Building blocks

How new L Block at Hammersmith will put Imperial at the heart of research-led healthcare
Swine flu advice

Staff and students will have received messages advising them on preparedness for an outbreak of swine flu. It is now unlikely that there will be a major swine flu outbreak in the UK in the near future, but there remains a high probability of a major epidemic of swine flu occurring in the autumn. Staff and students should continue to follow key guidance to stay prepared:

- The College expects to continue operating as normal if a pandemic occurs.
- All members of the community are encouraged to follow the basic hygiene advice about covering coughs and sneezes and washing hands regularly.
- If you develop flu-like symptoms, please tell your manager, go home and seek medical advice from NHS Direct. Please note that at this stage, you are only likely to have caught the swine flu virus if you, or someone with whom you’ve had close contact, have recently been to a country where a significant number of cases have been confirmed, or if you have been in close contact with someone in the UK who has swine flu.

  - If you are diagnosed with suspected swine flu please inform your manager.
  - The restrictions on travel to Mexico have been lifted. There is currently no need to delay or cancel travel to countries where swine flu outbreaks are occurring.

In the 6 May staff briefing, Rector Sir Roy Anderson said: “While this is not a simple situation with a rapidly evolving global pattern, there is no need for alarm...When the flu pandemic reaches the UK we are likely to see higher than usual levels of absence due to sickness. There will also be the need to care for sick dependants. Our focus at Imperial is on planning to ensure that the College will continue to operate effectively with lower staff numbers, and I am confident that the services we all rely on will remain available.”

Centre stage for postgraduates

The Postgraduate Awards on 6 May saw over 1,600 students graduating over two ceremonies with higher degrees in science, engineering, medicine and business.

In addition the College awarded an Honorary Doctorate jointly to philanthropists Jeremy and Hannelore Grantham, whose Grantham Foundation, for the Protection of the Environment has funded research institutes on climate change at Imperial and LSE. Fellowships of Imperial were also awarded to figures who have made significant contributions to the life of Imperial: Sir Leszek Borysiewicz, now Chief Executive of the Medical Research Council and formerly Principal of the Faculty of Medicine, then Deputy Rector at Imperial; and Professor Tom Kibble, a noted theoretical physicist, who has worked at the College for over 50 years, serving as Head of the Department of Physics from 1983–91.

Congratulations graduands and guests, Rector Sir Roy Anderson said: “I find it inspiring to see this hall filled with people who have chosen to invest their time, effort and finances in science, technology and business, who have excelled as a result. I strongly believe that your investment is one that will bring significant reward. The benefits are long-term and far-reaching for individuals and for nations.”

The ceremonies also saw the presentation of Research Excellence Awards worth £150,000 each to two teams who demonstrated high academic achievement and carried out research with significant future potential.

This year’s winning teams were led by Professor Hugh Spikes, for work in the field of tribology, the science of friction and lubrication, and by Professors Daniel Davis and Paul French, for research developing imaging technologies that allow live cell and single molecule imaging at enhanced speed and resolution.

— NAOMI WESTON, COMMUNICATIONS

For more on the Postgraduate Awards Ceremonies see Inside Story, pages 12 and 13.

Jeremy and Hannelore Grantham claim their Honorary Doctorates.
Spotlight on Student welfare

Enhancing the student experience is high on Imperial’s agenda, said Dean of Students, Professor David Lloyd Smith, at the Student Welfare: Looking Forward event last month.

“This event aims to shine a beam of light on four aspects of student welfare. It also offers the opportunity to look forward, to talk openly about our aspirations for enhancing student support, and hear about the approaches taken by other universities,” he said.

The afternoon of discussion covered personal tutoring, the effects of dyslexia, the student counselling service and the role of hall wardens. Though National Student Survey (NSS) results generally reflect well on Imperial, students tend not to give such a high rating to the level of feedback they receive from academic staff.

Giving the students’ point of view, Hannah Theodorou, ICU Deputy President for Education and Welfare, said students need more guidance on the role of personal tutors, and suggested there should be a review of the training tutors receive.

Professor Julia Buckingham, Pro Rector (Education), said: “Taking time to review our student support services is very important, especially since needs and expectations evolve over time. Our immediate challenge is to improve the way we give feedback. The dedication of our staff to the welfare of our students was clear throughout this event and I have no doubt that the College will continue to provide an excellent all round experience.”

—NAOMI WESTON, COMMUNICATIONS

New student welfare initiatives at Hammersmith Campus

College Tutor
Dr Mick Jones, Clinical Sciences Centre, has been appointed College Tutor with responsibility for students at Hammersmith Campus. In performing his duties he will liaise closely with the other College Tutors on the South Kensington Campus.

Student Counsellor
Extending the student welfare provision at Hammersmith, a Student Counsellor visits the Campus weekly, and a Disability Advisor will also be joining the team.

Bill Gates comes to Imperial

The philanthropist and PC pioneer Bill Gates came to Imperial on 1 May to meet with 10 leading Imperial scientists, including Rector Sir Roy Anderson. In a three-hour meeting, the group discussed research in areas including modelling the HIV epidemic, preventing malaria infections and assessing different polio vaccines. The Bill and Melinda Gates Foundation has awarded grants to several Imperial research programmes, including major projects tackling neglected tropical diseases and HIV.

Latest league tables

Imperial has been ranked third overall in The Independent, Complete University Guide for 2009 behind Oxford and Cambridge and second in the table listing universities in the top 10 for their subjects. In The Guardian’s 2010 league table, Imperial came eighth overall; Oxford came top. For details of other league tables, visit: www.imperial.ac.uk/about/league_rankings.

Time survey

Since January, the 2009 TOAST (Academic Staff Time) survey has asked 1,187 academic staff to complete at least one of their three pre-assigned survey weeks, with a 74 per cent response rate. The results of this anonymous survey will be used to calculate rates for research grants and contracts applications. The Government requires a response rate of 80 per cent to consider the data robust.

For TOAST Information: www.imperial.ac.uk/planning/toast

Four new Fellows for Academy of Medical Sciences

Professors Neil Poulter, Michael Schneider, Marina Botto and Elio Riboli have all been newly elected as Fellows of the Academy of Medical Sciences.

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

Professor Marina Botto (Medicine) joined Imperial in 1995. She is currently head of the Rheumatology Section and Consultant Physician at the Hammersmith Campus.

Her research focuses on understanding the role of the complement system, an important component of the innate immune system, in health and disease. In particular she is looking at how complement deficiency causes the autoimmune disease systemic lupus erythematosus (SLE).

