Administrator in the Department of Engineering, was also shortlisted for the Staff Volunteering Awards for her work with London-based charity KEEN (Kids Enjoy Exercise Now), delivering sports and recreational activities for disabled children.

Academic staff time survey 2009

From January, academic staff across Imperial will be asked to participate in the 2009 TOAST (The Original Academic Staff Time) survey.

Managed by the Planning Division, this is an online survey of academic staff time which the College uses to meet the government requirement for all universities to establish the costs of research, teaching, and ‘other’ activities.

The survey takes place every three years and all professors, readers, senior lecturers and lecturers in academic departments and divisions will be asked to take part.

Each participant will report on his or her activities for three randomly selected non-adjacent weeks during 2009 by completing a 24-hour diary, with each 30-minute slot to be allocated to an activity from a given list. An email will be sent to staff shortly before each survey week with instructions on how to access and complete the survey. The software is the same as for the last survey in 2005-06.

Survey returns are anonymous, and will be used to inform the College’s costs under fEC (full economic costing) and therefore support the recovery of the cost of our activities only.

Michelle Coupland, Director of Planning, explained:

“It is critical that academics participate when they are asked to do so as this will serve to ensure that the Government accepts our data as robust.”

To find out more see www.imperial.ac.uk/planning/toast

Please send any queries about TOAST to: toast@imperial.ac.uk

Launch of Customer Service Academy

Providing world class customer service is the aim behind the Customer Service Academy launched this month at the College.

The Academy will focus on raising standards and providing excellent service to Imperial’s 13,000 students and 6,000 staff, as well as to partners, neighbours and visitors. It also aims to raise awareness of the importance of meeting the needs and expectations of the College’s diverse customers.

Twenty delegates from the Business School, Registry, Catering, Finance and ICT are involved in the first Customer Service Academy project which will run throughout 2009. In their inaugural task at the launch event, teams were sent out to visit London landmarks and tourist attractions to assess the service they received.

Future tasks will include assessing customer expectations and considering the steps required to meet or exceed these. The group will also analyse levels of customer service within the education sector and other international organisations through conducting surveys and acting as ‘mystery shoppers’. They will use their comparisons to make improvements at the College.

The manager of the newly established Academy, Steve Rathborn (Learning and Development Centre) explained its purpose:

“The Academy will provide opportunities for teams representing service departments across the College to explore the focus and quality of what they provide and suggest ways of improving this on a continuous basis.”

—NAOMI WESTON, COMMUNICATIONS

For more information about the Learning and Development Centre please visit: www.imperial.ac.uk/staffdevelopment
media mentions

—NAOMI WESTON, COMMUNICATIONS

THE GUARDIAN • 1 December

Spin-out companies to benefit from city experts
Spin-out companies which are set up by universities to find commercial applications for research are expected to increasingly recruit city experts to help develop the business, reported The Guardian this month. Russ Cummings, Chief Investment Officer of Imperial Innovations, told the paper that he now receives triple the number of CVs he did a year ago. “I’m getting up to 10 CVs a week and more personal recommendations compared with one or two six months to a year ago. Part of that is down to the recession,” he said.

FINANCIAL TIMES • 3 December 2008

European business schools comment on the economic crisis
The past decade has seen a proliferation of business schools in Europe, reported the Financial Times earlier in December, but it is not clear whether they can all survive the economic downturn. Professor David Begg, Principal of Imperial’s Business School, answered questions about educational strategy, restructuring of Master’s degrees and how business schools equip students with key skills. He told the paper: “At Imperial College, we have prioritised the integration of our business school with the College’s knowledge expertise in science, technology and medicine. We believe that we can manage this future better by working more closely with those helping to invent it.”

THE DAILY TELEGRAPH • 5 December

Imperial team works on revolutionary stem cell surgery
Researchers at the College are developing a technique to rebuild a damaged heart using stem cell surgery. They have discovered a way to extract and grow in the laboratory muscle-building cells which can be used to patch up the heart using stem cell surgery. They have discovered a way to extract and grow from the bedside back to the bench and beyond.”

—CYMBOLEINE MOORE, IMPERIAL COLLEGE HEALTHCARE NHS TRUST PRESS OFFICE

Imperial College Healthcare

NEWS

New centre to improve hip replacement surgery
The London Implant Retrieval Centre (LIRC) opened last month at Charing Cross Hospital. The Centre’s core aim is to improve the outcomes of common hip replacement surgery by systematically evaluating the failure of metal-on-metal partial hip replacements. This is done by collecting failed implants and associated blood and tissue from hospitals across the country and performing a series of sophisticated tests to determine the underlying cause of inflammation and failure of the original procedure.

The tests include MRI and CT scanning, specially adapted for use with metal hip implants, to look at positioning, and investigations on blood and tissue samples to determine metal levels. Examination of some prostheses has shown wear at a rate 70 times greater than predicted.

