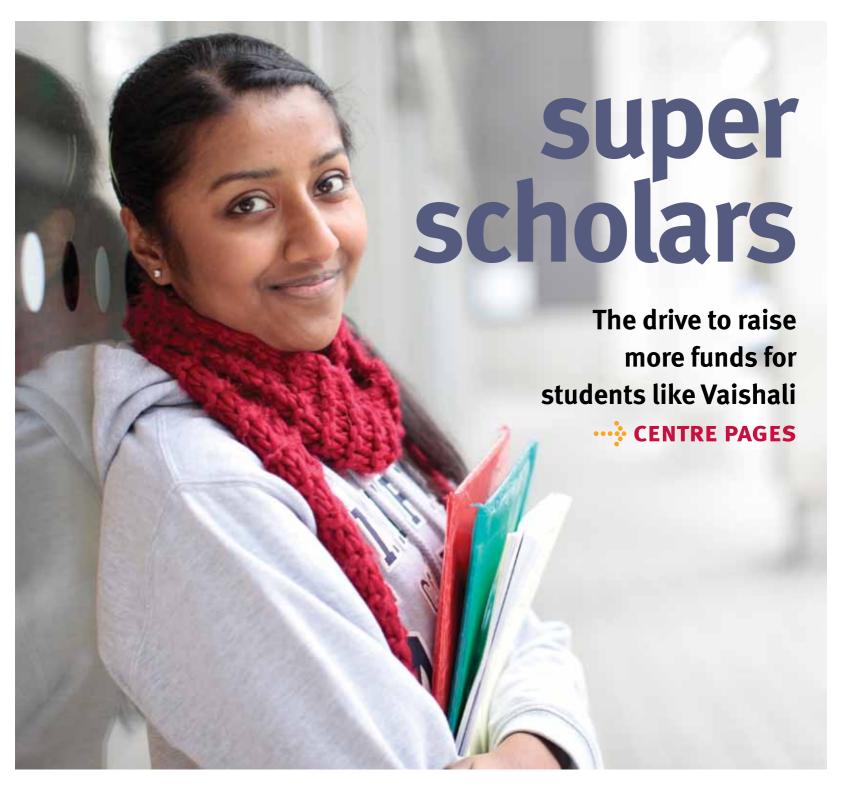
Imperial College London

reporter

ISSUE 242 ► 23 JANUARY 2012

Sharing stories of Imperial's community





ROYAL RECOGNITION Professor Bloom among those honoured by the Queen PAGE 3



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Graduate
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IMPERIAL BRAZIL FORUM Alexandre Strapasson builds bridges with Brazil PAGE 11



EDITOR'S CORNER

Fresh start

Over the last few weeks coffee point conversations across the College have focused on making, breaking and re-instigating New Year's resolutions. With the Olympic Games drawing closer and images of six-packed athletes wallpapering London, it's no wonder that getting fit or fitter is at the top of many people's agenda. This month my respectable gym-regime was put to shame when I interviewed a troupe of Imperial's student Olympic hopefuls, including a fencer, rower and water polo player, and heard about their endurancetesting, punishing routines, including one method aptly called 'insanity training'. See issue 243 of Reporter, published on 16 February for the full story. I came away full of awe at their dedication to succeed and inspired to make my own resolution - to push myself a little harder on the cross trainer. I'm under no illusion that New Year's resolutions last forever, - indeed my attempts to curb my caffeine addiction failed at the first sight of Starbucks in 2012, but there's something nice about using the miserable month of January to push yourself to do better. EMILY ROSS-JOANNOU, EDITOR

Reporter is published every three weeks during term time in print and online. The next publication day is 16 February. Contact Emily Ross-Joannou: ⊠ reporter@imperial.ac.uk

Global tides

Four national teams of triathletes will be training at Imperial's swimming pool in Ethos during the Olympics.

The British, Swiss, French and Australian Olympic teams have all booked sessions during the period 31 July-7 August to use the 25 x 12-metre pool, in the run up to the women's triathlon on 4 August and the men's triathlon on 7 August. Both events will be held in Hyde Park.

"We are very much looking forward to hosting a range

of triathlon national teams during their Olympic stay in London and are delighted that they have chosen to use our facilities," said Neil Mosley, Assistant Director of Commercial Services.

"Staff and students will witness a truly international mix of coaches and athletes in action if they're using the Ethos pool during the Olympics. The triathlon sporting event has grown significantly in popularity over the last few years and we hope that our Olympic visitors will boost participation amongst Imperial students."

In some sessions, only a couple of lanes will be used by the Olympians, so staff and students



will be able to swim alongside them, while in other sessions all five lanes will be reserved for Olympic training.

The Japanese fencing, volleyball and badminton Olympic teams, who will be staying at Imperial in the run up to the games, will also have access to the pool, as well as to other facilities in Ethos and on the South Kensington Campus.

-EMILY ROSS-JOANNOU, COMMUNICATIONS AND DEVELOPMENT

New Principal of the Faculty of Medicine

One of Ireland's foremost medical leaders is to become the Principal of the Faculty of Medicine. Professor Dermot Kelleher, a pioneer in the field of immune response and infectious disease, will join the College on 1 July 2012, taking up his new appointment on 1 October 2012.

Currently Vice-Provost for Medical Affairs and Head of the School of Medicine at Trinity College Dublin, Professor Kelleher graduated in medicine from Trinity in 1978, and subsequently completed specialist training in gastroenterology. His research considers the immune response to many of the leading causes of gastrointestinal infectious disease worldwide, and he is the author of over 200 publications and 14 patents. Professor Kelleher is also a Fellow of the Academy of Medical Sciences, Royal College of Physicians, Trinity College Dublin, and the American Gastroenterology Association.



Welcoming the appointment, the Rector said: "Professor Kelleher is an international leader, with an outstanding record in academic medicine. His emphasis on translating research from the laboratory to frontline patient care fits perfectly with Imperial's vision."

Professor Dermot Kelleher said: "Imperial's Faculty of Medicine has an international reputation for excellence and a global reach that I have long admired. I share in its vision for research translation, both through its activities in the Academic Health Science Centre and the future partnership with health providers in north west London. I look forward to collaborating with all colleagues across the College."

Professor Kelleher succeeds Professor Sir Anthony Newman Taylor who has been Principal since December 2010.

-SIMON WATTS, COMMUNICATIONS AND

Imperial College London

Are you doing something for

National Science and Engineering Week?



National Science and Engineering Week 2012 takes place 9-18 March and is a great opportunity to engage public audiences with your research. If you are getting involved, whether by talking at a school, running a science show, or through another route, the College would like to help promote your contribution.