Professor Michael Schneider (NHLI) joined Imperial in 2007, as Head of Cardiovascular Science for the National Heart and Lung Institute, and became Head of the Division in January 2009.

In his work he investigates how rare cells known as cardiac progenitor cells, which can potentially regenerate heart muscle, may be able to repair damaged hearts.


Professor Elio Riboli (Epidemiology, Public Health and Primary Care) joined Imperial in 2005 and is currently Chair of Cancer Epidemiology and Prevention, and Head of the Division of Epidemiology, Public Health and Primary Care.

His research examines how factors such as nutrition, metabolism and physical activity affect cancer of the digestive and respiratory tract.

“...It’s powerful, with the freezing temperatures and mountains of ice around you, but at the same time it is very fragile. And even the slightest rise in global temperature could cause much of that ice to melt, which would be a disaster”

—EARTH SCIENCE AND ENGINEERING POSTGRAD JEFF MARLOW ON A TRIP TO ANTARCTICA, HEAR THE FULL INTERVIEW: WWW.IMPERIAL.AC.UK/MEDIA/PODCASTS
Simulator surgery in European first

A virtual reality simulator has been used at St Mary’s Hospital for the first time in Europe to rehearse a high-risk vascular operation. The Imperial College Healthcare surgical team used the simulator, Angio Mentor, to rehearse a complicated stent procedure in a bid to make the surgery even safer by minimising any technical difficulties before their patient reached theatre.

The first patient to benefit from its use was Donald Lightbody, 70, who suffered from a condition which hardened and narrowed the arteries in his neck and put him at risk of having a stroke.

The procedure, which involves putting a stent in the carotid artery, carries a two to four per cent risk of causing a stroke. Professor Nick Cheshire, consultant vascular surgeon and clinical programme director of circulation sciences and renal medicine, said: “With patients like Donald we have to balance the risk of surgical intervention versus the patient’s risk of stroke due to their condition. Being able to rehearse a complicated procedure like this means we are able to minimise any technical difficulties before the patient reaches theatre, making surgery even safer.

“This is the first step towards our aim of simulating all image-based interventions and being able to rehearse surgical procedures before they are performed on the actual patient in theatre.”

The simulator works by taking the CT scans of an individual patient’s anatomy and transforming them into a three-dimensional model, which acts as a virtual angiogram, on screen. Clinicians can then insert real-life surgical tools into a workstation in front of them, which mimics the anticipated reactions of the patient’s body, while they navigate through the artery on the screen and position the stent.

Following this European-first simulation, a multi-centre, international trial of the procedure rehearsal simulation technology on the Angio Mentor will take place. This will be led by Imperial’s Department of Biosurgery and Surgical Technology.

— IMPERIAL COLLEGE HEALTHCARE NHS TRUST PRESS OFFICE

Student entrepreneurs battle it out

A Dragon’s Den-style business plan competition organised by Imperial’s student entrepreneurial society has awarded £3,000 to a student team for its innovative idea to improve mobile phone technology.

The winning group, Microantennae, developed the concept of an ultra small antenna which can transmit and receive radio waves for use in mobile phones and other devices using wireless internet. The antenna is 100 times smaller than current versions. The smaller size means the power consumption of the device is lowered and more space is generated inside the phone for other technology and a bigger memory.

Microantennae is made up of Marita Cheng and Jonathan Webster from the Faculty of Engineering and Stuart Milne and Dhiraj Sinha from the University of Cambridge.

— NAOMI WESTON, COMMUNICATIONS

For more information about the Ideas Empowered competition and Imperial Entrepreneurs visit: www.imperialentrepreneurs.com

Tips from the top

The first cohort of staff taking part in Imperial’s new talent development programme received a personal insight into the demands of leadership from the Recruiter at an event held on 13 May.

Offering his top tips on good leadership he told the 12 participants: “Leadership is largely about trust; you need your staff to trust your judgement and your confidentiality. Experience is also important; you need to learn from your experience of interacting with people and constantly learn in your day-to-day life.”

Sir Roy (pictured) was speaking at a masterclass for Professional Services level four staff, who are taking part in Horizon, a 12-month programme. Horizon offers an accelerated development opportunity to these staff in junior and middle management positions who perform well within their current role and have the potential to move into more senior roles within the College.

Staff are selected to participate by a development panel of senior managers from different areas of the College who consider nominations made by individuals or their line manager.

The programme includes leadership development modules covering areas such as leading and inspiring others, strategic thinking and decision making.

Judy Barnett, Talent Development Manager from the Human Resources Division, says: “The Horizon programme builds on the learning and development options offered by the College, and gives a new and focused development opportunity which is strongly supported by senior staff.”

— NAOMI WESTON, COMMUNICATIONS

The Horizon programme’s next cohort is due to start in July 2009. For more information about the programme visit: www.imperial.ac.uk/staffdevelopment/management/talentdevelopment/horizonleadersprogramme
Bank chief ‘wrong’ about science

Rector Sir Roy Anderson has spoken out in response to the Governor of the Bank of England, who cautioned against more spending on science, BBC News Online reports. Bank chief Mervyn King had argued against a £1 billion funding boost for science, saying public debt levels were too high, but Sir Roy said that investment in science is one of the few options the government has to kick-start the economy. “In essence how are we going to position the UK economy coming out of the recession? I’d argue that science and technology is one of our few options and it’s a good time to provide that stimulus,” he commented. In addition, Sir Roy is leading efforts to persuade the government to set up a separate £1 billion venture capital fund to support small high technology companies.

Twist and shout

Giant solar ‘twisters’—invisible tornadoes that whirl through space at more than a million miles per hour—have been measured in more detail than ever before, according to National Geographic News. The massive solar windstorms spark auroras, also known as the southern or northern lights. Dr Timothy Horbury (Physics) told the publication: “It gives us the most detailed picture yet about the way our magnetic field responds to solar wind.”

Attack of the clones

A controversial fertility doctor who claimed to have transferred cloned human embryos into the wombs of four women was widely condemned by scientists and medical ethicists in The Independent. Leading figures in the fertility world poured scorn on Dr Panayiotis Zavos’s claims, saying he had not produced any scientific evidence to support his statements, or opened up his work for peer review. Professor Lord Robert Winston (Humanities) told the paper: “I do not know of any credible evidence that suggests Dr Zavos can clone a human being. This seems to be yet another one of his claims to get publicity.”

