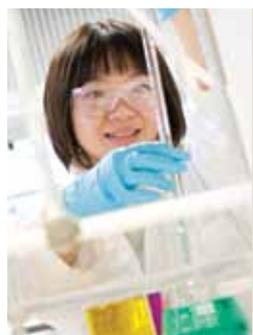




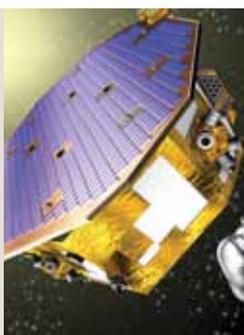
# Royal regards

Prince Harry visits the labs where scientists and military experts are studying blast injuries

... **PAGE 3 AND CENTRE PAGES**



**GOLDEN OPPORTUNITIES**  
Chemistry scoops coveted award for supporting female scientists  
**PAGE 3**



**CATCHING SPACE WAVES**  
Working on a revolutionary astronomical mission  
**PAGE 10**



**TOUR DE FORCE**  
Jane Neary on cycling around Sri Lanka for charity  
**PAGE 13**



EDITOR'S CORNER

## Path of progress

It's often said that military conflict advances technology and medicine. The overall picture is probably more nuanced (see below) but there are examples of [links between war and innovation](#) and indeed quite a number that have happened at the College. It could be argued that the discovery of penicillin at St Mary's Hospital in 1920 and its use in the Second World War spurred the [transformation of peacetime medicine](#). Certainly that's one of the key aims of The British Royal Legion Centre for Blast Injury Studies, which was officially inaugurated by Prince Harry last week (page 3). Already the Centre has made progress in understanding, and to an extent mitigating, blast injuries in servicemen and women. The challenge in the coming years will be to [transfer that knowledge to civilian medicine](#), to better respond to events like the Boston Marathon bombings (centre pages).

*For an analysis of the relationship between war and innovation in the context of WWII see Professor David Edgerton's (formerly Humanities) article in Issue 36 of the Imperial Magazine and online: [bit.ly/18FKvIU](http://bit.ly/18FKvIU)*

ANDREW CZYZEWSKI, ACTING EDITOR

Reporter is published every three weeks during term time in print and online. The next publication day is 13 November. Contact: [reporter@imperial.ac.uk](mailto:reporter@imperial.ac.uk)

## College scholarship supports more students than ever

A record number of 85 undergraduates have started their studies this year supported by a College scholarship set up to attract and support the brightest students.

Since the Rector's Scholarship Fund started in 2010 a total of 300 students have received funding, and the aim is to increase the intake to 110 for 2014–2015.

President & Rector Sir Keith O'Nions said: "The generosity of our alumni and other supporters means that the Scholarships will continue to help the next generation of talented students make the most of their time here."

Ang Wan Wei, a first year medic, said: "It is a great honour to be awarded this scholarship. It has certainly motivated me to achieve further excellence both in my

life and studies. Words cannot describe how excited and exhilarated I am to be joining Imperial!"

The Scholarships aim to attract the brightest students from every background, giving financial support to ensure they feel able to pursue their studies and activities beyond their degree, such as volunteering, internships or joining clubs and societies.

Scholar Kathryn Turner has now completed her first year in the Department of Earth Science and Engineering. She said: "I was so relieved when I got the scholarship. It's taken a lot of stress away. You don't want to be worried about your finances when you're studying. A lot of the donors have studied at Imperial and I want to show them I can do that too. And one day if I do well, then maybe I can help someone in the same position in the future."

—JESSICA ADAMS, COMMUNICATIONS AND PUBLIC AFFAIRS



## Celebration of success in supporting academic women

Imperial staff gathered last week to celebrate the College's recent successes in supporting academic women.

The event saw the formal presentation of the inaugural Julia Higgins Medal and certificates, which recognise individuals and departments that have made a significant contribution to the support of academic women at the College.

Named in honour of the first female Dean of the City and Guilds College and the first female Principal of the Faculty of Engineering, Professor Dame Julia Higgins FRS, FREng, the medal was awarded to Professor Lesley Cohen of the Department of Physics in recognition of her work in supporting colleagues.

Professor Cohen said: "It's marvellous to receive this award, I'll wear it proudly! It's particularly nice given it's named after such a special person."

"I think Imperial always wants to recruit the very best, and that means recruiting from the widest pool of talent possible. That's why support like this is so important, and why we need to keep on working to improve."