To publish details of your activities in the College's programme of events for the week contact k.weeks@imperial.ac.uk.

Knighthoods and a CBE for Imperial researchers

An obesity researcher and a mathematician from Imperial have been awarded knighthoods, and an Imperial chemist has received a CBE, in the 2012 New Year Honours.

Professor Sir Stephen Bloom (Medicine) was made a Knight Bachelor for services to medical science. He is Head of the Division of Diabetes, Endocrinology and Metabolism and Chair of the Section of Investigative Medicine at the

College. He is also Lead Clinician for Clinical Chemistry at Imperial College Healthcare NHS Trust.

He joined the Royal Postgraduate Medical School in 1974, and became part of the Imperial College School of Medicine in 1997.

Professor Sir Simon Donaldson (Mathematics) was named a Knight Bachelor for services to mathematics. Professor

Donaldson has been Professor of Mathematics at Imperial since 1998 and works on geometry, algebraic geometry and the topology - the study of shapes.

Professor David Phillips (Chemistry), who was awarded an OBE for services to science education in 1999, received a CBE for services to chemistry. Professor Phillips is currently the Senior Science Ambassador for Schools, and Professor **Emeritus and Senior**

> Research Investigator at the College. He is also the President of the Royal Society of Chemistry.

> > Rector

Sir Keith O'Nions said: "The honours for Steve, Simon and David mark a great start to 2012 for Imperial. Steve, as a clinical academic, has pioneered new approaches to tackling obesity and diabetes one of the major societal challenges of the day.



Professor Stephen Bloom. who was recognised in the 2012 New Year Honours.

Simon is one of the great mathematicians of our age whose work is extending our understanding of the world around us, and David is a leading figure in chemistry in the UK, who is also dedicated to enabling children and the wider public to share his enthusiasm for science and understand why it is so important."

-LAURA GALLAGHER AND SAM WONG, COMMUNICATIONS AND DEVELOPMENT

To read the reactions of the staff honoured and the list of alumni recoanised in the New Year's list, visit: http://bit. ly/2012honours

Planning submission for new campus

The College submitted a planning application in **December to the London** Borough of Hammersmith and Fulham for its masterplan to develop the former BBC site on Wood Lane. The masterplan includes proposals for world class teaching and research facilities, space to support the College's technology transfer activities, postgraduate facilities, conference and leisure amenities, new homes and a publicly accessible square.

The submission follows extensive consultation with the borough and members of the public over the summer and autumn 2011, including meetings with local residents' groups and exhibitions held in public spaces and on Imperial's South Kensington and Hammersmith Campuses, led to refinements to the original proposals.

John Anderson, Project Director for Imperial West, said: "Imperial West will enable the College to expand upon the success of its South Kensington site to create a second, open access academic campus that provides the physical infrastructure for world class research and teaching, leading edge facilities for



>> **NEWS**update

business development and technology transfer, and to create an attractive environment to live and work in."

"We have consulted widely with the planning authorities and local residents and this process has helped inform the basis of our planning application. We have refined the designs of the residential building, the academic health building and the office building to respond positively to our stakeholders' comments."

The first phase of the development, which is already underway, with 606 postgraduate studios and nine homes for key workers already under construction and due for completion in August 2012. A decision on the planning submission is expected in the spring.

-SIMON WATTS, COMMUNICATIONS AND DEVELOPMENT

Visit www.imperial.ac.uk/ newcampus

Chinese Ambassador visits

"The honours

for Steve, Simon

and David mark

a great start

to 2012 for

Imperial"



The Chinese Ambassador paid on 18 January, to find out more about the College and to share his insights on his country's current and future priorities, Mr Liu

Xiaoming, who has been ambassador to the UK since 2009, met Chinese staff and students, and researchers with academic links to China, before touring the Imperial Incubator, which houses early-stage technology companies spun out of research at the College, Mr Xiaoming then delivered a special lecture on the importance of innovation in China's economic and social development. See Reporter online for the full story.

Imperial-NTU degree

The course to be offered by the Lee Kong Chian School of Medicine, the medical school in Singapore run jointly by Imperial and Nanyang Technological University (NTU), was approved by Imperial's Senate in December 2011 and the School's Academic Affairs Committee in January 2012. The curriculum is now progressing through NTU's committee structures. The Imperial-NTU Bachelor of Medicine Bachelor of Surgery degree will first be delivered in August 2013.

www.lkcmedicine.ntu.edu.sg

Pro Rector appointed V-C of Brunel

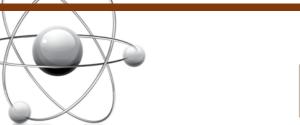
Professor Julia Buckingham, currently Pro Rector (Education and Academic Services), has been appointed the next Vice-Chancellor of Brunel University and will take up duties on 1 October 2012. Commenting on the appointment the Rector, Sir Keith O'Nions, said: "Iulia has made huge contributions to the College over the last 15 years. She has led and championed many initiatives to improve the quality of education at Imperial, including launching our Education Days, which have put the spotlight on innovation in teaching. We wish her every success in her new role.'

Recladding Mechanical Engineering Annex

Construction work has begun on recladding the Mechanical **Engineering Annex which** fronts on to Exhibition Road. The £1.19 million project will improve the appearance of the existing building and the heat it retains, delivering energy savings that will help to reduce the College's carbon footprint. The work is expected to be completed in time for the London 2012 Olympics.

media mentions

-COLIN SMITH, COMMUNICATIONS AND DEVELOPMENT



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METRO ▶ 6.12.2011

Eyeing up the possibilities with novel technology



Researchers have developed novel technology that could enable people with disabilities

to control wheelchairs with the blink of an eye, reported *Metro*. Scientists at Imperial have developed prototype eye-tracking technology that enables the user to navigate around a computer without a mouse to play a computer game. They now aim to incorporate this functionality into a wheelchair to improve mobility for people with disabilities. "The user interface traces out the path and if that's the path you want to drive, you would simply wink twice with your left or right eye and the wheelchair will start driving," said Dr Aldo Faisal (Bioengineering). He believes the wheelchair technology could help more than five million Britons with conditions such as arthritis.

CNN ► 14.12.2011

Hints of Higgs

Scientists say they have found hints of the existence of the Higgs boson, a subatomic particle thought to be a fundamental building block of the universe. The researchers announced that two independent experiments at the Large Hadron Collider (LHC) in Geneva have turned up signs of the particle. "The Higgs boson is the last missing piece of our current understanding of the most fundamental nature of the universe," Martin Archer (Physics) told CNN. "Only now with the LHC are we able to really tick that box off and say: 'This is how the universe works, or at least we think it does."



