## Imperial College London

reporter

Sharing stories of Imperial's community

ISSUE 262 ► 27 JUNE 2013

# Picture perfect

How Imperial's newest imaging centre is probing the secrets of the human body and mind

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ELECTRIC DREAMS Students get electric superbike round prestigious TT race PAGE 9



ENTERPRISING LEGACY A farewell to Edward Astle, Pro Rector (Enterprise) PAGE 8



REACH FOR THE STARS Major boost from Wohl foundation for outreach PAGE 2



## ... and breathe

You could almost hear the collective sighs of relief around campus this week as the exam period finally came to a close. Students marked the occasion at Imperial College Union's Summer Ball - a prohibition-themed event replete with some seriously impressive fireworks (see: goo.gl/7y5ZS). Staff have also been celebrating their achievements in shaping student life with ICU's Student Academic Choice Awards last month, and the President & Rector's Awards and Medals for

excellence this month (page 10). Imperial's recent entry into the top 10 of The Guardian University Guide, known for its focus on student experience, shows that the College is being recognised for the quality of its teaching as well as research. That will no doubt be a boon to the 3,300 prospective students visiting the College for the Science and Engineering **Undergraduate Open Days** this week. There can be few better testimonies for what is possible as an undergraduate than the team of student engineers who recently got an electric superbike round one of the world's toughest races

(page 9). ANDREW CZYZEWSKI, ACTING EDITOR

© Reporter is published every three weeks during term time in print and online. The next publication day is 1 August. Contact Andrew Czyzewski: ⊠ reporter@imperial.ac.uk

### Imperial's heritage celebrated at alumni event

Staff, students and alumni from the Faculty of Engineering paid tribute to one of Imperial's founding colleges, the City and Guilds College, at an event last month.

Over 300 people gathered at the City and Guilds College Association (CGCA) annual dinner at Mansion House on 17 May. Hosted by its President and former Head of the Department of Civil and Environmental Engineering, Emeritus Professor David Nethercot, this year's event was particularly significant for the Association, marking its 100th annual dinner. The CGCA is the Engineering alumni association.

As well as recognising the past, the dinner also gave a nod to the future. Professor Jeff Magee, Dean of the Faculty, announced that the College's Mechanical Engineering Building, which is currently undergoing extensive refurbishment work, will be renamed the City and Guilds Building at the start of the new academic year. The building stands on the site of the former City and Guilds College Building and still houses its original bells and clock.



Professor Magee said: "Imperial's reputation for engineering owes its foundation to the City and Guilds. The building's future name pays tribute to this, ensuring that this legacy is present in the world class facilities we are developing." -LUCY HANDFORD, COMMUNICATIONS AND PUBLIC AFFAIRS

## Introducing the Wohl Reach Out Lab



Imperial's Reach Out Lab has been given a major boost in its mission to spark school students' interest in science after receiving support from the Maurice Wohl Charitable Foundation.

In recognition, the lab was officially renamed the Wohl Reach Out Lab at an event on 19 June hosted by the President & Rector, Sir Keith O'Nions.

The lab is championed by Professor Lord Winston, holder of the College's first Chair in Science and Society. When it opened in 2010, the pioneering initiative was a first for the sector, providing a state-ofthe-art laboratory designed specifically to engage school children in science, technology, engineering and mathematics. Since its

launch, thousands of stu-

dents have visited the lab. Professor Winston said: "Schemes like this are vital in ensuring all children have the opportunity to really engage in science; and we're delighted that the Maurice Wohl Foundation is supporting us in this essential initiative."

Professor David Latchman, Chairman of the Maurice Wohl Charitable Foundation and nephew of the late Maurice Wohl, added: "We can think of no better place than Imperial, with its long tradition of excellence in science, from which to reach out to primary and secondary school children to imbue them with the wonders of science and encourage them to continue on this path." -LUCY HANDFORD, COMMUNICATIONS AND PUBLIC AFFAIRS

## Crick Institute on track for 2015

Research leaders have announced their strategy for the Francis Crick Institute, a new scientific centre that includes Imperial as a founding partner.

The strategy was unveiled by Nobel laureate Sir Paul Nurse, Director of the Francis Crick Institute, at a ceremony on 6 June attended by senior government ministers and the heads of the Crick's partners, including Imperial's President & Rector, Sir Keith O'Nions.

The announcement coincided with the topping out ceremony for the institute – a milestone in the construction process. The institute is due to open in 2015, when it will eventually house 1,500 leading researchers and support staff.

Scientists at the Crick will carry out biomedical research to help better understand why disease develops and to find new ways to diagnose, prevent and treat a range of illnesses, such as cancer, heart disease and stroke, infections and neurodegenerative diseases. The institute will bring together scientists from all disciplines, including clinical research, physical and engineering sciences.

The Crick is a partnership between the UK's three largest funders of biomedical research: the Medical Research Council, Cancer Research UK and the Wellcome Trust, and three leading universities: Imperial, UCL and King's College London.

Imperial's President & Rector, Sir Keith O'Nions, said: "We are delighted to be here at the topping out of the institute building, witnessing the start of an exciting new chapter for research and medical innovation.

-SIMON LEVEY, COMMUNICATIONS AND PUBLIC AFFAIRS

## Imperial West expands



Imperial has bought 11.5 acres in White City to expand the new Imperial West campus.

The College will complete the purchase from Aviva in August 2013. Combined with the land which it has bought from the BBC since 2009, the College's total landholding for the new campus will increase to 22.75 acres. The plots form a connected site on both sides of the A40.

The investment in additional land will allow the College to increase its capacity for delivering its vision for research and translation activities at Imperial West. At the launch event in March 2013, the College invited proposals from potential global partners in business, industry and academia to co-locate on the campus.

President & Rector Sir Keith O'Nions said: "We have presented a bold vision for Imperial West and the new land will allow us to undertake research, translation and commercialisation with partner organisations on an unprecedented scale for London and the UK."

The first buildings at Imperial West, which provide accommodation for 606 postgraduate students and early-career researchers, are already in use.

Design work is underway for the £150 million Research and Translation Hub, which will create facilities for 1,000 scientists and engineers, and space that could house 50 or more spin-out companies. Completion is expected in 2015.