Awards and honours

Fame for INSPIRE participant

Simon Foster, a previous INSPIRE research associate at Imperial, has won the first round of NESTA Famelab – a national competition set up to find the next generation of science communicators. Famelab gives scientists the opportunity to demonstrate their passion and ability to communicate science in front of a live audience as well as a panel of expert judges, obtaining invaluable feedback. Simon says: “I now

progress to the national final at the Cheltenham Science Festival on 5 June. There have been five rounds around the country, with the winner of each regional heat being guaranteed a place at the national final.”

University business challenge success

A group of entrepreneurial students from Imperial have won the top prize of £1,000 in the IBM University Business Challenge (UBC), beating off competition from over 250 teams from more than 70 UK universities. The UBC is a simulation exercise that provides students with the opportunity to take on the role of business consultants and

work on improving the performance of a company. Each team is given details of a company, its markets and its current financial position and they compete to run the business.

The Imperial team successfully managed a fictitious perfume company. They had to take into account the financial performance of the company, its responsibilities to its various stakeholders, suppliers, customers and employees.

The winners included Jason Lin and Ashley Uglow (Mathematics), Hesham Zafar (Electrical and Electronic Engineering) Daban Abdul-Hamid (Civil and Environmental Engineering) and Maximilian Tay (Bioengineering).

www.uk.ubcworldwide.com/content/index.asp

Medicine

Belvisi’s award for inflammation research

Professor Maria Belvisi (NHLI) has been selected as the winner of the Women in Inflammation Science award by the International Association of Inflammation Societies (IAIS) award committee.

Professor Belvisi was selected as a woman who had a distinguished scientific career and demonstrated a commitment to progressing the careers of women in the field of inflammation research.

The award will be presented at the World Congress on Inflammation 2009 in Tokyo, Japan in July.
Human nose too cold for bird flu

Avian influenza viruses do not thrive in humans because the temperature inside a person’s nose is too low, according to research published in the journal *PloS Pathogens* on 14 May. The authors of the study, from Imperial and the University of North Carolina, say this may be one of the reasons why bird flu viruses do not cause pandemics in humans easily.

There are 16 subtypes of avian influenza and some can mutate into forms that can infect humans, by swapping proteins on their surface with proteins from human influenza viruses.

The study shows that normal avian influenza viruses do not spread extensively in cells at 32 degrees Celsius, the temperature inside the human nose. The researchers say this is probably because the viruses usually infect the guts of birds, which are warmer, at 40 degrees Celsius. This means that avian flu viruses that have not mutated are less likely to infect people, because the first site of infection in humans is usually the nose. If a normal avian flu virus infected a human nose, the virus would not be able to grow and spread between cells, so it would be less likely to damage cells and cause respiratory illness.

Professor Wendy Barclay (Investigative Science), one of the authors of the study, said: “It would be impossible to develop vaccines against all 16 subtypes of avian flu, so we need to prioritise. By studying a range of different viruses in systems like this one we can look for warnings that they are already beginning to make the kinds of genetic changes in nature that mean they could be poised to jump into humans.”.

—LUCY GOODCHILD, COMMUNICATIONS

New blood pressure genes discovered

Eight common genetic variations that have an influence on blood pressure have been identified in a new study by Imperial scientists, working with 164 researchers from 93 centres in Europe and the USA.

High blood pressure affects one billion people worldwide and at least 18 million people in the UK. It is a major risk factor for heart disease and stroke, and causes at least seven million deaths worldwide each year. Although a number of lifestyle factors, such as drinking too much alcohol, lack of exercise, being overweight and consuming increased salt in the diet, can raise blood pressure, it has long been established that high blood pressure runs in families. This suggests that alterations within genes may predispose individuals to getting raised blood pressure.

In work published on 10 May 2009 in *Nature Genetics*, scientists scanned the entire human genetic code looking for variation affecting blood pressure. To do this, the researchers from the Global BPgen Consortium compared 2.5 million genetic variants from 34,433 people of European ancestry with measurements of their blood pressure. This enabled the discovery of eight genetic differences that related to slightly higher, or slightly lower, blood pressure. To confirm these were real findings, they checked the same regions in up to 90,000 additional white European individuals and 12,000 people of south Indian Asian descent.

Researchers from the Department of Epidemiology and Public Health say their findings will help understanding of the underlying causes of high blood pressure and, in the future, may point to new ways of treating the condition.

—GLOBAL BPGEN CONSORTIUM

Is the UK prepared for sudden oak death?

Britain’s ability to stop the spread of so-called ‘sudden oak death’, a disease threatening the country’s trees, woods and heathland, will be assessed in a new review by Imperial researchers announced earlier this month.

The review, which has been commissioned by the government’s Department for the Environment, Food and Rural Affairs (DEFRA), will look at the effectiveness of current strategies being used to keep this burgeoning disease under control.

The scientists conducting the new review, led by Dr Clive Potter from the Centre for Environmental Policy, will evaluate how effective current measures have been to control recent outbreaks in Cornwall and elsewhere, and will recommend improvements to be made.

Dr Potter said: “A review of the strategies being employed against these new woodland diseases is timely. It will enable us to bring experience from the past to bear, and to evaluate the effectiveness of current policies.”

Despite its name, sudden oak death does not affect just oak trees. The disease is caused by two pathogens, *Phytophthora ramorum* and *Phytophthora kernoviae*, which can infect a wide range of trees and shrubs found in the UK including beech, ash, yew, rhododendron, magnolia and heathers.

The pathogens kill trees and shrubs by creating cankers which girdle the trunk or stem, and clog up their water-carrying ‘veins’. Since the 1990s, sudden oak death has wiped out millions of trees in the forests of California and Oregon in the USA. British experts fear that if the disease took hold and spread rapidly throughout the UK, the impact could be severe.

—DANIELLE REEVES, COMMUNICATIONS
Searching for the next generation of space settlement engineers

Imperial researchers are searching for a team of secondary school students to take part in a competition at NASA’s space centre in the USA.

Dr Randall Perry (Earth Science and Engineering) will be one of the panellists choosing the UK team for the Annual International Space Settlement Design Competition. He explains what excites him about the project:

“The winning UK team will get the chance to talk to world-leading scientists who are at the cutting edge of space exploration… Who knows, we could be inspiring the next generation of engineers who will actually design real space settlements for the colonists of the future.”

This is the first time that UK pupils are being given the chance to take part in the competition, in which 12 finalist teams from around the world will compete to design the best fictional international space settlement. The US competition aims to give secondary school students first-hand experience of what it is like to work in the aerospace industry.