BLOOMBERG NEWS ▶ 20.12.2011

Bidding spectrum widens with fresh plans for sale of frequencies

Italy may raise more than two billion euros (\$2.6 billion) from the sale of television frequencies, in an effort to reduce borrowing costs amid Europe's debt crisis, reported Bloomberg News. Prime Minister Mario Monti, who won broad backing in December 2011 for his 30 billion-euro emergency budget in the parliament's lower house, withdrew plans to assign six digital frequencies for free after consumer and industry groups called on the government to sell the spectrum to the highest bidders. An auction "could be a Big Bang for Italy's TV industry and finally open it up to real competition," commented Professor Tommaso Valletti (Business School).

THE GUARDIAN ▶ 28.12.2011

Healthcare trial begins

Doctors in the USA have drawn up plans to sequence the full genetic code of thousands of people in a pilot project to personalise their medical care, reported The Guardian. Volunteers taking part in the project will have all six billion letters of their genome read, stored and linked to their medical records to help doctors prescribe more effective drugs and other therapies. The trial will help physicians work out how best to store a person's genetic code, explain the information to patients and direct their medical care. "This is a trend that will definitely be found across the developed world in the coming two to five years," commented Professor Tim Aitman

(Life Sciences).

awards and honours

MEDICINE Shamji wins best allergy abstract



Dr Mohamed Shamji (NHLI) won an award for his abstract at the World Allergy Congress held

in Cancún, Mexico in December 2011. The research presented by Dr Shamji at the conference identified a way to monitor the effectiveness of immunotherapy for the treatment of hayfever. Immunotherapy, which involves

repeatedly exposing an allergy sufferer to gradually increasing doses of allergen, is increasingly popular as a treatment but it is currently difficult to measure its effect.

CAREERS ADVISORY SERVICE

Careers Advisory Service team praised

The Careers Advisory Service (CAS), pictured right, has received the national Matrix Standard certificate in recognition of the careers guidance services it offers to students and alumni of the College. Imperial was praised for its varied programme of workshops and seminars, drop-in sessions for students, extensive resources library and awardwinning website. The Matrix



Standard looked at eight different elements of the CAS, from how aware people are of the service to the quality of the information available. For more information about the CAS please visit www.imperial.ac.uk/careers

Seven EPSRC Fellowships

Dr James Bull (Chemistry), Drs Amelle Zair and Piers Barnes (both Physics), and Dr Thomas Reddyhoff (Mechanical Engineering) have

been awarded Career Acceleration Fellowships by the Engineering and Physical Science Research Council (EPSRC). Each will receive a five-year grant to support them at the early stages of their career, with the expectation that they will have established an independent career of international standing by the end of the award. EPSRC has also made awards to Dr Fernando Bresme (Chemistry), Dr Simon Colton (Computing) and Professor Claire Adjiman (Chemical Engineering) in the form of Leadership Fellowships. The Fellowships provide funding for up to five years and aim to help academics develop into international research leaders, who can set and drive new research agendas. Read the full story at: http://bit.ly/EPSRCawards



Scientists reassess weight loss surgery for type 2 diabetes

Weight loss surgery is not a cure for type 2 diabetes, but it can improve blood sugar control, according to a new study published in January's issue of the British Journal of Surgery. Whereas some previous studies have claimed that up to 80 per cent of diabetes patients have been cured following gastric bypass surgery, Imperial researchers from the Department of Medicine found that only 41 per cent of patients achieve remission using more stringent criteria.

The research was funded by the National Institute for Health Research (NIHR) Biomedical Research Centre, which was awarded to Imperial College Healthcare NHS Trust and Imperial College London.

Obesity is a major risk factor for type 2 diabetes. Worldwide, 80 per cent of people with type 2 diabetes are overweight or obese at the time of diagnosis. The new study revis-

"It's clear that weight loss surgery, particularly gastric bypass, has a significant beneficial effect on glucose control"

ited previous data on 209 patients with type 2 diabetes to evaluate the effectiveness of three types of weight loss surgery using

new criteria set out by the American Diabetes Association. Researchers found that the remission rate was 41 per cent for gastric bypass, the most effective type of surgery.

"Using the new criteria, we don't get such eye-catching figures as some that have been quoted in recent years," said Dr Carel le Roux (Medicine), who led the study. "But it's clear that weight loss surgery, particularly gastric bypass, has a significant beneficial effect on glucose control.

"Diabetes is a chronic, multisystem disease. Stomach surgery may not mean that patients can stop taking diabetes medication, but surgery and medication together achieve better results than either treatment on its own."

-SAM WONG, COMMUNICATIONS AND DEVELOPMENT

Iron levels in blood give clue to clot risk

People with low levels of iron in the blood have a higher risk of dangerous blood clots, according to research by Imperial scientists published in the journal Thorax on 15 December.

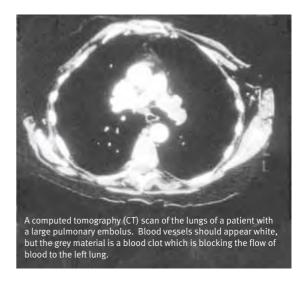
Annually, one in every 1,000 people in the UK is affected by deep vein thrombosis - blood clots in the veins. These can be fatal if the clot travels into the blood vessels of the lungs. Although some risk factors for blood clots are recognised, such as major surgery, immobility and cancer, often there is no clear reason for a clot.

To identify new risk factors, researchers analysed blood from 609 patients with hereditary haemorrhagic

telangiectasia (HHT), an inherited disease of the blood vessels. Previous research had found that HHT patients have a higher risk of blood clots, but the reason for this was unclear.

The scientists looked for differences between the patients

who had blood clots and those who did not. The study found that low levels of iron in



the blood were a strong risk factor for blood clots. Patients who took iron supplements did not have

> higher risk, suggesting that treatment for iron deficiency can prevent blood clots.

Dr Claire Shovlin (NHLI) said: "There are small studies in the general population which would support these findings, but more studies are needed to confirm this. If the finding does apply to the general population, it would have important implications in almost every

area of medicine."

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-SAM WONG, COMMUNICATIONS AND DEVELOPMENT



New pike species doing too well in Italy

Researchers working in Italy including Dr Diego Fontaneto (Life Sciences) have called for wildlife managers to stop relocating freshwater pike (pictured above) from European countries north of the Alps to Italian freshwaters, where they are caught by anglers. This follows the discovery that fish from these geographically separate regions belong to two distinct species - they were previously thought to have been members of the same species.