Alister Hart, consultant orthopaedic surgeon at Imperial College Healthcare NHS Trust and senior lecturer at Imperial, is the principal investigator at the Centre, which he co-founded with John Skinner, consultant orthopaedic surgeon at the Royal National Orthopaedic Hospital.

He said: “Metal-on-metal hip replacements are becoming increasingly common, especially for young people who want to stay active. While most are successful, a substantial number have needed to be revised after patients experience severe yet seemingly unexplained pain.”

“What this Centre aims to do is to bring clinicians, industry and basic scientists together to discover exactly why this is happening by taking research from the bedside back to the bench and beyond.”

—CYMBOLEINE MOORE, IMPERIAL COLLEGE HEALTHCARE NHS TRUST PRESS OFFICE

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www.imperial.ac.uk/reporter
How ancient Earth escaped deadly deep freeze

The planet’s present day greenhouse scourge, carbon dioxide, may have played a vital role in helping ancient Earth escape from complete glaciation, say scientists.

In their review for Nature Geoscience (30 November), UK scientists claimed that the Earth never froze over completely during the Cryogenian Period, about 840 to 635 million years ago. This is contrary to the ‘snowball Earth’ hypothesis, which envisions a fully frozen Earth locked in ice for many millions of years as a result of a runaway chain reaction causing the planet to cool.

How the Earth escaped from a complete freeze is uncertain, but the authors of the study point to recent research at the University of Toronto. This speculates that the advancing ice was stalled by the interaction of the physical climate system and the carbon cycle of the ocean, with carbon dioxide playing a key role in insulating the planet.

The review’s lead author, Professor Phillip Allen (Earth Science and Engineering), says that something must have kept the planet’s equatorial oceans from freezing over: “In the climate change game, carbon dioxide can be both saint and sinner. These days we are so concerned about global warming and the harm that carbon dioxide is doing to our planet. However, approximately 600 million years ago, this greenhouse gas probably saved ancient Earth and its basic life forms from an icy extinction.”

Professor Allen hopes his review will prompt climate modellers to realign their thinking about the Cryogenian period, to reflect a warmer Earth at this time.

— Colin Smith, Communications

Red alert for tomatoes!

How a bacterium overcomes a tomato plant’s defences and causes disease, by sneakily disabling the plant’s intruder detection systems, was revealed in new research published in Current Biology on 4 December.

The study focuses on a pathogen which causes bacterial speck disease in tomato plants. This bacterial invasion causes black lesions on leaves and fruit. Severe infection can cause extensive and costly damage to tomato crops, and researchers believe that understanding more about how this microbe works could lead to new ways of tackling it, and other plant diseases, without the need for pesticides.

Scientists have found that the pathogen is very effective at attacking tomato plants because it deactivates and destroys receptors which normally alert the plant to the presence of a dangerous disease—in the same way that an intruder would deactivate the burglar alarm before gaining entry to a house.

Professor John Mansfield (Life Sciences), one of the authors of the paper, says: “Once the receptors have been taken out, the plant’s defences are ‘offline’ and the bacterium is able to spread rapidly, feeding on the plant without encountering any kind of resistance.”

Together with colleagues at the Max Planck Institute in Cologne and the Zurich-Basel Plant Science Centre, Professor Mansfield used an experimental model plant called Arabidopsis, which is also affected by the disease, to examine what happens at the molecular level when bacterial speck infects a plant.

The research at Imperial was funded by the UK Biotechnology and Biological Sciences Research Council.

— Danielle Reeves, Communications

New cell membrane research

Chemistry researchers at Imperial have been awarded £1.75 million to study various aspects of cell membrane structure and function, using analytical techniques from the physical sciences.

Understanding how cell membranes work is important because there is more to their role in the cell than merely providing a barrier between the contents of a cell and the outside world, and forming compartments within the cell. Professor John Seddon (Chemistry), the principal investigator, explains: “Cell membranes are highly active interfaces: for example, they control, activate and deactivate many vitally important cell functions, are involved in cell signalling, and are the binding sites for over 80 per cent of all commercially available drugs. We believe that physical interactions such as the elasticity of the membrane and its tendency for curvature are intimately involved in many of these processes. There is a subtle interplay between lipids and membrane proteins in controlling membrane structure and protein function.”

Cell membranes are made of two asymmetrical layers of lipid molecules. One of the objectives of the new project, funded by the Engineering and Physical Sciences Research Council (EPSRC), is to better understand the consequences of this lipid asymmetry. In addition, researchers aim to develop new methods for model membranes, which are also asymmetric.

The funding will also enable the research team to tackle other emerging areas in membrane biophysics including drug–membrane interactions and the mechanisms by which cells dynamically control the make-up of their membranes. An additional aim is to encourage closer collaborations between UK scientists working in membrane biophysics.

— Danielle Reeves, Communications
**Pinpointing zinc pollution**

A new way of pinpointing where zinc pollution in the atmosphere comes from could improve pollution monitoring and regulation, says research published in *Analytical Chemistry* in November.