“Who knows, we could be inspiring the next generation of engineers who will actually design real space settlements for the colonists of the future”

At the US competition, the winning team will meet astronauts, space shuttle engineers and other experts, who will teach them about space exploration, engineering and management.

The team will have a go at being aerospace engineers, exploring how to overcome a range of design challenges as they develop their proposals. These will include how to grow food in space and recycle the air so that it can be breathed. The students will also have to work out how to design workspaces, homes and recreational facilities.

—COLIN SMITH, COMMUNICATIONS

Blood pressure research named Trial of the Year

A trial that showed how lowering the blood pressure of very elderly patients could cut their overall mortality by a fifth and their rate of cardiovascular events by a third has been named Trial of the Year 2008 by Project ImpACT (Important Achievements of Clinical Trials) and the Society for Clinical Trials.

The 3,845-patient Hypertension in the Very Elderly Trial (HYVET), which was initiated and coordinated by scientists from Imperial, is the largest ever clinical trial to look at the effects of lowering blood pressure solely in those aged 80 and over.

The research led by Professor Chris Bulpitt from the Department of Care of the Elderly showed that the benefits of treatment include a 21 per cent reduction in total mortality rate, a 39 per cent reduction in stroke mortality rate, a 64 per cent reduction in fatal and non-fatal heart failure, and a 34 per cent reduction in cardiovascular events. Some of these benefits were apparent within the first year of follow-up.

This award means that HYVET has been judged by the Society for Clinical Trials to improve the lot of mankind and provide the basis for a substantial and beneficial change in health care.

Professor Bulpitt collected the award earlier in May at the conference of the Society for Clinical Trials in Atlanta, Georgia, USA.

In addition to receiving this award, HYVET has also been named Trial of the Year by Medscape.

—LUCY GOODCHILD, COMMUNICATIONS

Swine flu: early findings about pandemic potential

Early findings about the emerging pandemic of a new strain of influenza A (H1N1) in Mexico were published in Science on 11 May.

Researchers from the MRC Centre for Outbreak Analysis and Modelling at Imperial, working in collaboration with the World Health Organisation and public health agencies in Mexico, have assessed the epidemic using data to the end of April.

The researchers have found that so far the data is consistent with what they would expect to find in the early stages of a pandemic.

The researchers’ best estimate is that in Mexico, influenza A (H1N1) is fatal in around four in 1,000 cases in Mexico, influenza A (H1N1) is fatal in around four in 1,000 cases, which would make this strain of influenza as lethal as the one found in the 1957 pandemic. The researchers stress that healthcare has greatly improved in most countries since 1957 and the world is now better prepared.

For every person infected, it is likely that there will be between 1.2 and 1.6 secondary cases. This is high compared to normal seasonal influenza, where around 10–15 per cent of the population are likely to become infected. However, it is lower than would be expected for pandemic influenza, where 20–30 per cent of the population are likely to become infected.

Professor Neil Ferguson, the corresponding author of research from the MRC Centre for Outbreak Analysis and Modelling at Imperial, said: “What we’re seeing is not the same as seasonal flu and there is still cause for concern—we would expect this pandemic to at least double the burden on our healthcare systems.”

—LUCY GOODCHILD, COMMUNICATIONS
Bringing together Imperial staff previously spread across different campuses, the new L block will be a powerhouse of clinical research, transforming discovery into treatment in the same building.

L block—the new six-storey building at Hammersmith Campus—will form a key facility for the Academic Health Science Centre, a unique partnership between Imperial College London and Imperial College Healthcare NHS Trust, where researchers will work together to develop better therapies for conditions such as heart failure, artery disease, arthritis, diabetes and obesity.

The current L block dates back to the 1930s and is no longer fit for purpose. The new £99 million facility, partly funded by the Medical Research Council and the Wellcome Trust, will see the construction of a scientific research building on the sites of the current L and J blocks on the south west corner of the campus.

The development will encompass the largest cardi-ovascular research facilities in Europe, a new Wellcome Trust clinical research facility, the Medical Research Council Clinical Sciences Centre (MRC CSC) and a new imaging unit. It will also provide the headquarters for the British Heart Foundation (BHF) Centre of Research Excellence at Imperial.

Last month, at the construction launch ceremony, Rector Sir Roy Anderson told colleagues and contractors how radically different the campus would look in a few years’ time. The benefits would be a building bringing together a critical mass of scientists, clinicians and patients under one roof, focusing on major health challenges in many areas and on cardiovascular medicine, in particular.

The plans

The new L block development will be the largest construction contract ever placed by Imperial and will bring together staff from across the College to work on a diverse range of specialisms.

On the lower ground floor of the building, researchers will use the new Translational Medicine Imaging Unit to scan patients and volunteers, to explore the effectiveness of different therapies and to analyse how different diseases are working in the body. The imaging unit will include a magnetic resonance imaging (MRI) scanner and a positron emission tomography (PET) CT scanner.

The ground floor of the new building will be devoted to a new Wellcome Trust clinical research facility. Here, healthy volunteers and patients from the adjacent hospital facilities at Imperial College Healthcare NHS Trust and beyond, will take part in studies to better understand disease processes, and to develop and evaluate new treatments for health problems including cardiovascular disease, cancer, and neurological and psychiatric conditions.

On the second floor, experts from the MRC CSC will be looking at the genetic variations involved in conditions such as arthritis, diabetes and obesity, in order to explore new ways of preventing and treating them. This floor will link with MRC activity in the Commonwealth and Clinical Research buildings and will enable closer interaction between the cardiovascular researchers from NHLI (based on the upper levels...
of L block) and the genomics and genetics teams led by Professor Tim Altman and Dr Stuart Cook of the MRCCSC. The NHLI Division and MRCCSC teams share an intense interest in the causes of cardiovascular disease and the networks of genes involved, both in model organisms and in human populations.

Upper floors in the development will provide research laboratories and offices for 300 cardiovascular scientists and physicians exploring areas including how to harness stem cells to combat heart attacks and heart failure. Much of the cardiovascular space is earmarked for new recruits, at levels ranging from lecturer to professor.

The Head of Vascular Science for the NHLI Division, Professor Dorian Haskard, and his team will focus on studying the underlying mechanisms of artery disease which lead to heart attacks, strokes and peripheral vascular disease. In particular, they will focus on how white blood cells are activated to infiltrate into artery walls and cause tissue injury. A further focus will be to understand the intrinsic protective mechanisms by which healthy blood vessels resist disease.