Pike are easily recognisable by their elongated torpedo-like body shape and are a popular choice for anglers across Europe, North America and Asia. Heavy fishing has caused populations to dwindle in some areas, a problem that is being solved by replacing them with juvenile fish from more healthy populations.

The researchers have called to ban this practice in Italy, since the northern pike species native to central and northern Europe is potentially in danger of driving the native southern pike species to extinction.

Until now only one species of pike was known to live in Europe Esox lucius, which is also found in North America and Asia. Its taxonomy has remained unchanged since it was described by the zoologist Linnaeus in 1758. Dr Fontaneto, co-author of the research, said: "The discovery of a new species of a large fish in Europe is a rare surprise. Most new discoveries of fish species are of small, obscure and understudied fish that live only in geographically remote and inaccessible small lakes."

Dr Fontaneto and his colleagues from the University of Perugia have been studying the characteristic grey-green stripes and spots on the pikes' scales. These broken patterns camouflage the fish against aquatic vegetation, hiding them from underwater prey and predators on the land, and are one of the physical characteristics that differ between the newly distinct species.

-SIMON LEVEY, COMMUNICATIONS AND DEVELOPMENT

>> FEATURE focus



Super scholars

When sixth former Vaishali Vora opened the email last August telling her she'd received a **Rector's Scholarship** to support her medical degree, she felt both relieved and excited as she realised she'd get the Imperial experience she'd always dreamed of – without having to worry about money. Reporter investigates why scholarships are becoming increasingly important and how more scholarships were awarded last year than ever before.

Last summer as the debate on the new tuition fee arrangements settled, Imperial signalled its commitment to support students who win a place at Imperial but may struggle with university costs, by launching the Rector's Scholarship Fund, alongside its financial aid package.

With the increase in tuition fees to £9,000 a year, the College needs to be even more competitive to attract the best Home and EU students regardless of their means, explains Rector Sir Keith O'Nions: "Scholarships are an integral part of this. Today we need to be able to offer students not only fantastic career prospects, access to teachers of the highest standing, world class facilities and an excellent campus environment,

but we also have to provide students with the means to make the most of their time here".

Rector's Scholarships provide £1,000 for undergraduates per year, £10,000

We have to

provide students

with the means to

make the most of

their time here"

for MSc students and £15,000 per year for PhD students for the duration of their courses.

In 2011 the College focused its fundraising activities on generating philanthropic support for Rector's Scholarships, targeting

Imperial's network of 150,000 alumni and its longstanding non-alumni supporters. The Rector has been at the fore of the

scholarships campaign, asking undergraduates to get involved with two fundraising telethons, writing to all alumni for the annual direct mail appeal and travelling across the globe to meet alumni and speak to them directly about the need for scholarships.

To support these in-house efforts, the College also set up a fundraising board for scholarships last year. Its members include alumni and donors who have volunteered to work on behalf of the College, using their networks around the world to get further support for scholarships.

The College's fundraising team and volunteers also try to secure major endowed gifts, as well as gifts from foundations and corporations. In 2010-11 donations to the full suite of philanthropically funded scholarships ranged from £1 to £845,000 and the total given to scholarships in major gifts (of £50,000 or more) was £2.9 million.

As a result of the direct mail campaign, telethons and other mass appeal initiatives, the College secured £673,176 of philanthropic contributions to the Rector's Scholarships Fund during the 2010-11 financial year. Donations like this enabled the Rector's Scholarship Fund to award 61 undergraduate scholarships (three times more than in 2010-11), 20 Master's scholarships (five times more than in 2010-11) and four PhD scholarships (double the number awarded in 2010-11). As for this financial year (running August 2011– July 2012), by the end of December £310,982 had already been committed to the Rector's Scholarship Fund by 1,197 donors responding to mass appeals, and the Division of Communications and Development will continue to fundraise throughout 2012.

Donors contribute to the Rector's Scholarship Fund for a number of reasons – some say they give in memory of a partner who studied at Imperial, others said they received scholarships when they were students and are aware of how much the support helped them, while others simply want to support Imperial's mission for excellence. "I donated to Imperial as I wanted to thank the College for the scholarship I received in 2003 to support my Materials Science and Engineering degree," explains Malaysian alumnus, Gary Lee. "My years at Imperial gave me many great memo-

> ries and some amazing contacts - the whole experience is something I'll always value."

"We've had a wonderful response from our alumni and donors," says Tom Miller, Director of Communications and Development. "In 2009-10 the College had 1,848 donors. But this more than doubled in 2010-11 to

3,851 donors. Sir Keith has been instrumental in leading the appeals and encouraging alumni to support the College," he added.



Face to face

Last year the Rector travelled to China, Hong Kong, India, Taiwan, Malaysia, the USA and Singapore to engage with alumni, and current and prospective donors, seeking support for the Rector's Scholarship Fund.

"There's huge merit in going to meet people face to face," says the Rector. "The meetings we arranged gave alumni a chance to reflect on their time at the College. Hearing first-hand how the College has developed and what we need to do to continue to grow, many were galvanised into action on our behalf."

Since the Rector's trip to India, the alumni association has started to develop a scholarship scheme to support talented Indian students studying at Imperial.

"What constantly amazes me is how similar our alumni are, around the world," says the Rector. "Whether they have just retired or graduated a couple of years ago, they share the same affection and enthusiasm for the College and the desire to see others benefit from the same educational experience that they were entitled to."

Rector's Scholar Vaishali Vora has just started the second term of her medical degree and reflects on her studies so far: "My favourite experiment has been the blood cell practicals – we all got to experience drawing blood from each other, then we analysed the samples. It was the first time we'd had to handle blood, which made everyone so nervous and excited!" Since she returned from the winter break, Vaishali has been enjoying being taught about endocrinology by Professor John Laycock. "He is so enthusiastic and undoubtedly one of the reasons why the endocrinology course has been so interesting. He makes jokes along the way, relating it all back to the subject, which really helps the information stick," she says.

Tom explains that donors who have given to the Fund see their gifts as investments. "From speaking to donors who have committed to donate an

amount every month, we frequently hear that they see it as a chance to give someone opportunities that they wouldn't have otherwise had," he says.

In addition to giving students access to a world class education, the scholarships allow them to take full advantage of the College experience including

> extra-curricular events and volunteering work. Last term Vaishali got involved in a week of charitable activity and helped to raise around £42,000 for orphans and other needy children around the world by supporting Islamic Relief's Orphans Campaign. "It was fantastic to meet lots of new people and to dress up as Elmo and walk down the streets of London, rais-

ing money for such a good cause," she says.