The new Imperial West campus is a major boost to the regeneration of the White City area. Existing plans include homes, publicly accessible green space, pedestrian subways and leisure and retail facilities, alongside the creation of thousands of jobs.

-ANDREW SCHEUBER, COMMUNICATIONS AND PUBLIC AFFAIRS

### Fantastic five win Birthday Honours

Five Imperial academics have been recognised for their contributions to science, engineering and health in the 2013 Queen's Birthday Honours lists.

CBEs have been conferred on Helen ApSimon, Professor of Air Pollution Studies, and Jim Skea, Professor of Sustainable Energy. Both are from the Centre for Environmental Policy.

Professors Wendy Atkin, (Surgery and Cancer) and John Warner (Medicine) received OBEs, and Professor Neil Alford, Head of the Department of Materials and Vice-Dean of the Faculty of Engineering, was recognised with an MBE.

President & Rector Sir Keith O'Nions said: "Our staff are rightly renowned for pushing the boundaries of discovery and translating their findings to benefit the wider world. It is especially gratifying when this hard work is acknowledged through the honours system."

The five recipients were asked to share their initial thoughts on opening their letter from the Queen:

Helen ApSimon, who was celebrating her birthday at the



celebrating her birthday at the time, revealed: "We decided

to add the letters 'CBE' to the birthday cake we were icing." Neil Alford said that luckily

his 14 year-old daughter was on hand to google 'MBE' and explain exactly what it meant.

Wendy Atkin said: "It's been suggested that I should add it to my email signature, but I'm not ready for that yet."

Jim Skea wondered if his CBE might entitle him to priority service at Eastside Bar. John Warner said: "It was

unexpected and unasked for. I feel very flattered and honoured that my research and the research of my team has been recognised in this way."

-KERRY NOBLE AND SIMON LEVEY, COMMUNICATIONS AND PUBLIC AFFAIRS

## in brief

## Singapore medical school set for August opening

The first cohort of students has been recruited by the Lee Kong Chian School of Medicine in Singapore, Imperial's joint medical school with Nanyang Technological University. On 5 August 2013, the School's first 54 students will begin the innovative MBBS medical course designed by Imperial. Many of the students who had met the rigorous entry requirements took 'Hi Tea' in May to hear more about the programme, joined by Imperial staff.

#### From geek to glamour at Athene's lecture

Dame Athene Donald, Professor of Experimental Physics at the University of Cambridge gave Imperial's 2013 Athena Lecture on 13 June. In a talk entitled *From geek to glamour via a desert island – how did I get here?* she discussed her scientific work as well as her career path as a female physicist. The Athena Lectures celebrate the achievements of women in science, technology and medicine.

For an interview with Professor Donald visit: bit.ly/1bcBLRP

## New horizons for engineering students

Twelve undergraduate students on an Imperial Horizons course made it through to the finals of the Engineers Without Borders national challenge on 13 June. This year was the first time that students from Imperial entered the competition, which uses technology to tackle poverty. The top 20 designs were shortlisted, with three from Imperial, including an idea for a new roofing material to collect and purify rainwater. Imperial Horizons is an undergraduate programme designed to broaden education, inspire creativity and enhance professional impact.

There are many challenges facing the digital economy and I think one of the primary ones is security and privacy – ensuring that people understand how to use this technology effectively and in way they can trust."

DR CATHERINE MULLIGAN (BUSINESS SCHOOL) DISCUSSING ISSUES RAISED AT THE RECENT G8 SUMMIT.

To watch the full video interview visit: bit.ly/19kh8ru

## media mentions

-LUCY HANDFORD, COMMUNICATIONS AND PUBLIC AFFAIRS

#### Cloud concern

#### THE SUNDAY TIMES ► 09.06.13

Staff who use cloud services without permission from their IT department could cost their business in more ways than one, according to new research. As well as incurring hidden charges, unauthorised use could pose security risks. Professor Nelson Phillips (Business School) explains there's a very good reason why staff use cloud services at work: "these applications are often the easiest way to get a job done. They are not being deliberately dismissive of the IT team, it's just a quick way to solve a problem and they already do it in their personal lives, so it's very easy to continue to do that."

#### Don't inhale

#### BLOOMBERG ► 13.06.2013

E-cigarettes have become a popular alternative to tobacco cigarettes. Instead of lighting up, many nicotine addicts use the battery powered devices, believing them to be a safer alternative. But fierce debate on the steel tubes has ignited, since UK health regulators announced plans to classify e-cigarettes as a medicine, amid reports that faulty e-cigarettes can explode, causing seconddegree burns. Emeritus Professor Gerry Stimson (Public Health) warns that clamping down on e-cigarettes could cause more harm than good: "We should be doing everything to encourage smokers to shift to new nicotine products. The desire to make them safer is leading to overregulation. It will in effect turn them into a medicine and make them harder to obtain than cigarettes. It's a shame."

#### A natural alternative

#### THE GUARDIAN ► 18.06.13

*In vitro* fertilisation (IVF) has brought happiness to millions of families worldwide. But it still requires strong fertility drugs to stimulate egg production carrying the risk of a potentially life-threatening condition of ovarian hyperstimulation syndrome. Now there's hope for an alternative, following the birth a child born to a woman who was given a naturally occurring hormone instead of the usual fertility drugs. The woman took part in a trial run by Imperial and Hammersmith Hospital to see if the hormone, kisspeptin, could work as well as normal IVF

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treatment. Professor Waljit Dhillo (Medicine), who led the work told *The Guardian*: "We have shown that kisspeptin can be used effectively in patients undergoing IVF treatment to more naturally stimulate the release of reproductive hormones and result in a healthy baby."

#### Software solution

#### *NEW SCIENTIST* ► 12.06.2013

Many of us ignore messages to update computer software for fear that it will take too long and could introduce new bugs. But an ingenious idea from Petr Hošek and Dr Cristian Cadar (both Computing) may solve this ageold problem. Their system works by activating unused cores found in the 'multicore' microprocessors of computers. This allows the old version of the software to carry on working, while the update takes place on another unused core. "You end up with what we call a multi-version application. These run in parallel and their behaviour is combined in such a way as to increase overall reliability and security. But it looks and feels exactly the same to users," Dr Cadar explained.