—HAZEL MELNICK, IMPERIAL COLLEGE HEALTHCARE NHS TRUST PRESS OFFICE AND LAURA GALLAGHER, COMMUNICATIONS

The heart of L Block

L block will consolidate the AHSC’s cardiovascular research base and provide one of the largest cardiovascular research facilities in Europe.

BHF Professor Michael Schneider, Head of the National Heart and Lung Institute, will head the cardiovascular facility — spread across three floors in the new L block. He hopes that the critical mass of basic researchers and clinicians located on one campus will offer unique opportunities to develop new diagnostics and treatments. He believes the facility will exemplify the aspirations of the Academic Health Science Centre — giving researchers the ability to move potential candidates for testing in humans through all necessary clinical pre-validation. The portfolio of therapies being prepared for testing includes drugs, genes, devices and cells.

A key scientific and clinical goal of the facility will be to replace the loss of cardiac muscle cells that occurs in heart attacks, for which there is currently no treatment apart from a heart transplant. Professor Schneider explains what the move will mean for the field of cardiology at Imperial: “I'm looking forward to having unprecedented cardiology ‘fire power’ on a single campus. We have enormous depth of talent in the major areas of cardiology including vascular biology, cardiac muscle research and large scale epidemiology studies. While vascular biology already has a big presence at Hammersmith, cardiology research as a whole is currently dispersed across seven campuses. Proximity is essential for us to tackle the bigger issues of cardiology.”

Professor Schneider’s team will be focusing on the problems of cardiac muscle regeneration and repair in chronic heart failure and acute heart attacks. As part of this work, he will be hunting for proteins that cause cardiac muscle cell death in order to develop methods to block them. His group will also investigate ways of increasing the number of beating cardiac muscle cells by stimulating their proliferation artificially or through cell grafting, including grafting of adult and embryonic stem cells.

The researchers will also be developing robotic equipment for stem cell cultures and bio-processing to produce a safe and rapid method of producing the billions of cells needed for therapeutic use. This will be done in partnership with the Good Manufacturing Practice facility at Hammersmith.

The central ethos of the AHSC is the idea of translational medicine — bringing therapies to patients more quickly. Professor Schneider comments: “I think it works in both directions. While we are bringing new stem cell therapies to patients — working from bench to bedside — we are also dedicated to patient driven research, so in a sense moving from bedside to bench. We use real experiences with patients and look at the characteristics of diseased human tissue as a springboard for new discoveries and new understanding.”

—EMILY ROSS, COMMUNICATIONS

Cardiology research as a whole is currently dispersed across seven campuses. Proximity is essential for us to tackle the bigger issues”
Reporter speaks to the Principal of the Faculty of Natural Sciences, Professor Maggie Dallman, and hears of her determination to ensure scientific ideas continue to flourish in spite of the economic crisis.

Far from playing with test tubes and microscopes, as a child Maggie Dallman had her heart set on becoming a ballerina. Until she was 18 she took lessons four times a week and thanks to her ballet school’s connection with the Royal Academy of Dance, Maggie had the chance to dance with some of her heroes, including English ballerina Margot Fonteyn.

Maggie’s decision not to pursue ballet as a career didn’t come easily but as someone who throws herself into everything she does, she recognise that the brevity of a ballerina’s career wouldn’t fulfil her ambitions. Maggie decided a more academic path was the way forward as she had begun to excel in her school work, particularly in science. She says: “While moving away from ballet was really hard, choosing science seemed very natural to me.”

Educated at a grammar school in south London, Maggie remembers visiting the Royal Institution to hear Chemistry A level lectures. She says: “For me it was my first opportunity—outside my school environment—to hear some really exciting things about science. It confirmed to me that pursuing science at a higher level was the right choice.”

Maggie’s career progressed swiftly and after studying cellular pathology at Bristol University, working at Oxford University and in the USA, Maggie came to Imperial in 1994 as a lecturer in the Department of Biology. She became Reader in Immunoregulation in 1996 and Professor of Immunology in 1999. Since 2001, Maggie has taken up increasingly senior positions at the College, including Section Head for Immunology and Infection, Campus Dean and Deputy Principal, and now Principal of the Faculty of Natural Sciences.

She explains the transition: “It wasn’t a deliberate move away from research but the more I got involved in central College activities, the more I enjoyed it. I also viewed it as an opportunity to get an overview of the whole of Natural Sciences and a chance to propel more multidisciplinary activity.”

Young researchers

Maggie’s key aim as Faculty Principal is to ensure that there is a supportive framework for young researchers, and that heads of department and senior academics continue to work together to help them and engage them fully in College business. And, in the midst of budget cuts, she is keen to ensure that the economic downturn does not inhibit the creativity of the Faculty—a challenge which all parts of the College are facing.

One of the things which Maggie has already done to develop a more supportive structure for young researchers is to set up Junior Research Fellowships—which give early-career researchers three years free from teaching and administration. Maggie explains why postdoctoral researchers need support: “If you take up an academic appointment soon after completing a PhD, you are at a point where you are trying to launch your career, you are starting to teach and you are starting to play a role in the running of a department. It is incredibly challenging to get all these things off the ground at the same time.”

As a high achieving female in the traditionally male-dominated world of science, Maggie is often asked how hard it is to be a female academic. She explains that the College has worked hard to ensure that female academics are treated fairly and are well-supported but the problem today is about retention, as many women drop out after PhD level. She says: “One of my objectives is to fully understand why they leave and put in place every possible mechanism to deal with this drop out.”

Another of Maggie’s aims is to pass on her enthusiasm for science to the next generation and she has often been into schools to speak directly to children. She says: “I’ve had several students come up to me and say they only came to Imperial because I came to speak at their school—it makes you realise what a massive impact you can have.”

From research on cell-to-cell communication to the Large Hadron Collider at CERN, Maggie says she is constantly amazed by the huge range of work being conducted in the Faculty: “What drives me is the belief that these brilliant young scientists with all their great ideas will be the ones tackling all the problems that we see today. This makes me feel very hopeful.”

— Emily Ross, Communications
Rod Escombe
Honorary Research Fellow Dr Rod Escombe, talks about tackling TB in Peru, guinea pigs and local bureaucracy.

How did you end up working in Peru?
I was at a crossroads in my career—the next step would have been to become a registrar in a hospital in the UK. I was doing a bit of research and one of my registrars suggested going to Peru—I went out for six months and stayed for six years! I'd been to Peru as a medical student on elective working for a travelling hospital taking healthcare up into the mountains. So I knew a little bit about Peru and I spoke a bit of Spanish, so that's how I ended up there again.