Imperial researchers say their work is a major breakthrough as current methods for analysing zinc pollution only measure pollution in the atmosphere; they do not trace it back to its source. Their method will provide a new tool for policy makers and modellers and could inform and improve national and international pollution strategies.

At low levels, zinc is an essential mineral used by plants and animals. But at higher levels, zinc pollution is suspected of causing cardiovascular, reproductive, immune, and respiratory problems.

Researchers trialled their method on atmospheric samples collected in São Paulo, Brazil, working with researchers from the University of São Paulo.

Analysis of air samples suggested that a major source of zinc in the city’s atmosphere comes from cars and not from manufacturers as previously thought. The study’s co-author, Dr Dominik Weiss (Earth Science and Engineering), said: “We need to know where these sources of pollution are coming from because exposure to zinc pollution over a long period of time is a significant concern for the health of residents in big cities such as São Paulo or London.”

The new method analyses zinc isotopes and could be applied to tracing the sources of other metals such as cadmium, copper and thallium.

—Colin Smith, Communications

**New unit to tackle liver disease**

A £1 million clinical research facility dedicated to tackling liver disease, the fifth most common cause of death in the UK, has opened at Imperial.

The Robert Hesketh Hepatology Clinical Research Unit aims to provide care and develop new therapies to reverse rising liver disease death rates.

The unit will accommodate fifty researchers, doctors and nurses from the College and Imperial College Healthcare NHS Trust.

Patients will have the chance to take part in the unit’s research programmes, as well as clinical trials addressing the four main causes of liver disease—alcoholism, fatty liver disease and chronic hepatitis B and C, together with liver cell and bile duct cancers.

Unit researchers will examine why some people are genetically predisposed to alcoholism, which is responsible for 70 per cent of chronic liver disease. One of many clinical trials will investigate whether treating hepatitis C patients with warfarin after they have undergone a liver transplant, can reduce the scarring that occurs when hepatitis C recurs in the transplanted liver.

Professor Howard Thomas, the director of the new facility, said: “Tragically, patients can live with liver problems for several decades with no symptoms, not knowing that they are unwell until they reach the end stages of cirrhosis and liver cancer.”

—Laura Gallagher, Communications

**HIV film to tackle teacher discrimination**

Addressing the discrimination against HIV-positive teachers in Africa is a key aim of a new documentary and accompanying book by Imperial’s Partnership for Child Development, based in the Faculty of Medicine.

An estimated 122,000 teachers in sub-Saharan Africa are living with HIV, and most of them have not sought testing and do not know their status. Stigma inhibits teachers from being tested for HIV and many of those who know their status fear discrimination if they declare it, according to the Imperial team.

The new film and book, called *Courage and Hope: African Teachers Living Positively with HIV*, tell the stories of 14 HIV-positive teachers in sub-Saharan Africa. The teachers explain how they discovered their HIV status and discuss how it has affected their lives, including the impact on their relationships with their families, schools and communities.

Thousands of copies of the DVD and book will be distributed around the world following the launch at the 15th International Conference on AIDS and STIs in Senegal.

Copies will be supplied to teaching organisations so they can be used as part of teacher training programmes.

Dr Michael Beasley, Acting Director of the Partnership for Child Development, said: “Up to 60 per cent of public sector workers in Africa are teachers. They play an important part in society, acting as role models for adults as well as children. Because of this, teachers can be great at delivering a message to people and help reduce the stigma attached to HIV.

A strong and healthy teaching workforce is key to making this a successful endeavour.”

—Lucy Goodchild, Communications

www3.imperial.ac.uk/news/hivfilm
Innovative teaching

Earlier this month, around 200 members of Imperial staff with an interest in teaching and learning came together for the College’s first Education Day.

The event was developed by the Pro Rector for Education, Julia Buckingham, and the Centre for Educational Development (CED). A series of lectures took place throughout the afternoon, given by Imperial academics who spoke of different teaching methods they have adopted. Subjects included the use of simulation in teaching medicine and the EnVision programme which fosters initiatives in engineering education.

Speaking on the day, Rector Sir Roy Anderson noted that while Imperial is known for being a research intensive university, staff shouldn’t forget that the College is equally excellent at teaching. He said: “I hope we will continue to do more to stimulate creativity in education”.

Robert Winston (Professor of Science and Society at Imperial) also spoke about the challenges of communicating science. He discussed the relationship between scientists and the media and how this can be both useful in order to get messages out to the public as well as detrimental as a result of misleading headlines and inaccurate reporting. Using video clips from his BBC1 series Child of Our Time he showed how devices such as case studies can be useful tools for the effective communication of complicated scientific processes.

Posters

In addition to the lectures, over 30 posters were on display at the event illustrating many of the different initiatives departments and academics have introduced to their courses. Among the varying teaching methods presented was a clinical e-learning programme with e-lectures, video podcasts and online quizzes enabling students to identify gaps in their knowledge.

Four prizes were given out by Professor Buckingham to the researchers who produced the best posters to reward them for their innovative ideas.