#### awards and honours



COMMUNICATIONS AND PUBLIC AFFAIRS

#### International awards for Communications

The College's Communications and Public Affairs Division has won two international Council for Advancement and Support of Education Circle of Excellence awards for *Imperial* magazine and the pop-up science demonstration tricycle (pictured). The annual awards acknowledge superior accomplishments in the fields of alumni relations, communications, marketing and development. *Imperial* magazine received a gold award in the annual magazines category, as did the tricycle in the specialty pieces category.

#### BUSINESS SCHOOL Responsible business idea attracts praise

An MBA student from the Business School has been lauded for an essay on how brands can maximise profit and do social good. Mike Follett won a gold award in an annual competition run by ADMAP – a monthly magazine written by expert practitioners on advertising and communications innovations. The award and a \$5,000 cheque will be presented to Mike at a special ADMAP Prize celebration event at Cannes Lions International Festival of Creativity on 19 June.

#### NATURAL SCIENCES Top maths prize for academic

Dr André Neves (Mathematics) has been awarded a Whitehead Prize by the London Mathematical Society – the major learned society for mathematics in the UK. The prize is awarded annually to four different mathematicians working in the UK who are at an early stage in their careers. The prize is named in memory of J.H.C. Whitehead, pioneer of homotopy theory.

#### NATURAL SCIENCES Mayoral nomination for students

Three PhD students from the Department of Physics reached the final of the London Mayor's 2013 Low Carbon Prize recently. Alex Bak, Laurence Drummond and Frank Murphy battled it out with 10 other finalist teams presenting sustainable business concepts to a panel of judges that included the Mayor Boris Johnson, fashion designer Vivienne Westwood, Zac Goldsmith MP and 'Dragon' Deborah Meaden, with a £20,000 investment prize up for grabs. The Imperial team's idea was to make certain roads in London accessible only for electric vehicles

## Pebbles help explain Mars's watery past

The discovery of sand and pebbles that have turned to rock has provided the most definitive proof yet of ancient water flow on the surface of Mars.

It is part of NASA's latest mission to Mars, which landed a six-wheeled vehicle, the size of a small car, on the planet. The vehicle, called the Curiosity rover, landed in a region of the planet called Gale Crater and is being remotely operated by the NASA team to learn more about Mars's past.

In the latest study, which is published in the journal *Science*, Professor Sanjeev Gupta (Earth Science and Engineering) and his colleagues from NASA's Mars Science Laboratory mission provide the first observations of ancient river sedimentary deposits in the form of rock conglomerates – rounded pebbles known as 'clasts', mixed with sand.

"This rounding happens when clasts travel down a river and are constantly bumping into each other and so as they hit each other, corners of the clasts get knocked off and the circumference of the clasts gets progressively rounder as you go downstream," said Professor Gupta, adding: "On earth this is sure sign of



transport by water processes."

The discovery of conglomerates on the Martian surface provides further proof that Mars once had a warmer and wetter past.

"What's amazing is that we can use physics to reconstruct the flow dynamics of these ancient rivers on Mars by applying equations derived from studies on Earth," said Professor Gupta.

These calculations suggest that, at this particular location, the river flowed at a speed equivalent to about walking pace and the water depth was probably knee deep. –COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS

To watch a video slide show of Professor Gupta talking about the mission and the importance of this latest discovery visit: bit.ly/11IOBmA

#### Plastic electronics made easy

Researchers from the Department of Materials have developed a new method to control how special conducting plastics are manufactured, which could revolutionise the up-and-coming technology of plastic electronics, an advanced type of flexible circuitry.

The process of making many well-known products from plastics involves controlling the way that microscopic crystals are formed within the material. Engineers can determine the properties that they want, such as transparency and toughness, by adding small amounts of chemical additives to plastic formulations. This approach is used in making food boxes and other transparent plastic containers but, up until now, it has not been used in the electronics industry.

A team led by Dr Natalie Stingelin (Materials), who also works in Imperial's Centre for Plastic Electronics, has now demonstrated that these additives can also be used to improve how plastic electronics are made.



The researchers found that when the additives were included in the formulation, the plastic electronic circuitry could be printed more reliably and over larger areas, reducing fabrication costs in the industry.

Dr Stingelin said: "Essentially, we have demonstrated a simple way to gain control over how crystals grow in electrically conducting plastic semiconductors. Not only will this help industry fabricate plastic electronic devices, like solar cells and sensors, more efficiently, I believe it will also help scientists experimenting in other areas, such as protein crystallisation; an important part of the drug development process." -JOSHUA HOWGEGO FOR COMMUNICATIONS AND PUBLIC AFFAIRS

## Rise in hospital admissions for childhood obesity

The number of children admitted to hospital for problems related to obesity in England and Wales quadrupled between 2000 and 2009, a study has found.

Researchers at the School of Public Health looked at NHS statistics for children and young people aged five to 19 where obesity was recorded in the diagnosis.

Nearly three quarters of these admissions were to deal with problems complicated by obesity, such as asthma, breathing difficulties during sleep and complications of pregnancy, rather than the obesity itself.

In 2009 there were 3,806 children admitted to hospital for obesity-related conditions, compared with 872 in 2000.

"The burden of obesity is usually thought to have its serious consequences in adulthood, but we now see it manifesting earlier, in childhood," said study lead Dr Sonia Saxena (Public Health). "It's clear that rising obesity levels are causing more medical problems in children, but the rise we observed probably also reflects increasing awareness among clinicians, who have become better at recognising obesity."

Previous work by the Imperial team and the University of Southern Carolina found that adults in the US are six to eight times more likely to perceive they are overweight or obese if told by



a doctor and five times more likely to try to do something about it. But only 45 per cent of overweight patients who visit a doctor recall having been told about their weight problem.

"It's important that doctors speak to patients about their weight, because any attempt to help their patients must begin by recognising the problem," Dr Saxena said. --SAM WONG, COMMUNICATIONS AND PUBLIC AFFAIRS





Top left: Radiographer Andy Blyth helps a patient get in position. Bottom right: Radiographer Hope McDevitt prepares radioactive tracer behind thick lead glass for protection.

acutely ill patient – which is something that can potentially happen at hospital facilities."