Describe a typical day in Peru
There isn't a typical day in Peru! As a researcher running a big programme, sometimes you're recruiting patients to a study, other times you’re shaving guinea pigs to skin test them for TB, then you're in a laboratory with a bunch of test tubes or in the government health offices trying to get ethics approval for another bit of your study, or you could be giving presentations to the Peruvian Medical Society about your results.

How is doing research different there?
I guess there is a lot of bureaucracy in developing world countries. If I was doing research at St Mary's, I would get approval from the St Mary's ethics committee, whereas in Peru you have to get ethics approval from Imperial, the local hospital, the local Peruvian university and the local health authority—and it can delay things quite a lot.

What's the best thing about your work?
The main attraction is that it's translational research—one example of this is my research on Ultraviolet lights. No one has ever properly assessed UV lights in a clinical setting to see if they could reduce the spread of tuberculosis. That's what we did in Peru and we showed that they are a really good prevention method.

What are your hopes for the future?
We're trying to make healthcare facilities safe environments so that they don't cause transmission of the very diseases we are attempting to treat.

—LUCY GOODCHILD, COMMUNICATIONS
Student blogger Jaimie on his revision timetable:

**14.00:** Have spent the last two hours machine gunning down innocent bystanders on the PlayStation. I sincerely think that my brother could not have worse timing when it comes to purchasing video entertainment equipment.

**14.11:** Somewhat concerned about my mental state. Relocate to the garden. Watch cat play with butterflies.

So, as you can see, completely productive. For the rest of the afternoon I did manage to get a few solid hours of revision in, powered mainly by strong black coffees, a whimsical sense of bravado... and listening to Bonnie Tyler's 'Total Eclipse of the Heart'.

www.imperial.ac.uk/campus_life/studentblogs

Amazing mace

Imperial's new ceremonial mace was unveiled for the first time at the Postgraduate Awards Ceremony on 6 May. Here's the low down on the new arrival:

- **Made from:** silver and gilt
- **Weight:** 7.1 kg
- **Length:** 1.2 metres
- **Donated by:** Goldsmiths' Company
- **Designed by:** silversmiths Carl Padgham and Andrew Putland
- **Value:** £25,000

To watch a video of the ceremonial mace being presented at the graduation ceremony visit: www.imperial.ac.uk/news/mace

Tom Kibble’s rewarding experience

Noted theoretical physicist Tom Kibble, who served as Head of the Department of Physics from 1983–91, describes being awarded a Fellowship at this year’s Postgraduate Awards. He says: “I have been privileged to be associated with Imperial for 50 years so it was very gratifying to be awarded a Fellowship. The Imperial Physics Department has been a wonderful place to work, where I have made many good friends. So far as the awards ceremony itself was concerned, my biggest worry was that, sitting in the front row on the platform of the Albert Hall, I would fall asleep—I am well-known for dozing off during seminars, especially after lunch. But actually it wasn’t boring in the least!”

Andreas’ guide to sightseeing in Vienna

The best thing about Vienna is you can easily get around on foot and the architecture is so varied—you’ll see a real mix of styles from Biedermeier, Viennese Art Nouveau to Baroque and Gothic.

The city is separated into districts and most of the main attractions are in the city centre (the first district) where you’ll find the Emperor’s residential palace, the Museum Quarter and the Town Hall.

Every landmark should be accompanied by a good cup of coffee—I would recommend the following coffee houses: Landtmann (near the Town Hall, University of Vienna and the National Theatre), Demel (in the city centre) and Sacher (near the Vienna Opera House).

And if coffee isn’t your cup of tea, Vienna is the only cosmopolitan city in the world to grow its own wine—ask for Heuriger in any restaurant to taste this year’s batch.

If you are after some relaxation after all the walking, I’d recommend taking a trip to one of my favourite places—the Gloriette in the Schönbrunn Palace garden—which gives you a good view of Schönbrunn Palace and the skyline of Vienna.

People have been drinking coffee in Austria since the first attempt by the Ottoman Empire to capture the city of Vienna in 1529.
Security officer of the year

Imperial Security Officer Steven Michael was named Security Officer of the Year at the Association of University Chief Security Officers Gala Dinner and Annual Awards ceremony, held at the National Railway Museum in York on 22 April. Steve was nominated by Terry Branch, Head of Security, for his outstanding actions helping a student at Evelyn Gardens hall of residence in April 2008. Steve was awarded a framed certificate, a crystal engraved award and a cheque for £200.

Voyage to the bottom of the periodic table

The Graduate Schools held their annual chemistry demonstration show for postgraduate students on 8 May. The event, Braving the Elements: Journey to the Bottom of the Periodic Table, involved an hour of explosive exhibition chemistry followed by an evening reception in the marquee with live music from The Main Attraction.

Max Whitby, a PhD student in the Department of Chemistry and one of the demonstrators, described the evening: “For the fourth year running, the University of Brighton’s Dr Hal Sosabowski, Dave Campbell and team performed a live chemistry show for the Graduate Schools May party. This year we reached the lower rows of the periodic table. The EPSRC-sponsored event featured experiments with some heavy duty elements: Mike Sansom from Brighton Fireworks concocted high explosive lead azide, with which he proceeded to blow open four innocent baked bean cans; Dr Fiona Barclay from RGB Research demonstrated her lurid orange uranium-glazed radioactive sugar bowl; and I plunged a naked incandescent tungsten filament into a vat of liquid nitrogen. Other highlights included the beautiful phosphorus sun, and a series of deafening hydrogen explosions. Plus a memorable rendition of Sonny and Cher’s ‘I Got You Babe’ performed by a helium choir. All in all it was quite a day.”

Family celebrate joint graduation

Postgraduates Kathy Mitchell and her son Pete graduated from Imperial on 6 May. Kathy explains how they both ended up studying at the College:

“I applied to Wye College to study plant science before it was announced that it was merging with Imperial. Pete was already an undergraduate at Imperial so we both found it quite funny that we would be travelling along this path at the same time. We were both studying innate defences against bacteria, with Peter at Hammersmith and then at Guy’s, and me at Wye so we had some miles between us although we were at the same institution.

Our paths in academia only really crossed during the writing-up phase when Peter came home. Our family had to cope with us both writing up our theses at home. That was certainly intense and there was a bit of a race on to see who would finish first. Peter submitted first but his vivas were delayed, but then he finished correcting first so I think in the end he won! On the day I had mixed feelings about the ceremony—I was in the proud parent mode, rather than feeling like a graduand. It was slightly surreal for us to both be gowning up!”

course review

By course attendee Dr Dominic King, Clinical Research Fellow (SORA)

MEd in Surgical Education

What is the course and who is it for?
The MEd provides rigorous academic training in teaching and research methods for surgical educators. Participants include surgeons—both consultants and trainees—specialists undertaking invasive procedures and allied health professionals. It can be completed over one year full-time or two years part-time.