The evening was also an opportunity to celebrate Imperial's successes in the Athena Swan Awards over the past year, which includes a Gold Award for the Department of Chemistry (see right, page 3), and a Silver award for the College as a whole.

—JOHN-PAUL JONES, COMMUNICATIONS AND PUBLIC AFFAIRS

## Imperial College London

h /h-bar



## First round!

The new staff and postgraduate pub and café on Level 0 of Sheffield Building – known as h-bar – will launch on Monday 11 November and will be open weekdays from 10.00 to 23.00. Run by Campus Services and Imperial College Union, it offers international grab and go lunch options in the café and traditional pub fare from hearty pies to favourite tipples in the pub.

For more details and introductory offers visit [www.imperial.ac.uk/eatinganddrinking](http://www.imperial.ac.uk/eatinganddrinking)

## Prince Harry opens Blast Centre

His Royal Highness Prince Harry officially opened The Royal British Legion Centre for Blast Injury Studies at Imperial last week.



The Centre is the first collaboration of its kind in the UK, where civilian engineers and scientists work alongside military doctors, supported by charitable funding to reduce the effects of roadside bombs and Improvised Explosive Devices (IEDs).

During his tour of the Centre, Prince Harry visited a range of laboratories and spoke to researchers to learn more about the vital work being carried out to counteract the

devastating effects of IEDs.

Before unveiling a plaque to commemorate the Centre's official opening, the Prince said: "Today, I have had a brief insight into the work of the Centre including how injured cells are analysed. In the past I've met numerous service men and women injured in operations, many by IEDs and landmines. Their stories are harrowing and inspirational as I am sure you all know. Watching the IED simulation reminded me of the catastrophic trauma experienced by the human body during IED or mine-strikes. To me this makes their extraordinary stories of recovery all the more outstanding. This issue affects people on a global scale and whilst work at the Centre is strongly focussed on military casualties, its findings will no doubt also provide significant humanitarian benefits across the world."

Professor James Stirling, Provost of Imperial, said: "By drawing attention to this crucial area of research, Prince Harry does us a great service. Blast injuries afflict far too many armed service personnel and civilians, and this new Centre offers hope to current and future victims of war."

*Too see a video story of the event visit:*  
<http://youtu.be/215Jcq8tYc8>

—COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS



## Successful formula for women in Chemistry

Imperial's Department of Chemistry has become one of only four university departments across the UK to win an Athena SWAN Gold Award.

The award recognises success in growing the number of women students in science, increasing equality in career progression and influencing other departments to do likewise.

This is the first gold award for Imperial, which already has an institutional silver award as well as six silver and four bronze departmental awards.

Professor Tom Welton, Head of the Department of Chemistry, said: "I am absolutely delighted at this fabulous result! When I became Head of Department in 2007, I realised that the future success of the Department would depend, not only on the

scientific excellence of our individual members, but on how well we work together.

"I made it my challenge to create a culture where we can all give mutual support to each other on a daily basis. This benefits everyone in the department, but women especially."

The Athena SWAN scheme is run by the Equality Challenge Unit, a charity that supports equality and diversity for staff and students in higher education across the UK. The awards have been running since 2005, when Imperial was a founding member.

Judges behind the award highlighted how the Department of Chemistry has shown national leadership in promoting diversity. For example Imperial set up the Irène Joliot-Curie national careers conference for women in science with the University of Warwick, which has now been officially taken up by the Royal Society of Chemistry.

—SIMON LEVEY AND KERRY NOBLE, COMMUNICATIONS AND PUBLIC AFFAIRS

### in brief

#### Imperial takes science to the streets

Big bangs and space debris were on show as researchers pedalled science around South Kensington with the Imperial tricycle at the end of September. Academics and PhD students from Imperial took part in activities as part of the Royal Borough of Kensington and Chelsea's Celebration of Science. Research in Motion – the programme of Imperial's lunchtime events – kicked off with liquid nitrogen ice cream on Kensington Gore prior to the incredibly successful TEDxAlbortopolis on Monday afternoon, and researchers were still in action into the late hours of Friday at Science Uncovered 2013 at the Natural History Museum.