In addition, having different methods of imaging in the same location means that volunteers can go through more than one scanner in single visit, giving an overlaid image that provides a very comprehensive picture of the underlying biology.

## Picture perfect

Finding novel ways of visualising the world has been a central pillar of scientific discovery from Galileo's telescopic observations of Jupiter's moons, to Watson and Crick's X-ray diffraction images of the double helix structure of DNA.

Over the past few decades, medical imaging scanners that exploit the principles of physics to examine biological tissues have revolutionised the way we explore the human body and mind. The early pioneers of medical science would no doubt marvel at how we can now literally see people's brains working as they think.

Imperial has been a leader in these imaging techniques since their inception; indeed, the first magnetic resonance imaging (MRI) scanner to be used in a clinical setting was hosted at Hammersmith Hospital in the early 1980s.

Since then the College has been conducting pioneering imaging research at facilities across College campuses, as well as at collaborative centres like Imanova and the MRC Robert Steiner MRI Unit – addressing a diverse array of scientific questions from the biochemical basis of dementia to the mechanisms underlying consciousness.

#### **Imaging legacy**

That work is now set to step up a gear with the opening of the Clinical Imaging Facility (CIF) in the basement of the Wolfson Building at Hammersmith Campus, which will be entirely dedicated to imaging research. The facility includes a new positron emission tomography (PET) scanner that, in general terms, looks at biochemical processes in the body and brain; an MRI scanner, which focuses on fine structural details in the brain allowing the 'mapping' of specific regions to functions; and an 'angiosuite' allowing real-time visualisation of blood vessels during surgical procedures such as stent placement.

Crucially the CIF has a dedicated team of staff, including technicians and radiographers, who are working with researchers across College on groundbreaking new studies. These researchers recruit volunteers – often patients with a condition of interest – as well as healthy subjects for comparison, who are then scanned by the team at the CIF.

Dr Albert Busza (Medicine) is manager of the CIF and explains why the centre is proving so attractive to researchers: "We are able to run quite complex studies with lots of subjects at reasonable cost, without having to cancel sessions at short notice to make way for an



The Clinical Imaging Facility team. Left to right: Julie Fitzpatrick, Gokul Kolipaka, Hope McDevitt, Albert Busza, Andy Blyth.

#### Halting brain decline

This set-up is what appealed to Professor David Brooks (Medicine), Head of the Centre for Neuroscience, who is studying the progression of dementia and whether it can be slowed down by novel drugs.

Having secured funding from Alzheimer's charities and GE Healthcare, he is now scanning volunteer patients with dementia before and after treatment to see if there is any reduction in brain inflammation and the aggregation of a protein known as amyloid – two hallmark features of the disease.

"Every time we do a PET scan to look at brain function, we also do an MRI to look at its structure, and we put the two images together so that we can see exactly where the biochemical processes are happening," David says.

The study will follow volunteer patients for two or three years while they take the novel treatment to see if symptoms such as poor memory can be improved, as well as the underlying brain pathology.

"Alzheimer's is costing the country billions of pounds and if you can keep patients in the community and functioning, it will be a huge boost to the economy," explains David.

Another researcher looking at brain abnormalities of a very different kind is Professor Simon Taylor-Robinson, College Consul (Clinical) for the Faculty of Medicine.

Simon is an expert in liver disease and is trying to understand more about one serious consequence of the condition.

"If the liver fails, the blood becomes full of various toxins that would normally be cleared," he says. "This in turn means the brain is bathed in a toxic soup that leads to a progressive inability to think straight – for example by reducing reaction times whilst driving."

This condition, known as hepatic encepha-

lopathy, can appear early in the course of liver disease and so affects a "significant proportion of the population".

Simon has previously conducted imaging studies of the brains of people with hepatic encephalopathy while they perform psychometric puzzles.

"In healthy people the brain goes from a sort of mental neutral – known as the default mode network – to using specific regions for different tasks; whereas in people with encephalopathy, they stay in mental neutral and find it very difficult to get into first, second or third gear, so to speak," says Simon.

His team has now started a new study at CIF testing a therapeutic agent that might clear some of the blood toxins and improve brain function. They will perform imaging experiments before, and then after, administration of the new drug to see if participants are better able to engage parts of their brain.

#### Seeking out cancer

It's not just brain studies that the CIF will be useful for though; imaging scanners are increasingly being used to detect and prognose cancer in the body.

Dr Laura Kenny (Surgery and Cancer), a Clinical Senior Lecturer and Consultant in Medical Oncology, is looking at an early form of non-invasive breast cancer know as ductal carcinoma *in situ* (DCIS). These lesions are routinely detected at screening clinics and usually removed thereafter – but in around 40 per cent of cases the surgeon finds that the cancer is in fact more invasive than initially thought, and requires additional treatment.

Laura hopes that by performing PET scanning with 'tracers' that highlight cancer cells by the way they divide and metabolise, one might be able to flag up invasive breast cancer earlier and treat it accordingly. "There's been an explosion in genetic and biological knowledge of cancer but the advantage of imaging is that it reflects the tumour in its own natural micro environment," she says. "If we can combine these two approaches we can move forward and be able to predict outcome better in breast cancer."

#### Nurturing research environment

At present the CIF has four members of permanent staff in addition to manager Albert – Andy Blyth and Hope McDevitt, who are research radiographers for PET; Gokul Kolipaka, a senior research technician; and Julie Fitzpatrick, who will join the team as an MR radiographer next month (all Medicine).

Running a centre like the CIF requires considerable expertise, not just in terms of knowledge of the scanners themselves, but also in tasks like handling radioactive tracers and patient liaison.

Julie Fitzpatrick is currently based at the Robert Steiner MRI Unit and has 10 years of experience working in imaging at Imperial. She believes the CIF will provide a conducive environment for quality research.

"When people take part in research and they come through this facility, I want that to be a positive experience for them. You have to remember that this doesn't immediately benefit them, so it has to be totally safe and comfortable," Julie says.

"If someone is nervous but still feels prepared to go ahead then I can reassure them, maintain contact, talk through the entire procedure with them and just put them at ease," she adds.