Winners were as follows:

• John Conway and Philip Ramsden from the Faculty of Natural Sciences and Bang Nong and Tina Rowe from the Faculty of Engineering for the 2008 online version of Metric; a tool initially designed to support the transition from A level to undergraduate level maths which is now also being used by students in Materials and Physics.
• Jane Saffell and Emma Salter from the Faculty of Natural Sciences for their poster entitled Evaluation of different research-based modules in biochemistry and their influence on students’ perceptions of bioscience research.
• Pramudith Sirimanna, Sonal Arora, Rajesh Aggarwal, Nick Sevdalis, Alice Moran, Roger Kneebone and Lord Darzi, all from the Faculty of Medicine, for their poster entitled Mental practice enhances surgical performance in novice laparoscopic surgeons—a randomised controlled study.
• Elaine Walsh, from the Graduate Schools, for her poster entitled Cold microclimates and cultural mishaps: the perils of PhD life for overseas students.

“The aim of the event was to put teaching and learning in the spotlight and to bring people together to share new ideas and best practice.”

– Roberto Di Napoli, Senior Lecturer, CED
Teaching Awards
Demonstrating that there is commitment across the College to using innovative methods to inspire students, in his speech on Education Day, the Rector also highlighted the 2008 Teaching Excellence Awards presented on 24 November. He said: “On Monday I was privileged to present 14 awards for excellence in teaching to academics from all of the College’s faculties. It was wonderful to highlight the inventiveness and dedication of those involved in learning and teaching. The awards clearly illustrated the link between excellence in teaching and excellence in research. Students here thrive in a challenging, research-driven environment.”

The winners of the Teaching Excellence Awards were:
• Mitch Blair, Medicine
• Richard Dashwood, Materials
• Helen Dowker, Physics
• Leroy Gardner, Civil and Environmental Engineering
• Kate Hardy, SORA
• Klaus Hellgardt, Chemical Engineering and Chemical Technology
• Roger Kneebone, SORA
• Geoffrey Smith, Investigative Science
• John Tippins, Life Sciences
• Dimitri Vvedensky, Physics
• Dominic Wells, Neurosciences and Mental Health

Three of the award winners were also named Imperial’s 2008 Teaching Fellows. They were:
• Steve Cook, Life Sciences
• Karim Meenan, Investigative Science
• Lynda White, Mathematics

—EMILY ROSS AND NAOMI WESTON, COMMUNICATIONS

Interview with Pro Rector for Education Julia Buckingham about Education Day

Why are teaching and learning so important for Imperial?
We have an incredibly important role in educating the next generation. Great teaching and great research go hand-in-hand. I suspect that if any of our academics were asked what inspired them to become scientists, most of them would pinpoint a teacher who enthused them and drew them into their area of expertise. Of course, many of our students will not pursue careers in science but, whatever they choose to do, they will have had the excitement of learning about cutting edge science and being taught by some of the world’s leading scientists—and a research-led education is something that stays with you for life, not just for Christmas!

Who inspired you as a student?
That is difficult, there were quite a few, but if I had to select just one, it would be my tutor in Sheffield, Iain Chester-Jones. He was an amazing scientist and teacher—I always remember him telling me about his first ‘big discovery’ and how excited he was about it; I found that very inspirational. His tutorials were a bit chaotic sometimes but were always challenging and fun—above all they opened up a whole new field of biology for me and had a very big influence on my future career.

Why did you decide to hold Education Day?
There are lots of opportunities to discuss education within the various College committees—for example, I chair the College’s Strategic Education Committee which is responsible for developing our educational strategy. However there is no forum outside the committee structure for academics and others who work with students to discuss teaching and related issues with colleagues from other disciplines in the way there is for research. I thought a symposium would provide this platform.

What were the aims of the day?
To discuss strategic issues and innovative approaches to teaching. We started with strategic issues—how to select the best students, and the importance of communicating science effectively to the public. Then we heard about some of the challenges faced by different disciplines—for example teaching clinical skills to medical students and physics to first year undergraduates. This was an opportunity to learn from each other and to share best practice.

What is the value of innovative approaches to teaching?
There is no doubt that students’ approaches to learning have changed over the years. We too must move with the times, be open to testing and evaluating new methodologies and taking advantage of new technologies. I don’t think that e-learning will ever be a substitute for face-to-face teaching but it is a very powerful tool and has enormous potential for further development.

What was the purpose of the poster presentations?
We felt it was particularly important to encourage informal discussions during the coffee breaks, and the posters, created by staff who had been awarded teaching grants, provided a fantastic focus for discussion and debate. On the day the atmosphere around the posters was delightful—the noise levels reflected the enthusiasm.

Is there going to be another Education Day?
Absolutely! We want it to become an annual event and from the feedback we have had from across the College and the Rector, there is a lot of support for it.

—EMILY ROSS, COMMUNICATIONS
mini profile

Professor Martin Plenio

Professor Martin Plenio from the Department of Physics

Professor Plenio specialises in quantum physics—the science of the very small.