#### Susan Gibson to head Graduate School

Professor Susan Gibson will become the new Director of the Graduate School starting from 1 November, reporting to Professor Debra Humphris, Vice-Provost (Education). She will divide her time equally between her new role and her continuing position as a Professor of Chemistry in the Department of Chemistry, where her research interests lie at the border between organic synthesis and transition metal chemistry. In 2003, Professor Gibson received the inaugural Rosalind Franklin Award of the Royal Society and in 2013 she was appointed OBE for services to Chemistry and science education.

#### Top tweet

"Bad loss Sunday to West Ham-@ImperialBiz should not lose to lesser Unis. We will deploy our staff with a game plan and execute well!"

Professor Anandalingam, Business School Dean responds to a question on twitter from @Lxs: "As keen Spurs supporter, do you deploy your @Imperial-Biz squad like a football coach?"





## Alumni reunite on US west coast

US alumni gathered in Los Angeles and San Francisco on 23 and 26 September to reunite and catchup on College news.

Imperial's President & Rector Sir Keith O'Nions hosted the Californian events, updating 100 alumni on plans for Imperial West, the success of the Rector's Scholarships scheme, and Imperial's strengthening academic reputation, among other developments.

At the San Francisco reception, guest of honour British Consul General Priya Guha, whose husband is an Imperial alumnus, drew a comparison between plans for Imperial West and successful technology initiatives in California. She said: "When Imperial visits the Bay Area it is a meeting of minds. Both Imperial and Silicon Valley are hubs of technological innovation."

At the events, graduates from across the generations mingled, networked and swapped stories of their time at the College.

For Philip Varley, who graduated in Chemical Engineering and Chemical Technology in 1979, "the academic rigour at Imperial was – and remains – second-to-none" imparting skills that he still uses when making business decisions.

Natasha D'Silva, who graduated with an MSc and diploma in Environmental Policy in 2010, now works as a sustainability consultant for a firm founded by a fellow Imperial alumnus. She said: "The network of people is so important – in fact it was the friendly environment that drew me to Imperial."

Following the events, many US alumni declared their intention to return to Imperial and take advantage of the College's new Alumni Visitor Centre.

—ANDREW SCHEUBER, COMMUNICATIONS AND PUBLIC AFFAIRS

## New home for Translation Studies Unit

Imperial's Translation Studies Unit has moved to UCL to join its Faculty of Arts and Humanities.

The move sees the Unit capitalise on its existing long-term collaboration with translation experts from the Faculty, allowing it greater scope to develop its research and education activities in the future, and follows a review of its activities by the College in 2013.

Dr Jorge Díaz-Cintas, Head of the Translation Studies Unit, said: "We are very excited about the opportunities that this move to another world-class

institution like UCL will bring for us. UCL has a great track record in translation and we have been collaborating with them for many years. We are really looking forward to working with our new colleagues to make sure that translation continues to be as highly successful in our new home as it has been at Imperial during the last 12 years."

Professor Debra Humphris, Vice-Provost (Education) at Imperial added: "This move draws the TSU into a greater critical mass of translation expertise and enables it to go from strength to strength in the future. We wish all of the Unit's members the very best in their future work."

—JOHN-PAUL JONES, COMMUNICATIONS AND PUBLIC AFFAIRS



## São Paulo partnership signed

Imperial academics will gain extra support for collaborations with researchers in Brazil's largest city thanks to a new agreement.

On 25 September, the São Paulo Research Foundation, FAPESP, signed a memorandum of understanding with Imperial to provide matched seed-funding for research partnerships.

The funding, worth up to £24,000 for each project, will facilitate Imperial scientists as they form joint initiatives with their peers at leading São Paulo institutions, such as the University of São Paulo, Unicamp, UNESP, and the National Research Centre for Energy and Materials. Up to five research projects will receive funding during the first 12 months of the five year agreement.

In the past decade alone, Imperial researchers published more than 1,100 papers in collaboration with Brazilian partners.

Brazilian Ambassador Roberto Jaguaribe was guest of honour at the ceremony where he witnessed Imperial Provost Professor James Stirling and FAPESP President Celso Lafer sign the agreement.

Professor Stirling said: "São Paulo's research interests in areas like renewable energy, offshore oil technology, mining, aeronautics, environmental science, agriculture and medicine strongly complement those of the College. Our collaborative work in these areas not only pushes the boundaries of scientific endeavour, but also translates those discoveries into applications that benefit our economies and societies. This is good for São Paulo, good for London and good for the world."