On-going campaign

Our alumni

desire to see others

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experience that they

Those financially eligible for Rector's Scholarships always outweigh the number of awards available and, over the next few months, a College scholarships panel will have the unenviable job of selecting which of the talented pool of students will be offered support for 2012-13 based on academic merit. The on-going scholarships campaign aims to ensure that the process of identifying the next generation of Rector's Scholars will be a recurring milestone for years to come.

Tom explains that the long-term objective of Imperial's development activities is to build up an endowment for the future, so that Imperial can compete with the best universities worldwide by offering the same level of scholarships and financial aid packages. Achieving this would mean that the most talented students, like Vaishali, regardless of their financial background could benefit from the educational and student experience offered by Imperial.

-EMILY ROSS-JOANNOU, COMMUNICATIONS AND DEVELOPMENT

For more information about the Rector's Scholarship Fund. visit: http://bit.ly/rectorsscholars

What does being a Rector's Scholar mean to you?



"Imperial is the place where I want to achieve my ambition of becoming a race car aerodynamicist, and where I can spend some of the best years of my life."



"This scholarship means a lot to me as it will help me finance my studies during this difficult financial climate. It is encouraging to know that there are many people that are very supportive of students."



"I've benefited from Imperial's clubs and societies - from fencing to beekeeping to the cheese society there's something for everyone and I've joined all three!"



mini profile

Jeremy Pitt

Heading off potential threats to the UK's critical infrastructure by developing new technologies and improving the way that organisations communicate with one another is the focus of Dr Pitt's role as Associate Director of the Institute for Security Science and Technology, which he took up last September. He talks to Reporter about his field of work.

What does your role involve?

I act as the contact point for researchers across the College who are working on ways to better protect the nation's critical infrastructure. This includes physical infrastructure for water management, the electricity grid

and transportation, and also organisational infrastructure and knowledge resources such as world do we digital libraries. We hope our new collaborations will ultimately lead to new pro-

jects that will impact on policy making in the UK.

What would constitute a major threat to the UK's infrastructure?

Many people may regard terrorism as a major threat to the UK and think in terms of increasing surveillance to improve safety. However, a more immediate and insidious threat to our infrastructure is present



in the effects of climate change. As a result of globalisation, the world is increasingly interconnected, which means that a localised climate problem could have ramifications regionally and even globally.

Give me an example of a project that you are working on to protect critical infrastructure?

We have been working on a flagship initiative called Future

We should

ask ourselves:

What sort of

our kids?"

Information and Communication Technology that promotes the idea that organisations share critical information more freely want to leave for to be inclusive and proactive with their crisis management plans.

What drew you into this line of research?

Serendipity mainly though for me, sustainability has always been a key issue. I genuinely think that as parents, we should ask ourselves: What sort of world do we want to leave for our kids? -COLIN SMITH, COMMUNICATIONS AND DEVELOPMENT

Olympic torch relay

On 1 December, Professor Alison McGregor (Bioengineering) attended an event held in London for higher education staff and students taking part in the Olympic flame torch relay in July. Each participant will 'run' the famous flame for 300 metres. Alison reports on her experiences at the event.

"The Higher Education Gala Dinner was my chance to meet the two students, Franca Hoffmann (Mathematics) and Kaushali Trivedi (Medicine), who will be joining me in representing the College in July and running with the torch for 300 metres each. The London traffic extended our journey time to the venue and gave us a chance to reflect on why we had been nominated. For Kaushali, a fifth year medical student, it reflected her longterm commitment to a charity She runs called KEEN London a playgroup for children with a range of special needs. Franca, who is currently in France as part of her mathematics degree, set up a mathematics camp run by a small team from Imperial for high school students in Accra, Ghana, and contributes actively to a range of College societies



including two orchestral groups. For myself, I think it was for a range of student support activities, from treating injuries in our Boat Club in years gone past, to helping students organise conferences in both science and sport.

The event began with a champagne reception followed by dinner. Between courses we were inspired by film clips and the personal experiences of previous Olympic torch runners. We had an amazing talk from Sally Gunnell - an Olympic medallist at the 1992 Barcelona games who even let us try on her gold medal. By the end of the evening we certainly felt a part of what is going to be one of the largest worldwide celebrations!"

For the full article see Reporter online

SCIENCE FROM SCRATCH

Telomeres

The information contained in our genes is arranged within each cell of the body in structures called chromosomes. The

tips of chromosomes are called telomeres. Telomeres can be pictured as disposable parts at the end of chromosomes that are progressively

> lost every time a cell multiples. When telomeres reach a certain length the cell stops multiplying and gets destroyed. This control mechanism is important in preventing diseases like cancer. Without the telomeres shortening, a cell could become immortal and keep producing more identical cells to generate a tumour. Tumour cells are able to replenish their telomeres by switching on a protein called telomerase, which is normally found in cells that need to reproduce extensively, like cells of the immune system. Blocking the activity of telomerase represents

a new approach for treating cancer and molecules that can inhibit its action are currently being tested.

-ROBERTA SOTTOCORNOLA, RESEARCH ASSOCIATE (LIFE SCIENCES)







INVENTOR'S CORNER

Active innovation

Dr Simos Evangelou, pictured above, holds a joint lectureship in the Departments of Mechanical Engineering and **Electrical and Electronic Engineering** and, over the last four years, has been working with Dr Daniele Dini (Mechanical Engineering) to develop a new suspension system for road vehicles.

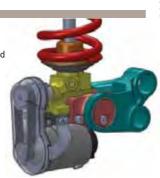
What are you working on?

The suspension system we've developed combines the performance improvements of fully active systems with the safety and economy of passive systems. A passive system is what you would find in most road vehicles. An active system includes components which react to an external stimulus and can alter certain parts of the suspension to react favourably to road conditions.

How is your system different?

Because of the nature of a passive system, car suspension systems must be built to work in most conditions, which can lead to shortcomings such as understeering. An active suspension system can, however, react to external information and correct these shortcomings to deliver improved handling, comfort and safety. We have sought to develop a system that retains most of these benefits, while reducing the extent of the active components and, thus, the complexity, cost and maintenance requirements.

Dr Evangelou's suspension system which could be used in almost all road vehicles to improve handling, comfort and safety



How does it work?