So how did you get into science? My family was always interested in science so it was a natural direction for me. At first I couldn’t decide between mathematics and physics so I studied both, but I enjoyed the maths that you need in physics more than pure maths itself so eventually I ended up in theoretical physics, as it was the best of both worlds.

What is quantum physics? Quantum physics is a theory which explains things on a very small scale. Nowadays it is becoming increasingly important because the structures on computer chips inside our iPods, mobiles and laptops are getting smaller and smaller and some day soon they’ll be so tiny that we’ll need to use the rules of quantum physics to build them and make them work.

What do you enjoy most about your work? Finding out how things work, and making calculations to prove ideas. The pity is that as a professor you have less and less time for that. I like to give talks about science as well. I also have a fantastic group of postdocs and students and it is a pleasure to work with.

Who is your favourite scientist? Alive and working in my field, perhaps the theoretical/mathematical physicist Reinhard Werner. He did a lot of excellent work and is also a very honest and tough judge. So you may rest assured that he will tell you if your work is wrong or that it represents mere doodling in the margins of science.

—Danielle Reeves, Communications

Science

From scratch

Fuel cells

“In 1839 Sir William Grove, a Welsh scientist, first observed that if the ends of two strips of platinum were hung in an acidic solution and the other ends were exposed, one to a tube of hydrogen and the other to a tube of oxygen, when the ends of the platinum were connected together by a wire, a current would be produced. This discovery led to the invention of the fuel cell.

A fuel cell converts chemical energy directly into electrical energy through an electrochemical reaction, similar to the way a battery works. A battery will eventually run out of power because the chemicals inside the battery are used up. A fuel cell, however, can be constantly supplied with the fuel and oxygen needed to produce power, so will only stop producing power if the supply of fuel or oxygen runs out.

Hydrogen fuel cells are attracting attention from car manufacturers as they provide an environmentally friendly alternative to conventional engines because the only waste product from fuel cells is water.”

—Dr Laura Williams

Dr Williams is studying for a PGCE via Imperial’s INSPIRE scheme: www.imperial.ac.uk/inspire

‘Green’ electricity to help UK meet 2050 carbon emissions target

This month researchers from Imperial’s Grantham Institute for Climate Change and Energy Futures Lab embarked on a programme to develop new technologies which could help the UK dramatically cut its carbon emissions by 2050.

The programme aims to help the UK meet the goals set by the UK Committee on Climate Change in October 2008. These state that by 2050 the UK should reduce greenhouse gas emissions by at least 80 per cent compared to 1990 levels and in the same timeframe, global emissions would need to fall by at least 50 per cent.

One element of Imperial’s Planet 2050 programme is the Electric Futures project which will explore the use of low-carbon electricity to meet a large part of the UK’s energy needs, in particular to replace liquid fuels for ground transport and natural gas for heating buildings.

Professor Nigel Brandon, Director of Imperial’s Energy Futures Lab, commented: “A lot needs to be done over the next few decades to develop new ways of producing and supplying electricity, and to investigate how it could be used to replace the gas in our homes and petrol in our cars.

“At Imperial we have a large number of researchers working on technologies to provide solutions. Planet 2050 brings them together and, through Electric Futures and other projects, builds on their existing work to help achieve significant carbon reductions over the next 40 years.”

—Danielle Reeves, Communications
Ian Hackford

During the week Ian Hackford is the Divisional Safety Coordinator for the Division of Medicine and the Division of Epidemiology Public Health and Primary Care, but at the weekends he can be found with an SA80 assault rifle on his shoulder, dodging live bullets in simulated war scenes working as part of the Territorial Army.

What is your day job?
My role is to ensure the health, safety and welfare of 750 members of staff, students and visitors in the Divisions of Medicine and EPHPC, dealing with risks ranging from human pathogens to offsite work.

What is your key role in the TA and what attracted you to the organisation?
I’m a communications systems operator in 31 Signal Regiment 5 Squadron, the Queen’s Own Oxfordshire Hussars—we are trained both in infantry combat techniques and military communications. To me it’s a massive adventure—I love the outdoors, the teamwork, the exercise, and the camaraderie.

What are the benefits of having a regular job and being a member of the TA?
I can serve for six months in a year and live a ‘normal’ life for the rest of it—it’s the best of both worlds.

Does the uniform help you make the transition from your day job?
The TA (and the British Army as a whole) believes in old fashioned principles like selfless commitment, courage, integrity and team spirit. When I put on my uniform I feel like I’m part of something bigger, I stand taller, carry myself differently and I’m more conscious of my actions.

What skills are you able to take across to your day job?
Being in the TA trains you to be a team player and helps you to see the bigger picture in disputes. I’ve also gained managerial experience which can be directly translated into my everyday work.