In the coming months, the CIF will begin hosting around 200 trial volunteers who have been recruited from all around the UK as part of a large study led by Dr Paul Edison (Medicine). The work also involves scientists from the Universities of Oxford and Southampton, King's College Hospital, and the Avon and Wiltshire Mental Health Partnership NHS Trust. It will examine the effectiveness of a diabetes drug in the treatment of Alzheimer's disease.

There is also a raft of new proposals for studies at the CIF ranging from looking at how the brain adapts when learning new languages to the impact of online social networks on the brain.

The CIF looks set to play a vital role in the bigger picture of imaging science at the College.

-ANDREW CZYZEWSKI, COMMUNICATIONS AND PUBLIC AFFAIRS

Academic staff with ideas for research at the Clinical Imaging Facility should contact Centre Manager Albert Busza: a.busza@imperial.ac.uk

## Enterprising legacy

Edward Astle is moving on after nearly five years at the College as Pro Rector (Enterprise), having helped forge many commercial partnerships to support the academic mission.

#### How did your career lead you to Imperial?

In a sense, it didn't. I had a relatively conventional corporate career on the boards of three FTSE 100 companies, running ever bigger divisions. The truth is I actually set out to find another, even bigger corporate job and, in the process of looking, had a phone call about another completely different sort of role here at Imperial. Initially, I came out of curiosity but soon became fascinated by the place and the challenge of applying what I had learned in business in the very different context of a university.

## How does the College environment differ from the corporate world?

One fundamental difference is the objectives – there is a narrow objective in the corporate world, which is basically shareholder return. By contrast, in the university sector there is a broader set of objectives, in terms of excellence in research, education and translation, and also, a more diverse set of stakeholders. The very founding charter of the College was about excellent science and its application to industry, so in that sense there is a readiness to do business with business here, and I think the College's relationship with industry is a crucial pillar of the translation aspect of the College's mission.

### What are your highlights or proudest achievements at the College?

In terms of the achievements of the Enterprise Division, I think it is for the academic community to judge if we are adding value, although I think the feedback has been that we are. Overall, I am probably proudest of the excellent team we have in place.

From a personal point of view, being involved in the short, intense period of getting to a contract to establish the new Lee Kong Chian School of Medicine in Singapore is perhaps the single most interesting thing I've done. It was also the most difficult because of the breadth of things we had to achieve and the fact that there wasn't a model for it. With



54 students about to start in October (see page 3, In Brief), it is very satisfying to have played a small part in such a bold and successful endeavour by the College and the Faculty of Medicine.

### What do you plan to do now and what will you miss most about Imperial?

It has always been my plan when I move on to revert to a fairly conventional non-executive portfolio career with FTSE companies, but I hope that I will also be able to keep a foothold somewhere at the university-business interface. Walking is my biggest single passion and I will have more time to do that locally in the Lake District. My wife and I have a big trip planned to New Zealand next year, and I am also hoping to get back to the Himalayas at least once more, having already been three times previously!

I will miss all sorts of things about the College – just being surrounded by the amazing science that goes on here, the opportunities to learn, and some of the lectures and the guests that the College hosts, to name but a few. I will of course miss my colleagues and my team, but I've had a very good run here so I shouldn't be greedy!

-ANTHONY WILKINSON FOR COMMUNICATIONS AND PUBLIC AFFAIRS



#### The future of enterprise

From 1 August, Dr Simon Hepworth will become Head and Director of Corporate Partnerships, reporting to the Provost. He will also oversee work on Enterprise projects and strategy. Paul Docx, the Chief Executive of Imperial Consultants, will report to the Chief Financial Officer from the same date.

## inside\* story

#### mini profile

## Peter Weinberg

Professor Peter Weinberg is Director of Research in the Department of Bioengineering and, while he says he "doesn't actually get to direct anyone's research except his own," he admits to "occasionally nudging people in a useful direction".

## What's happening in Bioengineering at the moment?

Bioengineering is enjoying a period of remarkable growth. When I joined the Department in 2004, there were around 10 academic staff. Today there are over 30, and we are still expanding rapidly. Bioengineers commonly work on cardiovascular disease, musculoskeletal injury and neurological problems, but now I am developing a cancer engineering initiative. There are similar schemes in the USA and we want to lead the way in the UK. We have started in a small way: the Faculty of Engineering and the Imperial Cancer Research UK Centre have jointly funded two interdisciplinary PhD projects which will start in October.

#### Will there be further

collaborations of this kind? We hope to attract funding for more students. They would have two or more supervisors, combining biomedical sciences and either engineering or physical sciences. It is an effective way to get different disciplines talking to each other.



Academics are very busy, but if they jointly supervise a student then they have to get together to discuss research on a regular basis. With external funding we ultimately hope to establish a Centre of Cancer Engineering based in the cross-faculty Institute of Biomedical Engineering.

#### Who is really pushing the envelope in terms of crossdisciplinary thinking?

The Physical Science-Oncology Centers established in the US take cancer-related hypotheses from engineers and physical scientists that could be addressed with resources available to biomedical scientists and clinicians. This is exemplified by the work of theoretical physicist Professor Paul Davies of Arizona State University, who heads one of the US centres. He has proposed novel theories about the evolution of cancer that are based on our metazoan ancestry. Whether they are true or not, the point is that we need to change the way we think about cancer - the purely biological approach might have taken us as far as we can go now.



## Electric dreams

An Imperial team that built an all electric superbike is celebrating completing one of the world's most gruelling and high-profile zero emissions races.

The team, consisting of third and fourth year undergraduates from the Department of Mechanical Engineering, came seventh in the Isle of Man TT Zero race this month.

One of the student engineers Luke Foreman said: "When the bike finished the race we were all ecstatic! We had a lot of mechanical problems during prac-



tice, but everything worked perfectly during the race. We were in a state of disbelief when we saw the bike reaching the finishing line."

For the past four years, Imperial teams have endeavoured to take part in the Isle of Man TT Zero race, but have had limited success.

Two years ago, the team made it to the island but failed to complete a lap, suffering mechanical problems when the motorbike reached the difficult mountain section of the track. Last year, the students worked hard to carry out mechanical upgrades on the motorbike, but did not complete them in time.