Our system uses an electrical mechanism called an actuator to vary the geometry of the passive element of the suspension system. According to the studies we've done, this mechanism can be smaller than

"This mechanism can be smaller than in fully active systems, which means there is a lower power requirement"

in fully active systems, which means there is a lower power requirement. In addition, we can integrate the system with current passive

suspension systems. This reduces the cost and complexity of the design and means that the system is fail-safe, which will offer a more attractive proposition to vehicle manufacturers than a fully active system. We are in the process of developing prototypes to demonstrate our results.

-GAVIN REED, IMPERIAL INNOVATIONS

Book review

The second edition of The Mechanics of the Circulation written by Emeritus Professor Colin Caro (Bioengineering), pictured, has been republished, 33 years after it was first printed. Professor Ross Ethier, Head of the Department of Bioengineering, reflects on its importance to the field.

"The first edition of the book was my faithful companion when I became interested in thermodynamics 20-plus years ago. It was, and continues to be, the standard reference text for those who seek to understand both physical principles of blood flow, and the biology and physiology of the cardiovascular system. It was distinguished by clear writing and a holistic view of the



field. A measure of the impact of the book is to see how many colleagues at leading universities have a copy on their bookshelf. I've seen it in offices from Japan to Switzerland! The second edition will introduce an entire new generation to the field."

For more information: www.cambridge. org/9780521151771

Student blogger Reuben on Willis Jackson Hall's **Christmas dinner:**

blog

"SIIIIIILLLEEEENTTT NIIIIIGGGHHHT HOOOOLLLLYYYY NIIIIGGGHHTTT." Cover your ears! It must be the annual

Holbein and Willis Jackson Hall **Christmas Dinner!** Each year the Holiday Inn that towers over Kensington (which is less tacky than it sounds) greets a

large group of students from my hall of residence, all keen to gorge themselves on as much Christmas food and wine as possible. A buffet was the order of the day. This catered perfectly for a range of needs: from those few who wished to elegantly enjoy a small plate of food to my rugby playing friend Sean who, like a good scientist, wished to investigate just how much protein and carbohydrate one can fit on a plate (he repeated this experiment several times).'

www.imperial.ac.uk/campus_life/studentblogs



Royal College of Art student exhibit

A Project for the Sun is a new exhibition in the Blyth Gallery on the South Kensington Campus featuring work from seven students of the Royal College of Art's painting department: Christian Camacho Reynoso, Seokyeong Kang, George Little, Oscar Murillo, Hector Castells, Lucas Price and Marianne Spurr. Drawing on their studio interactions and conversations over the last year, the artists explore their relationships, and the way in which images and objects may lose, gain and shift meaning through circulation, juxtaposition and contextualisation.

Visit the exhibition in the Blyth Gallery, Level 5, Sherfield Building, until 27 January



Staff featured in this column have given many years of service to the College. Staff listed below celebrate anniversaries during the period 1 January-14 February. The data is supplied by HR and is correct at the time of going to press.

20 years

- · Dr Esat Alpay, Senior Lecturer, Engineering
- · Professor Yang Chen, Professor of Mathematical Physics, Mathematics
- Dr Parviz Habibi, Clinical Reader, Medicine
- Ms Fabienne Laperche, Secretary, Mechanical Engineering
- Dr Felix Munkonge, Research Fellow, NHLI
- Professor Peter Nixon, Professor of Biochemistry, Life Sciences
- Mr Kevin Palmer, Stores Operations Manager, Catering
- Mrs Sharon Sheenan, Tuition Fee Administrator, Finance
- Dr Barbara Shollock, Senior Lecturer, Materials
- Dr Andrew Walton, Senior Lecturer, Mathematics
- · Professor Xuesong Wu, Professor of Applied Mathematics, Mathematics

30 years

• Professor Simon Thom, Clinical Professor of Cardiovascular Pharmacology, NHLI

Engineer beats trainee surgeons in hip replacement competition

On 5 December 2011, the Musculoskeletal (MSK) Lab ran an acetabular (hip joint) science and technology workshop on the Charing Cross Campus. The event involved **Professor Justin Cobb (Surgery and Cancer)** and Mr Derek McMinn, an orthopaedic surgeon from BMI Edgbaston Hospital in Birmingham, who discussed clinical applications and associated issues of hip surgery, with five companies and 20 trainees, attending to develop their surgical knowledge.

The morning session consisted of presentations from B Braun, Ceramtec, JRI, Mathys and Stryker, who gave an overview of their products and after lunch the attendees took part in practical activities with a competitive edge to give them hands-on experience of the components.

Each company had a workstation with a prosthetic hip and dry bone, into which the trainees had to impact acetabular cups (part



Professor Cobb giving some advice on best practice for positioning a hip joint during surgery.

of an artificial hip) in simulated surgery, using a robotic arm and navigation tool.

The trainees were scored on their accuracy in the surgery and prizes were awarded to James Wong, who is work-

> ing at Chase Farm Hospital, and Alvin Chen (Surgery and Cancer) but the winner was Dr Susannah Clarke (Civil and Environmental Engineering).

Zoe Williams, the lab's Public Engagement and Patient Involvement Manager, said: "It was a close run competition

and little did the attendees expect that the winner would be an engineer. Susannah is working on a hip project in the MSK Lab."

For more information see: http://bit.ly/Msklab

top tips



The key to creative research

by Elaine Walsh, Head of Postgraduate Development, Graduate School

Flaine Walsh recently won external funding to research the factors most likely to result in successful and creative research in science and engineering. Based on interviews with researchers, here is her advice for supervisors and principal investigators.

You can download three good practice guides specially written for supervisors/PIs, for postdocs and for PhD students from: http://bit.ly/ creativityinstemresearch

Elaine's creativity-boosting tips:

- 1. Clearly negotiate the balance of support and freedom that you offer your team members. Remember that this shouldn't be a one-off decision – needs may shift considerably during the course of PhD programmes or projects, so review the balance regularly.
- 2. Establish a 'there are no silly questions' policy for all your group meetings and work discussions. That will help everyone to feel confident in contributing their ideas. Remember that unworkable ideas can be the catalyst for breakthroughs.
- 3. Optimise communication by creating a safe, open and democratic environment. For example, you can rotate the 'chair' to reduce hierarchy, or organise refreshments to help everyone to relax.
- 4. Remember that many great ideas originate during informal exchanges, so encourage your team to spend time together chatting, perhaps over coffee or lunch.
- 5. Imperial is full of successful researchers leading world class projects, but failure is a frequent occurrence on the way to success. Encourage colleagues to see setbacks as a valuable and interesting learning opportunity for all.
- 6. Encourage researchers to look out for interesting results and unexpected turns in their work and to share these with you, even when they are not sure what they mean.