Do you have any fears about being called up?
Personally I’m looking forward to it. I know it sounds like bravado but as a TA soldier you have to be happy to put your life on the line to keep the peace.
—Emily Ross, Communications

Dr Mark Richards

By day: Dr Mark Richards, Honorary Research Associate (Physics)
Mark graduated in chemistry at the University of Manchester before moving to Imperial to study physics in the Space and Atmospheric research group. His career at the College has drawn him away from the lab and into the more entrepreneurial side of applied sciences. One of his key roles today is working on technology transfer within the High Energy Physics research group.

By night: DJ Kemist
As a teenager, Mark started buying records and listening to music. This led him to experiment with turntables, and his DJ career started while he was a student. Friends from his home town nicknamed him ‘chemist’ but to differentiate himself from other students he began to play under the name of DJ Kemist. Today not only is he a DJ but he is also a co-founder of Xtremix Records, an independent record label based in Ladbroke Grove, west London.

Linking music with science
For Mark, science and music are reflections of his personal interests and both stem from his passion and from a need to fulfil both logical and creative sides of his personality. He maintains that the technical skills he developed as a scientist have actually enhanced his music career. In the lab he works on disentangling electromagnetic waves and analysing them, whereas as a DJ he recombines sound waves to create new and exciting mixes.

Music as a form of outreach
Dr Richards is also keen to encourage equal opportunities and is involved in Imperial as One, the College’s race equality advisory group. Through his work he attempts to break down prejudices and stereotypes. He says: “I am concerned that children from underprivileged backgrounds tend to lean towards arts and sports without realising that science can do a lot for them.” To break down these artificial divides, Mark is involved in a variety of outreach activities where he talks about the science of waves but then goes on to demonstrate how the same principles can apply to music production.
—Mico Tatalovic, MSc in Science Communication (Humanities)
Buddy for a day

This month volunteers from Imperial introduced a group of school children to the world of Imperial as part of a ‘buddy day’ organised by the Imperial Volunteer Centre in collaboration with IntoUniversity.

IntoUniversity is a charity which operates at centres across London and aims to address underachievement and social exclusion by offering out-of-school opportunities and mentoring schemes to children from disadvantaged backgrounds. Throughout the day the volunteers showed 12-14 year olds from Burlington Danes Academy, west London, around the South Kensington Campus, organised a treasure hunt, and assisted with a science workshop.

One of the volunteers was the Undergraduate Admissions Officer from the Faculty of Natural Sciences, Marcus Heneghan. In his job Marcus is involved in a lot of outreach activities for Life Sciences applicants, as well as students in their last year of GCSEs or first year of A levels. He says: “Being a ‘buddy’ helped me professionally as I could take this experience and apply it to how I organise my open days and taster days. It helped to inform me of what advice kids need before taking their A levels, especially if they want to follow a science career.” He adds: “It was great to see so many funny, articulate and clever children taking part in something they obviously really enjoyed”.

— Petronela Sasurova, Volunteering

Contact the Imperial Volunteer Centre to find out how volunteering can help you in your job: volunteering@imperial.ac.uk

Cross Culture

Cross Culture is an empty scrapbook for staff and students to fill with their local recipes, cultural traditions and experiences of living in other parts of the world.

A traditional Christmas in Poland

by Gosia Gayer (Grantham Institute for Climate Change)

“I come from Radom [100 kilometres south of Warsaw] in central Poland but have lived in the UK for many years. I joined Imperial as PA to the Pro Rector for Development and Corporate Affairs in 2002, moving to my current role as Administrator of the Grantham Institute last year.

Christmas in Poland is a very important religious festival and also a time for all the family to get together. This year, I won’t be going home, but hope to recreate a traditional Christmas with my Polish friends in London. Mixing English and Polish traditions is a lovely thing to do although it’s probably not so great for the waistline!”

To contribute to cross culture please send your ideas to reporter@imperial.ac.uk

Course review

MEd in University Learning and Teaching

Attendee: Dr Jane Saffell, Senior Lecturer, Division of Cell and Molecular Biology

What is the MEd in University Learning and Teaching?

It’s a new Master’s course designed by the Centre for Educational Development, available from this year to Imperial academics interested in learning and teaching, research and communication.

Can you describe the structure of the course?

The MEd is flexible and can be completed in up to four years. Within a framework of a few short taught modules, including one on education research methods, course members complete a literature dissertation on a topic of their choosing, and then an original education research project.

Why did you choose to go on it?

To enhance our reputation for teaching excellence we need to disseminate our innovative teaching and learning practices effectively in educational literature, which uses very different methodology and language from that we are used to in science and engineering.

What have you learnt so far?

Being on the course has reminded me what it is like to be a student! It is an important reminder of how hard it can be to navigate in a new discipline. I have also become aware of key theories, developments and controversies in learning and teaching.