How was the course useful?
The course gives a good grounding in key educational theories. You also learn about techniques used specifically in surgical education, such as virtual reality simulators used to teach technical skills.

How has taking the MEd affected your everyday work?
I now feel that I take a more systematic approach to teaching. Being aware of different ways to teach the same thing, I now adapt my technique to the audience. Lesson planning, providing feedback and effective technical skills training are skills I learnt on the Master’s and now use on a daily basis.

For more information on this course visit: www.imperial.ac.uk/edudev/cedprogrammes/medsurged
Mike Reed, Professor of Steroid Biochemistry (Medicine), died suddenly on 6 April. Dr Atul Purohit and Professor Desmond Johnston (Medicine) pay tribute: “Mike obtained a BSc in Zoology from the University of London in 1967 and an MSc in Biochemistry from Imperial in 1969. He then began research into the actions and metabolism of ethinyloestradiol at the Royal Postgraduate Medical School, culminating in a PhD in 1973. This sealed his interest in oestrogens and he continued working in this area before moving to the Department of Chemical Pathology at St Mary’s Hospital Medical School in 1976 to focus his attention on aromatase—an enzyme that helps the growth of cancerous tumours by increasing the amount of oestrogen in the tumours.

Mike was steadily promoted from Lecturer to Senior Lecturer and then to Reader in 1992. His work on oestrogen synthesis in postmenopausal women with breast cancer earned him international recognition. In 1995 he was appointed Professor of Steroid Biochemistry in the Department of Endocrinology and Metabolic Medicine headed by Professor Des Johnston.

Together with Dr Atul Purohit, he developed a research programme in steroid sulphatase inhibitors for the control of cancers which respond to steroids. These studies led to commercial funding and the creation of an Imperial spin-out company—Sterix Ltd.

Mike was proud of his team and was very supportive of students and colleagues—his generosity of spirit and inspiration as a scientist will be greatly missed.

Mike is survived by his wife Gill, daughter Julie (who also now works at Imperial) and son John.” For the full obituary visit: www.imperial.ac.uk/medicine/news/110509_mikereedobit

**Obituary**

**ALBERTO FERREIRA**

Alberto Ferreira, who worked in the Grounds Support Team for Soft Services, died suddenly on 11 March 2009. Graham Watson, Head of Soft Services (Facilities Management) pays tribute: “Alberto worked within the Estates group as part of the support team for eight and a half years. Despite his language difficulties, he was very much part of the team and enjoyed the company, camaraderie and support of his colleagues. The whole of the team was deeply shocked and saddened to learn of his sudden death.”

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**SPOTLIGHT**

Gill Brown, Purchase Officer (Investigative Science) 20 years

After moving from Lancashire to London in 1989, Gill Brown took up a temporary job which has led to a career spanning 20 years. Gill joined the Royal Postgraduate Medical School at Hammersmith as a laboratory technician in Diagnostic Haematology and has remained at the Campus ever since. “I had only ever done office work before that,” says Gill, “but I really enjoyed the diversity of working in a lab.” When the medical school became part of Imperial in the mid-1990s, Gill was appointed Purchase Officer for Haematology, with responsibility for ordering everything from plastic pipettes to paper towels. “I really enjoy what I do because every day is so different,” she says. Gill is also kept busy as Unison representative, a role she has undertaken for the past 18 years. Outside work, she uses the Ethos pool whenever she can and enjoys working on her allotment at home.

Louise Lindsay, Director of HR Operations (Human Resources) 20 years

A first job in personnel 20 years ago was the start of a long and happy connection with Imperial for Louise Lindsay. Louise joined the College as an administrator in HR in 1989. “At the time, I wasn’t sure whether I wanted to go into teaching or HR, but I enjoyed HR and liked Imperial so much that I decided to stay,” says Louise. Within 18 months, Louise was promoted to Personnel and Training Officer in Estates, becoming Employee Relations Officer in 1994 and moving to her current position as Director of HR Operations in 2004. Her current role includes leading a team dealing with contractual and employee relations across the College, and she has recently completed a Master’s degree in Employment Law. “I really enjoyed the course but, thankfully, I can now read something other than a law report and spend a little more time with the family,” she says.

—WENDY RAESIDE, COMMUNICATIONS

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**Correction**

Contrary to the information published on page 15, issue 204 of **Reporter**, Emeritus Professor of Physiology Peter Ellaway (Neurosciences and Mental Health) is not leaving Imperial.
Welcome new starters