But, despite a last-minute rider substitution after the first choice broke a leg, the team completed the race in front of 80,000 spectators lining the 37-mile course.

"The most nerve-racking part of the race was when the bike was out racing," said Luke. "For the rider I think the whole course is pretty extreme with lots of hills and a particularly difficult 'hairpin' corner that presented a real design challenge."

Imperial was one of only four university teams to compete and the only team which uses this project to contribute towards its members' undergraduate degrees in mechanical engineering.

-COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS

### Staff excellence celebrated with President & Rector's Awards

Imperial has announced the recipients of the 2013 President & Rector's Awards and Medals for Excellence.

The accolades are awarded annually to recognise staff members who have made outstanding contributions in teaching, pastoral care, research supervision and supporting the student experience. Staff can be nominated by colleagues or students from all areas of the College.

The awards are decided by a selection panel of staff and students chaired by Professor Debra Humphris, Pro Rector (Education). She said: "Providing world class education and pastoral support for our students is a priority for the College and core to our education mission. The College is deeply proud of the award winners, their leadership is highly valued and



crucial to enhancing our outstanding education experience."

Alexander Whittaker (Earth Science and Engineering, pictured left) received a Medal for Outstanding Contribution to Teaching Excellence. He has designed two residential geology field trips, alongside running a first year course in residential geology.

"Good field teaching takes time and effort to get right, particularly

when you are in charge of 50 or more students for up to two weeks. I've designed these courses to give the students a real insight into how mountain belts grow and decay over time, how to 'read' Earth history from rocks, and the industrial perspectives for petroleum geology and mineralisation. I see this award as recognition for all the hard work that goes into planning, organising and running these trips successfully," he said. —JOHN-PAUL JONES, COMMUNICATIONS AND PUBLIC AFFAIRS

#### Awards for teaching excellence

Dr Nicholas Brooks (Chemistry) Dr Matthew Fuchter (Chemistry) Dr Axel Gandy (Mathematics) Professor Philippa Gardner (Computing) Dr Uta Griesenbach (NHLI) Dr Andrew McKinley (Chemistry) Professor Karim Meeran (Medicine) Dr Laura Patel (Chemistry) Dr Michael Templeton (Civil and Environmental Engineering) Dr Tamer Zaki (Mechanical Engineering)

#### Medals for teaching excellence

Professor Jenny Higham (Faculty of Medicine) Professor John Laycock (Medicine) Dr Alexander Whittaker (Earth Science and Engineering)

Awards for pastoral care Miss Judith Barritt (Civil and Environmental Engineering) Professor Geoff Maitland (Chemical Engineering)

Medals for pastoral care Mr Martin Holloway (Bioengineering) Linstead Hall wardening team: David Charles, James Field and Yujie Zhao

Awards for research supervision Professor Dan Crisan (Mathematics) Dr Ken MacLeod (NHLI) Professor Kim Parker (Bioengineering) Dr Edward Tate (Chemistry) Dr Ambrose Taylor (Mechanical Engineering)

Medal for research supervision Dr Jane Davies (NHLI)

Awards for supporting the student experience Dr Sharon Bolton (Registry) Ms Britta Ross (Bioengineering) Mr Griffin Ryder (Faculty of Medicine)

Medals for supporting the student experience Ms Susan English (Faculty of Medicine) Mr Michael Reynolds (Campus Services)



Staff featured in this column have given many

years of service to the College. Staff listed below celebrate anniversaries during the period 1 May–30 June. The data is supplied by HR and is correct at the time of going to press.

#### 20 years

- Dr Munir Ahmad, Research Fellow, Electrical and Electronic Engineering
- Dr Anne Burke-Gaffney, Research Lecturer, NHLI
- Mr James Reardon, Leading Hand, Estates
- Dr Cesare Terracciano, Reader in Cardiac Electrophysiology, NHLI

#### 30 years

• Professor Anthony Cass, Professor of Chemistry, Chemistry

#### 40 years

- Ms Josephine Formosa, Finance Officer, Faculty of Natural Sciences
- Ms Janice Lewis, Head of Subscriptions and Document Delivery, Library Services

#### SPOTLIGHT

Josephine Formosa, Finance Officer, Faculty of Natural Sciences 40 years



"I've worked at Imperial as a finance professional since 1969 and I have to sav I've enjoyed every minute of it. I've made some fantastic friends and still have some wonderful colleagues whom I've known for over 30 years and who are still going strong like me! I learned everything I know about finance from Dr Peter Mueller, who, for many years, was our Finance Officer and to whom I'm truly grateful. There have been many changes that I've seen throughout my years at Imperial, and I'm happy to say mostly for the better. I'm now looking forward to a long and happy retirement when it comes, but will miss Imperial and all my colleagues terribly."

### Welcome new starters

Mr Dennis Affram, NHLI Mrs Parvin Ahmed, Medicine Miss Sun Ahn, Accommodation Miss Resha Al Rabeh, Medicine Miss Vincessca Alabi, Accommodation Miss Lorraine Anek-Ogol, Accommodation Dr Arbel Artzy-Schnirman, Materials Dr Rochelle Aw, Life Sciences Dr Matthew Aylott, Faculty of Engineering Ms Lauren Baker, Faculty of Medicine Mr Ioannis Bakolis, Public Health Ms Nisha Barot, Registry Mr Toby Basey-Fisher, Materials Miss Cynthia Bishop, Medicine Mr James Blackman. Accommodation Mrs Hanna Box, NHLI Dr Caterina Brandoni. Environmental Policy Dr Michael Bretscher, Public Health Mr Ashlev Brown, Surgery and Cancer Dr Edward Burgin, Chemistry Mr Mikhail Caga-Anan, NHLI Professor John Camm, NHLI Miss Mahalia Chambers, Accommodation Dr Hyung Chang, EEE Miss Sandra Charlemagne, Finance Mr Yen-Ming Chen, EEE Dr Eileen Cheng, Materials Mr Mark Collins, EEE Mr Nicholas Collis, Business School Mr Adam Connolly, Aeronautics Miss Verity Cox, Accommodation Dr Alessia David, Life Sciences Dr Rachel Davis, Surgery and Cancer Mr David Davis, Public Health Mr Dahir Dini, EEE Miss Victoria Doran, Accommodation Dr Marcus Dorner, Medicine Dr Frances Doyle, Medicine Mrs Nicki Doyle, Medicine Ms Helen Drummond, College Headquarters Dr Cailong Fang, NHLI Dr Grazia Femminella, Medicine Mr Aliester Fisher, Surgery and Cancer Mr Thomas Fitch, Finance Mr Oliver Foss, Accommodation Dr Ranjani Ganji, Life Sciences Professor Hossein Ghofrani, Medicine Dr Jas Gill, Business School Mr Richard Goberdhan, Chemistry Miss Lucy Goff, Materials