Countdown to Christmas in Poland

“On 6 December children in Poland traditionally receive their presents from St Nicholas—usually something placed under their pillow while they sleep. Christmas Eve is the most important time in Polish Christmas celebrations. Everyone gathers together to decorate the Christmas tree with baubles as well as tasty treats like sweets and fruits. Our tree at home always had a star placed on top and the sight of the first night star in the sky traditionally marks the time that the Christmas feast begins. The feast includes 12 different dishes which vary according to the region you live in and can include anything from mushroom soup to dumplings stuffed with sauerkraut, pan-fried carp and poppy seed cake. Traditionally, we do not eat meat on that day and we always set an extra place so that the meal can be shared with an unexpected visitor—although I don’t remember anyone ever turning up when I was a child! After eating, we usually sing or listen to carols and exchange presents. At midnight, those of us who have enough energy attend midnight mass at our local church. Christmas Day is a religious holiday for us so we usually go to church—especially for children to see the nativity scene—and stay at home with our family. It is also a day when we can eat what we want, which means too many meats, sausages, cakes and sweets!”

To contribute to cross culture please send your ideas to reporter@imperial.ac.uk
Students stay up all night to raise scholarship funds

It’s 2.00 on a cold November Friday morning, and while their peers are snugged up in their beds, 12 Imperial students are in the middle of their shift, calling alumni in the USA as part of the biannual telethon campaign.

Running from 20 October to 11 December, the telethon offered alumni a chance to stay in touch with College life, and support the Annual Fund. Autumn 2008 was the first time that alumni in the USA have been contacted through the telethon and so far more than £26,000 has been raised for the fund’s projects. Areas of the College to benefit include the renovation of the Union building and the Student Opportunities Fund, which provides scholarships to gifted but financially disadvantaged students.

“By employing new software, we’ve been able to match students to alumni with similar interests much more closely,” said Heather Campbell (Office of Alumni and Development). Discussing the benefits of this new approach, she added: “Ensuring that they have interests or clubs and societies in common really improves the experience for alumni.”

Joe Rumer, a second year chemistry student, enjoyed his time as a student caller. He said: “It allows the College to stay in touch with alumni in a friendly way, as well as raising money from some of its greatest supporters!”

—Alasdair Glen (Alumni and Development)

Corrections and clarifications
In the article “Teaching science in Samar” on page 11 of the last issue, Kristina Östman’s name was misspelt.
celebrating long service

20 years
Carol-Anne Shaw • Assistant Divisional Administrator (NHLI)

John Grover, Buildings Manager (Estates)

John Grover started at Imperial in December 1988 as Stores Manager for the Department of Electrical and Electronic Engineering. He remembers: “It was great that I was hired just before Christmas, I had a party on the first day!” With the party season over Mr Grover applied himself to his job, and was soon promoted to Assistant Technical Services Manager, shortly followed by the manager role and Departmental Safety Officer. Two years ago Mr Grover moved into Facilities Management where he is responsible for maintenance and refurbishment projects. He explains what he enjoys about his current role: “I like watching old turn to new and delivering projects that really satisfy their users”. Outside of work one of Mr Grover’s passions is sailing his Southerly 28 yacht. Married for 25 years to Linda, he is also immensely proud of his daughter Catherine who is currently studying for a history degree at the University of East Anglia.

Shirley Line, Deputy Divisional Administrator (SORA)

Shirley Line joined the Charing Cross Medical School as Department Assistant 20 years ago, but her involvement with Imperial goes back to 1979, when she started as a Chemistry lab technician. She left for three years from 1985 till 1988, so her 20th anniversary is also her 26th year. Looking back on her time at Imperial and all the changes she has seen, Ms Line says: “I have never been terrified by change or a new challenge.” Ms Line remembers the merger of the medical schools with the College to create Imperial as we know it today. She says: “When the merger first happened, there was a culture of ‘them and us’, but now with an influx of fresh people that has all changed.” Ms Line believes the people she works with are so important to her job satisfaction, and says: “If I didn’t like the people and the job, I would not have lasted 20 years.”

Martin Trusler, Professor of Thermophysics (Chemical Engineering and Chemical Technology)

Professor Trusler joined Imperial in 1988 as Mobill Lecturer in the Department, with research interests in intermolecular forces and the physical properties of fluids. Over time his interests have focused increasingly on oil industry applications, especially the measurement of fluid properties under the harsh conditions of oil reservoirs. “Many experiments we currently perform cannot be done with commercially available equipment. We design and construct the apparatus necessary to measure precisely thermophysical properties and phase behaviour at 200 degrees Celsius and pressures of up to 2000 bar,” says Professor Trusler.

In 2001 he was appointed Professor of Thermophysics and Director of Resources, and became a member of the Executive Committee of his Department. In the latter role he has helped implement systems to collect high quality management data, enabling resources to be allocated fairly and future research income to be forecast.

Since January, Professor Trusler has also led a research collaboration in the area of chemical and biological engineering with King Abdullah University of Science and Technology (KAUST), a new University in Saudi Arabia.

30 years
Marion Brady • Business Systems Specialist (ICT)
Anna Hikel • Undergraduate Office Secretary (Civil and Environmental Engineering)
Stephen Woodrow • AV Technician (Faculty of Medicine)

Stoff featured celebrate anniversaries during the period of 13 November–19 December. Data is supplied by HR and is correct at the time of going to press.