Dr Mohammed Al-Hashimi, Chemistry
Mrs Hadia Azhar, NHLI
Ms Samantha Bell, Sport and Leisure
Mr Claudio Belletti, Physics
Dr David Bernado Ordiz, Investigative Science
Mr Laurence Billingham, Physics
Dr Jonathan Bond, Clinical Sciences
Dr Valerie Borel-Vannier, NHLI
Dr Wouter Buylaert, Civil and Environmental Engineering
Miss Lucy Colman, Clinical Sciences
Ms Kirsty Crocket, ESE
Mr Denis Cuming, ESE
Mrs Louise Dawson, SORA
Mrs Veronica De Araujo, Chemical Engineering
Professor Frank De Wolf, Kennedy Institute
Mr James Parkinson, Medicine
Miss Apli Patel, Clinical Sciences
Dr Benjamin Lamb, SORA
Dr Roderick Mackenzie, Physics
Dr Lok Mak, Cell and Molecular Biology
Miss Alexina Mason, EPHPC
Mr Dimitris Mostrouskis, Computing
Miss Jenna Murdoch, NHLI
Mr Samuel Murphy, Materials
Mr Henry Muss, Estates
Ms Lucy Noel, EPHPC
Dr Miguel Olalla Tarragó, Biology
Mrs Deslyn Brown, Faculty of Medicine (21 years)
Ms Charlotte Burt, Investigative Science
Ms Hannah Carney, Biology
Mr Pui Chau, SORA
Mr Francis Chang, Neurosciences and Mental Health
Mr Jié Chen, Mechanical Engineering
Dr Matthew Cook, Chemistry
Miss Sarah Dickens, Neurosciences and Mental Health
Mr Les Edwards, Investigative Science
Mrs Catharina Emm, Investigative Science (5 years)
Ms Marie Fallon, Faculty of Natural Sciences
Dr Bjorn Gebhardt, Chemistry
Dr Michela Groppo, Clinical Sciences
Dr Frederique Guesdon, Investigative Science
Dr Cindy Guo, SORA
Mrs Isobel Harrison, Neurosciences and Mental Health (6 years)
Dr Edmund Hartl, Mathematics
Mr Shane Heberley, ICT
Dr Kin Ho, Aeronautics
Dr Julia Inglis, Kennedy Institute (5 years)
Miss Arna Irwin, Sport and Leisure
Miss Eve Jaques, Development
Miss Sandy Kaur Johal, Human Resources
Dr Hans-Joerg Lang, Medicine
Dr Erh-Hsui Lin, Materials
Mr Marcelo Lima, Catering Services
Dr Liang Ma, Medicine
Ms Sandra Ma, Business School
Miss Lauren Malley, Registry
Mr Chris Martin, Civil and Environmental Engineering
Dr Edward McGowan, Medicine
Miss Els Noorda, International Office
Dr Hirohsa Nose, Investigative Science
Ms Emma Nye, Investigative Science (5 years)
Mrs Charlotte Ohl, SORA
Dr Grace Osata, NHLI
Ms Katarzyna Parzych, Cell and Molecular Biology
Ms June Phillips, College Headquarters
Dr Christopher Powerlin, Chemistry
Dr Hongyong Qiu, Computing
Mr Alfredo Ramos, Chemical Engineering
Miss Jolene Retallick, Graduate Schools
Dr Roncancio Diaz, Investigative Science
Dr Erika Rosiwatz, Cell and Molecular Biology
Mrs Catherine Sandsund, NHLI
Mr Ahmed Shamlou, EPHPC
Dr Kedong Song, Chemical Engineering
Dr Darunee Soorukram, Chemistry
Mr Andrew Surman, Chemistry
Dr Namrata Syngal, NHLI
Dr Anne Taegtmeyer, Investigative Science
Dr Kyoko Takatsu, Clinical Sciences
Dr Junwang Tang, Chemistry
Dr Julia Toschke, SORA
Dr Arthur van de Nes, Physics
Miss Nicole Van Stiphout, NHLI

Farewell moving on

Mr James Aird, Physics
Dr Deborah Bard, Physics
Dr Sean Barrett, Physics
Dr Francesco Belardinelli, Computing
Mr Ivano Benedetti, Aeronautics
Dr Ben Braithwaite, EPHPC
Mrs Denis Brown, Faculty of Medicine (21 years)
Ms Charlotte Burt, Investigative Science
Ms Hannah Carney, Biology
Mr Pui Chau, SORA
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Dr Kyoko Takatsu, Clinical Sciences
Dr Junwang Tang, Chemistry
Dr Julia Toschke, SORA
Dr Arthur van de Nes, Physics
Miss Nicole Van Stiphout, NHLI

Putting on a show in Portugal

Landscapes painted by Imperial staff and students during an Arts Club visit to the World Heritage Site of Madiera have been displayed at two exhibitions in Portugal. During the trip in February, a group of 20 staff and students painted the Laurisilva forests. The trip was supported by the top art museum in Portugal, Centro das Artes—Casa das Mudas and the Town Hall of Camara de Lobos, both of which displayed the artwork throughout April and May.

Arts Club is run by artist Nelson Ferreira. Art classes for staff and students take place every Saturday at Beit Quad on the South Kensington Campus.

Contact Nelson: nsf@mail.com
11 JUNE • GRANTHAM INSTITUTE FOR CLIMATE CHANGE ANNUAL LECTURE
Shifting rainfall patterns: lessons from the past
Professor Wallace Broecker, Newberry Professor in the Department of Earth and Environmental Sciences at Columbia University, is perhaps best known for his discovery of the role played by the ocean in triggering the abrupt climate changes that punctuate glacial time. In his lecture Professor Broecker will look back to the ‘rich archive of information’ on the cold climate in glacial times to understand the impact global warming will have on the geographic distribution of rainfall in the future.

26 MAY • ALMROTH WRIGHT LECTURE
Therapeutic strategies for Duchenne muscular dystrophy
Professor Kay Davies, Oxford Centre for Gene Function

26 MAY • ATHENA LECTURE
Insights and vistas in hyperbolic geometry
Professor Caroline Series, Professor of Mathematics, University of Warwick

27 MAY • INAUGURAL LECTURE
Not so random walk through fluid dynamics
Professor Sergei I. Chernyshenko, Chair in Aerodynamics

27 MAY • SEMINAR
Electric fields in the brain: bug or feature?
Dr Costas Anastassiou, Division of Biology, California Institute of Technology

28 MAY, 1 JUNE, 3 JUNE AND 8 JUNE
Rector’s Q&A
A chance for staff to put their questions to the Rector

8 JUNE • LECTURE
The fifth Hounsfield Memorial Lecture
Dr James Fujimoto, Department of Electrical Engineering and Computer Science and Research Laboratory of Electronics, Massachusetts Institute of Technology, will be talking about Optical Coherence Tomography (OCT) technology and its applications. OCT is an emerging imaging modality which can generate high resolution, cross-sectional and three-dimensional images of microstructure in biological systems. This annual event is held in honour of Sir Godfrey Hounsfield, who spent 30 years working at the Royal Brompton CMR Unit after winning the Nobel Prize for Medicine for his work developing CAT scans.

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2 JUNE • INAUGURAL LECTURE
The negation of the negation: how the physical properties of rocks depend on the geometry of the void space
Professor Robert Zimmerman, Professor of Rock Mechanics

3 JUNE • LECTURE
Colicins: entering and breaking E. coli cells by stealth
Professor Colin Kearnthous, Department of Biology, University of York

4 JUNE • INAUGURAL LECTURE
Taurus excreta cerebrum vinct
Professor Meliron Thomas, Professor of Surgical Oncology and Consultant Surgeon, Royal Marsden Hospital

4 JUNE • INAUGURAL LECTURE
20 years of EPIC: figures, facts and the future of breast cancer research
Professor Petra Peeters, Professor of Chronic Disease Epidemiology

5 JUNE • INAUGURAL LECTURE
From common colds to pandemic influenza: the aleatoric element
Professor Wendy Barclay, Chair in Influenza Virology

8 JUNE • HOUNSFIELD LECTURE
Biomedical imaging and optical biopsy with optical coherence tomography
Dr James Fujimoto, Department of Electrical Engineering and Computer Science and Research Laboratory of Electronics, MIT