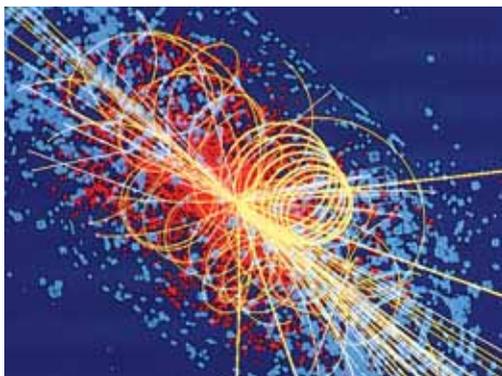
—ANDREW SCHEUBER, COMMUNICATIONS AND PUBLIC AFFAIRS

## media mentions

—MAXINE MYERS, COMMUNICATIONS AND PUBLIC AFFAIRS

### Nobel for Higgs discovery

BBC NEWS ► 08.10.13



Peter Higgs and Francois Englert have been awarded the 2013 Nobel Prize in physics for their work on the theory of the Higgs boson. Commenting on the award Emeritus Professor Tom Kibble (Physics) told the *BBC*: “I am glad to see that the Academy has recognised the importance of the theory and the prediction of the Higgs boson. My two collaborators, Gerald Guralnik and Carl Richard Hagen, and I contributed to that discovery, but our paper was unquestionably the last of the three to be published in 1964. My sincere congratulations go to the two prize winners, Francois Englert and Peter Higgs.”

### How ballerinas stay spinning

THE DAILY TELEGRAPH ► 14.10.13

A study by Imperial has unveiled structural changes in professional ballerinas’ brains that help them pirouette without becoming dizzy. In a test, 29 ballerinas and 20 female rowers of a similar age and fitness level were spun around in rotating chairs in a dark room. Afterwards the dancers experienced a significantly shorter period of dizziness. MRI scans then revealed differences in two parts of the ballerinas’ brains. Dr Barry Seemungal (Medicine) told *The Daily Telegraph*: “Their brains adapt over years of training. If we can target that same brain area or monitor it in patients with chronic dizziness, we can begin to understand how to treat them better.”

### Blueprint for universal flu vaccine revealed

THE INDEPENDENT ► 22.09.13

Scientists have discovered the ‘blueprint’ for a revolutionary universal flu vaccine that could protect against all strains of seasonal influenza – even deadly new viruses never

✉ JOIN OUR MAILING LIST  
for regular news alerts:  
[www.imperial.ac.uk/media/jointsignup](http://www.imperial.ac.uk/media/jointsignup)

encountered before, *The Independent* reported. More than 300 staff and students at Imperial were recruited for the study at the start of the 2009 flu pandemic. Those who avoided severe illness were found to have more CD8 T cells, a type of virus-killing immune cell, in their blood. Professor Ajit Lalvani (National Heart and Lung Institute) and colleagues are now working on a vaccine that encourages the body to make more of these cells. “Unlike antibodies, they target the core of the virus, which doesn’t change, even in new pandemic strains.”

### Mastering management

THE FINANCIAL TIMES ► 20.09.13

Writing for the *Financial Times*, Yanjing Feng (Business School) talks about her experiences at Imperial on the MSc Management programme. “After four years studying journalism in China, I was eager to explore the outside world and broaden my horizons – and I wanted to start in London. My next 12 months was a journey full of highs and lows. At times, I could not help but wonder whether I had made the right choice, but now, writing this at a desk in the *Financial Times* offices at Southwark Bridge, it’s clear to me that going to Imperial was one of the best things I have done in my life.”

## awards and honours



### CAMPUS SERVICES

#### Four-star boon for College visitors

Staff in Campus Services responsible for the College’s summer accommodation business are celebrating the award of four-star status to both Beit Hall and Prince’s Gardens. Quality in Tourism

(previously known as Visit England) carried out an assessment in September. Each year during July, August and September, the student halls of residence are transformed into bed and breakfast accommodation, and are open to guests from all over the world.

### ENGINEERING

#### Major EU grant to make artificial blood

Professor Sakis Mantalaris (Chemical Engineering) has been awarded a €2.5m five year Advanced Grant by the European Research Council (ERC) for a project that could find a solution to the problem of blood donor shortage. Professor Mantalaris and colleagues are developing a new method for the mass

production of red blood cells which could have major clinical impact not only on blood supply but also in the treatment of blood cancers such as leukaemia and lymphoma.