Obituary notice: Professor Jeremy Jass

We were very sad to hear of the death of Professor Jeremy Jass on 30 November 2008. Professor Jass joined Imperial College as Professor of Gastrointestinal Pathology based at St Mark’s Hospital in January 2007 but unfortunately was taken seriously ill in October of that year. The Division of Surgery, Oncology, Reproductive Biology and Anaesthetics was delighted that it had succeeded in persuading him to return to the UK from Canada and he will be greatly missed both personally and professionally.

—Julia Anderson (Medicine)
Dear Editor,

A social event involving Imperial College Football Club is currently under investigation by both Imperial College Union and the club itself.

Unfortunately the event was spoiled by the actions of a small minority, which has now brought both the Club and Imperial College into disrepute. The Club and the Union are working together to ensure the guilty individuals are identified and suitably dealt with.

On hearing about the event, another Club official and I personally visited the affected parties to offer our sincerest apologies on behalf of the Club.

Further to this I would like to extend apologies to the wider Imperial community. I am deeply embarrassed by the behaviour of these members as well as the damage it will do to the reputation of the Club and College.

The new Club executive has recently been working hard to remove a previously negative culture which had been instilled in the Club. I am confident the Club will move forward and proudly represent Imperial as the majority of our members currently do.

James Skeen
Imperial College Football Club Captain 2008–09

World AIDS Day

To mark World AIDS Day on 1 December, Medsin Imperial, a student group interested in global health and economic inequality, ran a number of fundraising events including a sale of Krispy Kreme doughnuts, a chamber concert and a talk by Professor Jonathan Weber (Medicine), the founding editor of the journal AIDS, about the role of science in HIV prevention. To further raise awareness, a red ribbon, the symbol of World AIDS Day, was projected onto the Queen’s Tower on the South Kensington Campus.

—Stephanie Lewis, Fourth Year Medicine
what's on

17 DECEMBER 18.00
Carols by candlelight
A service of readings and carols with music by Imperial College Chamber Choir
Holy Trinity Church, Prince Consort Road
☑️ First come, first served

18 DECEMBER 16.30–17.30
IgH class switching, DNA breaks, translocations and cancer
Dr Frederick Alt, Howard Hughes Medical Institute
Committee on Immunology Seminar Series 2008
G6 Lecture Theatre, Sir Alexander Fleming Building
☑️ First come, first served

18 DECEMBER 17.30–18.30
Straight back to the septic infections of the Middle Ages: Almroth Wright and Alexander Fleming in the Great War
Kevin Brown, St Mary’s Archivist and Curator of the Alexander Fleming Museum
St Mary’s Campus Christmas Lecture
De Rothschild Lecture Theatre, 2nd Floor, Medical School Building, St Mary’s Campus
☑️ Registration in advance: g.e.lewis@imperial.ac.uk

14–30 JANUARY
Ghost Tank
Work by Royal College of Art students Nathan Barle, Robin Footitt and Andrew Larkin
Blyth Gallery, Level 5, Sherfield Building

15 JANUARY 13.00–13.45
Lunchtime concert
Abbracci Piano Quartet
Read Theatre, Level 5, Sherfield Building
☑️ First come, first served

21 JANUARY 18.00–22.00
Wind Power: the band of the Coldstream Guards lead Imperial Winds in concert
Benefit dinner and concert for student scholarships
Great Hall, Sherfield Building
☑️ Tickets to be purchased in advance: e.charles@imperial.ac.uk

22 JANUARY 13.00–13.45
Lunchtime concert
Charles Owen (piano)
Read Theatre, Level 5 Sherfield Building
☑️ First come, first served

Take note
SCR Refurbishment
The Senior Common Room (SCR) on the South Kensington Campus is being refurbished over the Christmas vacation period. As a result of the work, the SCR will be operating with reduced seating capacity from lunchtime on Friday 19 December until Monday 12 January. The Junior Common Room will be available throughout this time.

Wildlife events helpers
Project: Event helpers
Location: Greater London
Volunteers are needed to help at a range of RSPB events. The RSPB is the UK charity working to secure a healthy environment for birds and other wildlife. This is a great opportunity to get involved with the charity and develop new skills at the same time. Volunteers can give as much or as little time as they choose and select the events they want to help at. They will be required to chat to members of the public about the work of the RSPB, and encourage people to offer support, through membership, retail purchases, donations and volunteering. Training will be given, focused on people-engagement techniques, and volunteers will be briefed on the work of the RSPB before events.

For more information
To take part in a scheme or to hear more about volunteering in general, contact Petronela Sasurova on 020 7594 8141 or volunteering@imperial.ac.uk
For full details of over 250 volunteering opportunities visit: www.imperial.ac.uk/volunteering
Subscribe to the weekly newsletter by emailing volunteering@imperial.ac.uk