#### Miss Rosalind Goudie, Public Health Miss Rachel Groom, Physics Miss Anne Guilbert, Chemical Engineering Miss Fangce Guo, Civil and Environmental Engineering Mr Michael Hale, Accommodation Mr James Hall, Chemistry Dr Adam Hampshire, Medicine Dr Ismail Hijazi, Chemistry Mr Thomas Hills, Grantham Institute Ms Bryony Hooper, College Archives and Corporate Records Mrs Kate Ippolito, Professional Development Mrs Fatama Jagne, EYEC Miss Courtney Johnson. Accommodation Dr Sadia Kanvil, Life Sciences Ms Maureen Kearney, NHLI Dr Oliver Keown, Surgery and Cancer Dr Vasileios Kontis, Public Health Mr Marios Koutsakos, Medicine Mr Dimitrios Kouzapas, Computing Ms Andrea Kreideweiss, Business School Dr Olga Kuzmina, Chemistry Mr Luke Kwade, Security Services Mr Satyam Ladva, Accommodation Dr Thomas Lanyon-Hogg, Chemistry Miss Sophie Lee, Accommodation Mr Kyuhwa Lee, EEE Professor Benjamin Lehner, Clinical Sciences Mr Ernesto Lembcke. Accommodation Miss Jennifer Lewsey, Accommodation Dr Qianqian Li, Aeronautics Mrs Leena Lindholm-White, ESE Mr Jason Long, Medicine Mr Andrew Lovell, Medicine Mrs Nuala Lyons, Faculty of Medicine Ms Jacintha Mack Smith, Computing Ms Pooja Mange, Medicine Mr Jiten Manji, Medicine Miss Rebecca McKone, Graduate School Mr Mirko Menegazzo, Public Health Miss Emilia Michael, Accommodation Mr Pedro Michelli Corradi, Faculty of Medicine Dr Cosetta Minelli, NHLI Dr Alireza Moayyeri, Public Health Mr Richard Monk, Registry Ms Hazel Morgan, Business School Dr Senita Mountjoy, Faculty of Medicine Dr Ummezeinab Mulla, Public Health Mr Shane Murphy, Environmental Policy Miss Alexandra Myers-Thomson, Estates Division

Mr Jovan Nedic, Aeronautics

Miss Pearl Nii Armah Anteh. Accommodation Mr Edward Noel-Hill, Accommodation Miss Esther Ogundeii. Accommodation Dr Daniel O'Keeffe, Computing Mr Stergios Papantonis, EEE Dr Robert Partridge, International Office Mr Karl Phillips, Accommodation Mr Abdul Qazi, Accommodation Ms Tanvi Rai, Public Health Mr Csaba Remenyi, ICT Ms Sophie Ridewood, Life Sciences Miss Nathalie Rios, EYEC Dr Ivana Rizzuto, Surgery and Cancer Miss Rebecca Robey, Medicine Dr Elvira Robins, Surgery and Cancer Dr Ursula Rodgers, NHLI Mr Diogo Rodrigues Feleciano, NHLI Dr Monica Ruiz Garcia, Medicine Mr Alexander Schmidt-Richberg, Computing Miss Joanna Scibior, Accommodation Miss Sunita Sharma, Faculty of Medicine Miss Alexandra Shaw, Life Sciences Dr Chaoyang Shi, Computing Dr Claire Smith, Public Health Dr Changick Song, EEE Miss Emily Sparey, Accommodation Dr Mark Steedman, Global Health Innovation Mr Anton Stefanek, Computing Dr Jenna Stevens-Smith, Bioengineering Miss Claire Streatfield, Medicine Mr Brian Taylor, Public Health Mr Panagiotis Vorkas, Surgery and Cancer Dr Rachel Walls, Human Resources Mr Will Warburton, Surgery and Cancer Miss Emma Warren, Estates Dr Thomas Weissensteiner, Life Sciences Miss Jemma Whelan. Accommodation Mr Alex Whitworth, Estates Professor Ian Wilson, Surgery and Cancer Mr James Wood, CHOSTM Mr William Wu, Business School Dr Tristram Wyatt, Human Resources Ms Celine Yan, Medicine Mr Hao Ye, Civil and Environmental Engineering Mr Ze Zhang, EEE Mr Zili Zhang, Chemical Engineering

## Farewell moving on

Mr Johnny Adefowora, Catering Mrs Christine Allwright (26 years), EEE Dr Aleiandro Barroso Gonzalez. Surgery and Cancer Dr Vineet Bhakhri, Materials Mr Anand Bhundia, Catering Dr Elaine Bignell (13 years), Medicine Dr Isabelle Bisson, Medicine Ms Emily Bloomfield, NHLI Mr William Bobinski (34 years), Civil and Environmental Engineering Miss Sophie Brown, Faculty of Medicine Mr Russell Carter (32 years), Aeronautics Dr Richard Cheong-Leen, Medicine Dr Jacob Cheung, Physics Dr Theopisti Chrysanthaki, Business School Ms Vivienne Chusney, Medicine Mrs Grace Constantine, Medicine Dr Gillian Cowan, Medicine Dr Anne Deredec (7 years), Life Sciences Mr William Dodt, Medicine Dr Gillian Elliott (6 years), Medicine Miss Amany Farwana, Library Mr Pietro Ferrantino, Imperial College Union Miss Sandra Figueiredo, EYEC Dr Andrew Fletcher, Development & Corporate Affairs Mr Brian Fuchs (6 years), Computing Dr Christos Gavriel, Computing Dr Patricia Gorgojo Alonso, Chemical Engineering Dr Polly Gravells, Medicine Dr Fernando Guadalupe Santos Lins Brandao, Physics Dr Davide Guidi, Computing Mr Kevin Hale (39 years), ICT Dr Inge Herrmann, Materials Mr Steve Howe (8 years), Estates Miss Emily Hyett, Business School Dr AFM Islam, Public Health Dr Hayley Jeal (14 years), NHLI Dr David Jones, Environmental Policy Dr Chahrazade Kantari, Medicine Mr Matthew Katz, EEE Dr Peter Kollensperger, EEE Dr Ines Kralj-Hans (7 years), Surgery and Cancer Dr Sailesh Kumar, Surgery and Cancer Dr Ka Kwok, Faculty of Engineering Dr Mark Lee, Life Sciences Ms Sarah Lester, Grantham Institute Ms Amy Lewis, NHLI Ms Maria Llano Rodriguez. Computing