### NATURAL SCIENCES

#### African farmers set to benefit from Imperial research

Agriculture for Impact, a research initiative based out of Imperial, has just received a \$1.5 million grant from the Bill and Melinda Gates Foundation to continue its research and advocacy efforts related to science and innovation for African agriculture. Under the leadership of Professor Sir Gordon Conway (Centre for Environmental Policy), the team will provide information and expertise to

enable decision makers in the European Union to provide more effective support to benefit smallholder farmers.

### NATURAL SCIENCES

#### Nominations for female physicists

Two Imperial scientists were nominated for the Very Early Career Woman Physicist of the Year award, organised by the Institute of Physics (IOP) and sponsored by Shell. Stephanie Walton, a fourth-year PhD student and Dr Rachel White, a postdoc (both Physics) were both runners up at an event held at the IOP’s London centre on 16 October, which was ultimately won by Alice Taylor, from the University of Oxford.

# Deep impact of explosive devices

Researchers studying British soldiers who fought in Afghanistan have highlighted pituitary hormonal problems that commonly result from blast injuries.

Soldiers with injuries affecting the pituitary gland may suffer psychological and metabolic symptoms which impede their recovery.

The recent conflicts in Iraq and Afghanistan have seen rapid advances in personal protective equipment and in the medical management of severe trauma. These gains have meant that increasing numbers of soldiers are surviving previously fatal and complex injuries.

The current study, by Imperial and the Royal Centre for Defence Medicine, looked at 19 British soldiers with moderate to severe brain injury caused by blasts from improvised explosive devices (IEDs) while on duty in Afghanistan, and a group of 39 individuals with moderate to severe traumatic brain injuries caused by road traffic accidents, falls and assaults.

It found that a much higher proportion of soldiers with



blast injuries had pituitary hormone problems (32 per cent) than in the non-blast control group (2.6 per cent).

One in five of the soldiers ended up receiving hormone treatment with growth hormone, testosterone and/or hydrocortisone – a replacement for the stress hormone cortisol.

Dr Tony Goldstone (Institute of Clinical Science) who led the study, said: “The results emphasise the importance of actively screening for pituitary problems in all soldiers and others who have had moderate to severe brain injury from exposure to blast. This will enable identification of those who may benefit from hormonal treatments to aid their rehabilitation, recovery and quality of life.”

—SAM WONG, COMMUNICATIONS AND PUBLIC AFFAIRS



## What is the pituitary gland?

The pituitary gland is a small organ at the base of the brain. It secretes several hormones that regulate the release of many other hormones produced in different parts of the body. In adults, a lack of growth hormone can produce symptoms including tiredness, low mood, poor emotional and social well-being, as well as increasing body fat, reducing muscle and thinning bones. These problems can be reversed with growth hormone replacement (though adults will not grow any taller). Lack of testosterone can cause tiredness, sexual problems, increased body fat, reduced muscle and thinning of bones. Lack of cortisol can produce tiredness and worse outcomes during illnesses such as infections.

## Pain relief

New research on the most commonly used anaesthetic drug could help unravel a long-standing mystery about how it induces a pain-free, sleep-like state.

General anaesthetics are administered to tens of millions of people every year in hospitals, where they are used to sedate patients undergoing surgery. Despite this, scientists have yet to understand how these drugs interact with their targets in brain cells to achieve this effect.

Following years of research on propofol, which has become the most commonly used anaesthetic since it was introduced in the 1980s, researchers at Imperial and Washington University School of Medicine have identified exactly how the drug acts at a molecular level.

This could help scientists to design new versions of the drug that reduce the risks involved in surgery and ultimately improve patient safety.