☑ If you have some top tips you would like to share with staff, send your ideas to reporter@ imperial.ac.uk



Little did

the attendees

an engineer!"

expect that the

winner would be

moving in. moving

Welcome new starters

Dr Anthony Abbott, Chemical Engineering Miss Samia Akthar, NHLI Miss Paisley Ashton, Environmental Ms Qian Bai, Mechanical Engineering Mr Elunge Banza, Imperial College Dr Alice Bell, Humanities Miss Yogeshwari Bhadresa, NHLI Mrs Joy Blackburn, NHLI Mr Guido Bolognesi, Chemistry Dr Leron Borsten, Physics Mr Andrew Bosman, Sport and Leisure Mrs Amanda Bravery, NHLI Mr Michael Brown, Public Health Dr Rajpal Burmi, Surgery and Cancer Mr Ian Bush, Physics Mr Ozan Cakir, Bioengineering Mr Martyn Casey, Human Resources Miss Lida Castillo Rondon, Finance Mr Enrique Castro Sanchez, Medicine Dr Anil Chandrashekran, Surgery and Cancer Dr Hyeygjeon Chang, Chemical Engineering Dr Poonam Chouhan, Public Health Dr Ciara Clarke, Faculty of Medicine Miss Laura Coates, Surgery and Miss Hannah Cockerill, Business Dr Dana Cohen, Life Sciences Dr Stuart Cook, Materials

Mr Christopher Cook, Faculty of

Professor Paul Curtis, Aeronautics

Mrs Karen Davies, Medicine Mr Robert De Vriese, Public Health Ms Nadia Drews, Educational Quality Dr Ahmed El-Laboudi, Medicine Miss Rita Figueira, Medicine Dr Christopher Ford, Mathematics Dr Simon Foster, Physics Miss Emma Francis, Faculty of Medicine Ms Mandy Fraser, Medicine Miss Silke Fuchs, Life Sciences Mr Joel Gale, Public Health Mr Mathieu Gaudin, Surgery and Cancer Mr Zsolt Gemesi, Climate KIC Miss Tamsin Griffith, Estates Miss Cristina Guallar Hoyas, Surgery and Cancer Miss Nelia Guerreiro Cantinho, Mrs Hanaa Hafez, Library Mr Gary Hahn, NHLI Mr Mark Harrington, Faculty of Miss Rosie Hart, Human Resources Ms Salma Hassan, Medicine Mr Menashe Hazan, Aeronautics Ms Katherine Henry, Professional Development Dr Caroline Howe, Grantham Institute Mr Matthew Hughes, Chemistry Mr Martyn Hutchings, Educational Quality Office Dr Donatella Iacono, Mathematics Dr AFM Islam, Computing Mr Vuk Janjic, Computing Miss Hardeep Johal, Surgery and Cancer Dr Jill Johnson, NHLI Mr Julien Jourdan, Business School Dr Anne-Sophie Kaloghiros, Mathematics Miss Evdokia Kardoulaki, EEE Ms Andrea Karpati,

Miss Sana Kidwai, Faculty of Engineering Dr James King, Mathematics Miss Nicole King, Surgery and Mr Reinder Koelstra, Computing Dr Giorgos Kopanos, Chemical Engineering Dr Pantelis Koutroumpis, Business Dr Samuel Krevor, ESE Dr Sacheen Kumar, Surgery and Mr Michael Lancaster, Imperial College Union Dr Julian Le Rouzic, Mechanical Engineering Mr Koon Lee, Chemical Engineering Mr Georgi Lesov, Catering Services Dr Wenjun Li, Computing Mr Marcin Lignowski, Surgery and Mr Philip Liley, Finance Division Ms Kaatje Lomme, Medicine Mr Christopher Lord, Corporate Partnerships Dr Pradeep Luther, NHLI Mr Christopher Lynch, Medicine Mrs Yasmin Mallu, Medicine Dr Philip Mannion, ESE Ms Ainhoa Mariezcurrena Anton, Life Sciences Dr Matthew Markiewicz, Chemistry Mr Arran Matthews, Faculty of Medicine Mr Kieran McGourty, Medicine Miss Ellen Mcsheedy, NHLI Mr John Mole, ESE Miss Jenna Mollaney, Public Health Miss Eva Moreno, Professional Development Dr Marta Moretti, Medicine Dr Peyman Mostaghimi Qomi, ESE Dr Serge Mostowy, Medicine Miss Anna Mróz, Medicine Miss Emma Mustafa, Faculty of

Mr Adrian Mylne, Public Health Dr Nuno Nene, Mathematics Professor David Newbery, EEE Dr Allifia Newsholme, Clinical Science Miss Vanya Nikolova, Surgery and Mr Yury Oparin, Computing Mr Mike Owens, Educational Quality Office Dr Chrysoula Panethymitaki, Dr Amol Patil, Chemistry Dr Nicola Pavese, Medicine Dr Alison Pease, Computing Mr Jerzy Pental, Chemical Engineering Miss Anisha Perera, Surgery and Dr Barbara Pernaute, NHLI Dr Konstantinos Petridis, Physics Mr Georgios Petrou, Surgery and Cancer Mr James Pierson, Catering Services Mr Silviu Pistalu, Imperial College Ms Irina Polonsky, Surgery and Cancer Mr Ahmadur Rahman, Medicine Dr Narges Rashidi, Life Sciences Mr Andrew Roland-Price, Finance Mr Giulio Romano, Imperial College Dr James Rosindell, Life Sciences Dr Enrique Ruiz Trejo, ESE Mrs Michelle Ryder, ESE Mr Habib Saadi, Public Health Ms Sadia Saeed, Public Health Mr Mohammad Saidi, Library Mr Isaac Saiz, Imperial College Dr Emmanuel Saridakis, Surgery and Cancer Mr Carlo Seneci, Computing Dr Vikas Sharma, Medicine Dr Dianna Smith, Public Health Ms Lisa Smith, NHLI

Mr Bogdan Stanculescu, Library Mr Robin Stone, Careers Advisory Service Bioengineering Miss Kai Sun, Computing Mr Kogularamanan Suntharalingam, Chemistry Miss Noemi Sztaraszta, EYEC Ms Barbara Tavano, Medicine Miss Olive Thomas, Medicine Mr Andreas Thomik, Bioengineering Mr Sofor Uddin, Finance Dr Ignacio Villar Garcia, Chemistry Dr Peter Vincent, Aeronautics Dr Michael Waller, NHLI Dr Xiaosi Wang, Medicine Dr Geoffrey Watson, Medicine Mr Mark Wheelhouse, Computing Miss Harriet Whewell, Communications and Development Mr Jeff Wiltshire, ICT Mr Joel Winston, Imperial College Union Dr Him Wong, Chemical Engineering Miss Carol Wooding, Medicine Dr Jason Woolford, Chemistry Mrs Tingting Wu, Chemical Engineering Miss Jing Xu, Faculty of Natural Dr Yang Yang, Chemical Engineering Dr Christopher Yau, Mathematics Mr Omer Yaveroglu, Computing Ms Soledad Zarate, Humanities Mr Tomasz Zielinski, Sport and

The dates cover staff moving in from 28 November-4 January. For the list of staff moving on and retirements for the same period, see Reporter online. This data is supplied by HR and was correct at the time of going to press.