**HINSIDE**story

Ms Ilaria Longo, Faculty of

Engineering Mr Michael Macdonnell, Surgery and Cancer Professor Christopher Mathias (33 years), Medicine Dr Christopher McDermott-Roe, Clinical Sciences Dr John Mina, Chemistry Mrs Gioia Mosler, Public Health Dr Michael Motskin, Materials Ms Sofia Musil, Medicine Dr Athanasia Panousopoulou, Computing Mrs Deborah Papadopoulou, Medicine Miss Mitali Patel, Medicine Dr Dimitar Peshev, Chemical Engineering Miss Justyna Przystal, Medicine Mr M.D. Rahman, Catering Mr David Reeves (7 years), Finance Dr Laura Robertson, Public Health Dr Meritxell Rosell Mane, Surgery and Cancer Dr Claudio Ruffmann, Public Health Dr Calvin Ryan (19 years), Surgery and Cancer Dr Maria Santini (5 years), NHLI Miss Yasaman Shahrabi, Medicine Dr Sarah Shepley (5 years). Corporate Partnerships Ms Helen Standring, Development Ms Colette Stevenson, Business School Miss Stephanie Tapply, Business School Miss Lisa Thomas, Business School Dr Chiara Triulzi, Life Sciences Dr Carmen Tsang (5 years), Public Health Dr Lihui Wang, Medicine Dr Simon Waschke, Physics Mr Haydn Worley, Faculty of Medicine Miss Joanna Young, Life Sciences Dr Constanze Zeller (5 years), Surgery and Cancer Mr Hamed Zolghadrzadehjahromi, Civil and Environmental Engineering

This data is supplied by HR and covers the period 22 May– 17 June. This data was correct at the time of going to press.

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

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

## events highlights

FOR COMPLETE DETAILS: www.imperial.ac.uk/events

## 27 June 2013



#### 2-7 JULY • PUBLIC LECTURE Royal Society Summer Science Exhibition

One of the key dates in the London summer calendar, the Royal Society's Summer Science Exhibition, showcases the most exciting cutting-edge science and technology research, and provides an opportunity for members of

#### 12 JULY ► SEMINAR Why bother with science communication?

Professor Lord Winston presents the keynote of the Graduate School Summer Research Symposium. The annual poster competition for postgraduate research students from across the the public to interact with scientists and ask them questions about their work. This year's exhibition features five stands with Imperial research from the Departments of Physics and Life Sciences, including the geological processes recently revealed on icy planets such as Titan, to how cells respond to the environment around them.

College is open to all Imperial staff and students, providing a great opportunity to get an insight into research in all areas. Posters can be viewed in the Great Hall during the afternoon and the keynote at 17.00 will be followed by the prizegiving and a reception.

#### 28 JUNE > SEMINAR

How nanomotors produce force in cells – insights from the myosin superfamily

Anne Houdusse, Institut Curie, Paris

1 JULY > CONFERENCE

Imperial Space Lab launch Speakers from the UK space industry

3 JULY > SEMINAR Centre for Infection Prevention and Management annual meeting CIPM scientific meeting 5 JULY > PUBLIC LECTURE Soapbox science at Southbank

9 JULY > PUBLIC LECTURE In this house we obey the laws of thermodynamics

Professor Amparo Galindo (Chemical Engineering) 12 SEPTEMBER > PUBLIC LECTURE **The scientist in an adventure with rocks, oil, water and volcanoes**  *Professor Matt Jackson (Earth Science and Engineering)* 

27 SEPTEMBER > PUBLIC LECTURE

Science Uncovered Imperial research returns to the Natural History Museum



#### Spread the word

Tours of South Kensington Campus for prospective students wishing to find out more about the College will be led by Rector's Ambassadors on Mondays, Wednesdays and Fridays

6 September at 11.00 and 14.00. More information is available from Student Recruitment and Outreach: visit@ imperial.ac.uk To book visit: www.

imperial.ac.uk/visit

between 1 July –



Mrs Gurvinder Daul, Catering Assistant, Campus Services.

#### What are you doing in the picture?

Preparing a delicious smoothie at our juice bar, which has been extremely popular ever since the College Café opened around two months ago. We try to get feedback from our customers where we can, so occasionally we prepare small samples for testing, and then see what flavours and combinations people prefer. The banana and Nutella is a favourite — quite healthy but a treat too!

What would you do if you were

editor of *Reporter* for a day? Well, I think it's a good to get ideas from all staff, so perhaps speak to people at various levels to see how we can do things better.

#### Who would be your cover star?

I think our supervisor, Veronika Studena, has done extremely well in working her way up from assistant to managing the new College Café. It's also great from a motivational point of view to see someone like Jane Neary (Director of Campus Services) as a woman in a senior position, overseeing so many different areas including catering and sport. You never know, maybe someday!

#### **PHOTO EXPO**

Two murals showing medical and sporting achievements which were removed during refurbishment work in 2003 have finally been reinstalled in the entrance lobby of the Medical School Building at St Mary's Campus. They were unveiled by Professor Dermot Kelleher, Dean of the Faculty of Medicine, at a ceremony on 11 June. Art specialist Tim Orson was involved in the restoration, with the support of Anne Barrett, College Archivist and Corporate Records Manager, who located and looked after the murals prior to reinstallation.



☑ 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

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