Building bridges with Brazil

International Office



Research postgraduate Alexandre Strapasson (Environmental Policy) worked for many years in the Brazilian federal government and shares his views with Reporter about the Brazilian educational strategy in science and technology and the creation of the Imperial College Brazil Forum, of which he is the Chairman:

"Brazil has a lack of engineers and technicians to supply the job market and, in order to tackle this, the Brazilian government has come up with a number of initiatives; for example, getting existing universities to increase their intake of students and, in some cases, building new universities.

The government's most recent initiative has been to launch a scholarship programme called Science Without Borders, which aims to give undergraduate and postgraduate students the experience of studying abroad in top-ranking universities. Its target is quite ambitious: to implement 75,000 international scholarships

in four years, of which 10,000 are expected to be at universities in the UK.

Imperial has less than two dozen Brazilian students, but this number is expected to increase in the coming years. Several academics at the College have been working on research projects with Brazilian institutions, such as the University of São Paulo and the University of Campinas. Both sides have much to offer and to benefit from collaborating, given that Brazil has strong expertise in research areas such as renewable energies, deep offshore oil, aeronautics, environmental sciences, mining, agriculture and medicine.

Last year the Brazil Forum was set up to bring together Imperial

students and academic staff who are currently working with Brazilian institutions or are interested in Brazilian issues. Everybody is welcome, regardless of nationality. The Forum aims to promote new synergies and innovation by enhancing collaboration among its members and Brazilian academic partners. The Embassy of Brazil in London, the British Embassy in Brasilia and the **Brazilian Chamber of Commerce** in Great Britain are partner institutions in the Forum. Brazil has one of the fastest growing economies in the world, and its efforts in science and technology, education and research present exciting opportunities for UK universities."

To join the Brazil Forum or to find out more see: www.imperial.ac.uk/ brazilforum



8 FEBRUARY ► PUBLIC LECTURE

Plastic electronics: excitons and solar cells

Many everyday electronic devices such as smart phone displays now rely on semiconductors built from organic molecules and polymers. These semiconductors, which

are driving the rapidly growing field of plastic electronics, are attractive materials to manufacture as they can be printed onto any surface and have made new products such as rollable displays a possibility. Professor Sir Richard Friend, Cavendish Professor at the University of Cambridge and one of the founders of the field, explains the physics behind them in the 2012 Gabor Lecture.



3 NOVEMBER ► PUBLIC LECTURE Imperial Festival

2012 – a year of Olympics, Mayan prophecy and the launch of our very own Imperial Festival! Taking place across the South Kensington Campus on 11-12 May, Imperial Festival will celebrate the achievements of our staff, and students through a fiesta of handson demonstrations, music, performance and dialogue open to the public. Whether mapping the brain or dancing a jig, this unique festival will challenge staff and students alike to communicate their work and celebrate the culture and accomplishments of Imperial with the public. To find out more visit www.imperial.ac.uk/festival

take **note**

Feedback invited on catering and amenity facilities

Staff and students are invited to offer their input to a feasibility study, which will consider how the space on Level 0 at the western end of the Sherfield Building could be optimised to provide social facilities and amenities to members of the Imperial community.

To find out more and to offer feedback, please visit: http://bit.ly/ cateringprojectsfeedback

24 JANUARY ► PUBLIC LECTURE

Engineering the future of heart surgery

Professor Gianni Angelini (NHLI)



24 JANUARY ► PUBLIC LECTURE Shareholders or patients first?

Dr Moncef Slaoui, Research and Development Chairman, GSK

25 JANUARY ► PUBLIC LECTURE **Oddities of physics**

Dr Nic Harrigan (Physics)

25 JANUARY ► SEMINAR

Kyoto protocol, the Copenhagen accord, the Cancun agreements and beyond

Professor Henry Tulkens, Université Catholique de Louvain, Belgium

25 JANUARY ► OPEN DAY

Silwood Park Campus postgraduate open day

Life Sciences Master's and PhD opportunities



26 JANUARY ► MUSIC

Lunchtime concert (South Kensington Campus)

Charles Owen on piano

31 JANUARY ► PUBLIC LECTURE Leadership under pressure

Baroness Eliza Manningham-Buller

2 FEBRUARY ► PUBLIC LECTURE

The human genome: 21st century medicine

Professor Timothy Aitman (Molecular Sciences)



2 FEBRUARY ► MUSIC

Lunchtime concert (South Kensington Campus)

Stamp Trombone Quartet

7 FEBRUARY ► MUSIC

Lunchtime concert (Hammersmith Campus)

London Tango Quintet

7 FEBRUARY ► PUBLIC LECTURE

Paving the way to a sustainable future

Ken Shuttleworth. Founder, Make



8 FEBRUARY ► SEMINAR

Cardiovascular Technology Network symposium

Speakers from the Institute of Biomedical Enaineerina

9 FEBRUARY ► PUBLIC LECTURE

Financial crises and the behaviour of government and regulators

Sadeq Sayeed, Chairman, Metage

21 FEBRUARY ► PUBLIC LECTURE

The science and engineering of intelligent systems

Professor Nick Jennings, University of Southampton



READER



Bob Cummins, Faculty Operating Officer, Faculty of Natural Sciences

What are you doing in the picture?

I am in the Maths Learning Centre in the Huxley Building. We opened the Centre last academic year, updating the old Mathematics library to incorporate a large computer suite and plenty of workspace. Now students can study there during the day or evening, and lecturers can use it for computer labs. We're proud of the Centre – getting it open was a team effort between the Faculty, the Department and Central Library staff.

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

I take Spanish evening classes as part of the humanities programme, so I would run a feature on the Department of Humanities, and encourage more staff to sign up for courses. It's possible to juggle other engagements and it's worth the effort.

Who would be your cover star?

I would do a photo of all of the brave, patient language teachers who do their best to impart some learning into us evening class people!

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



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