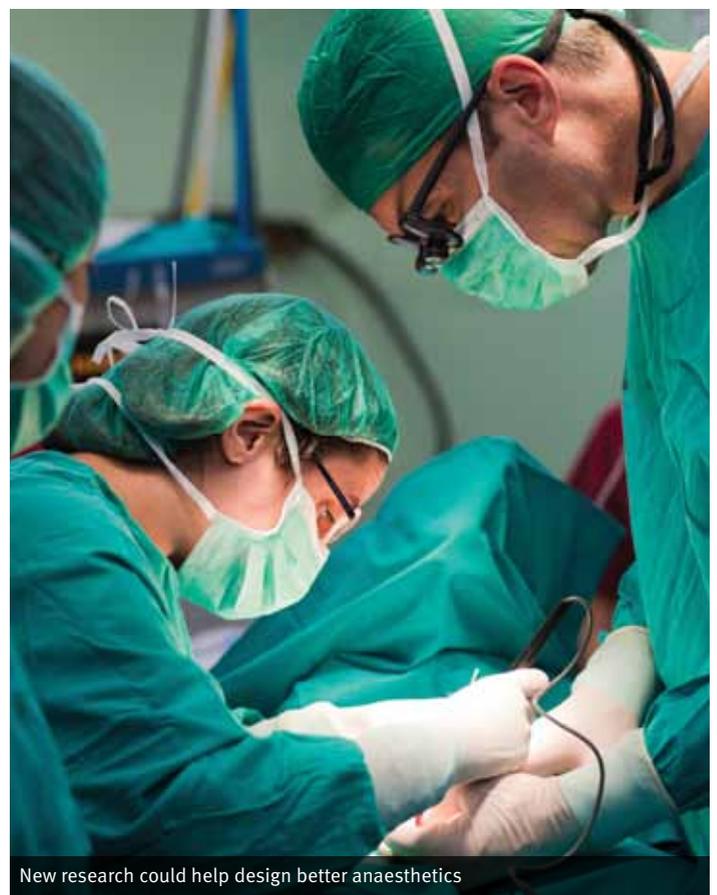
“The job of the skilled anaesthetist is so important because in addition to the desirable effects of anaesthetics which make surgery possible, current anaesthetics can have unwanted effects on the heart, on blood pressure and can also interfere with breathing during surgery,” said the study’s co-principal investigator Professor Nick Franks (Life Sciences).

Propofol induces anaesthesia during surgery by interacting with receptors in the brain called gamma-aminobutyric acid type A (GABA<sub>A</sub>) receptors preventing nerve cells communicating with their neighbours, leading to unconsciousness.

Using a molecule that closely resembles and mimics propofol but has an added marker, they were able to see exactly where propofol binds.

The scientists will now identify binding sites of other anaesthetics. They believe their approach also can be used to study other types of drugs, such as psychiatric agents and anti-seizure drugs.

—SIMON LEVEY, COMMUNICATIONS AND PUBLIC AFFAIRS



New research could help design better anaesthetics



## Bear conservation conundrum for Croatia

**The recent enlargement of the European Union to include Croatia could inadvertently create problems for the brown bear population in the country, according to conservation scientists.**

Croatia has been managing its brown bears as game animals, meaning they can be hunted; but under EU legislation, bears are a protected species and can only be shot if they are deemed to be problem animals.

This might seem to be a positive outcome for the bears. However, it could lead to reduced tolerance for bears among local people, because the local economy will lose valuable revenue from hunting, according to a study by researchers from Imperial and Zagreb University.

Under the Croatian hunting system, 10 to 15 per cent of the total bear population can be killed each year, and individual hunting organisations receive the right to hunt a portion of

this quota. Under this system, the local economy has benefited and the bear population has remained stable.

Professor E.J. Milner-Gulland (Life Sciences) who led the research, said: "There is strong evidence that Croatia's current system is beneficial for both local people and the bear population, and changing it could result in more tension between people and bears.

"We are not implying that trophy hunting is an appropriate management option for all brown bear populations. However, not every country is the same, and there needs to be regional variation in conservation policies so that people are able to manage their own populations of high priority species successfully."

At present, trophy hunting for bears is still permitted in Croatia, under derogation from EU law, but the researchers are keen to see a more long-term solution.

—LAURA GALLAGHER AND ROSEMARY PETERS,  
COMMUNICATIONS AND PUBLIC AFFAIRS

## New anaemia test gives result in 4 min

**A rapid way of diagnosing anaemia using microwave technology has been developed by scientists.**

There are several different types of anaemia, which can cause a range of symptoms including lethargy, jaundice, tiredness and shortness of breath. It is generally the result of an iron deficiency. According to the World Health Organisation, it affects up to a quarter of the world's population at any given time.

A researcher from Imperial is developing technology for a portable finger-prick device to diagnose anaemia type that could potentially provide a quick and effective alternative to sending blood samples to a laboratory for analysis. They believe it would be most useful for doctors treating patients in developing countries, particularly remote rural regions, where access to such laboratory analysis is limited.

If their efforts are successful, the team predict the device will be able to carry out a finger-prick analysis in approximately four minutes, whereas lab analysis can take up to two weeks in developed countries and longer in developing nations

Dr Toby Basey-Fisher (Materials) said:

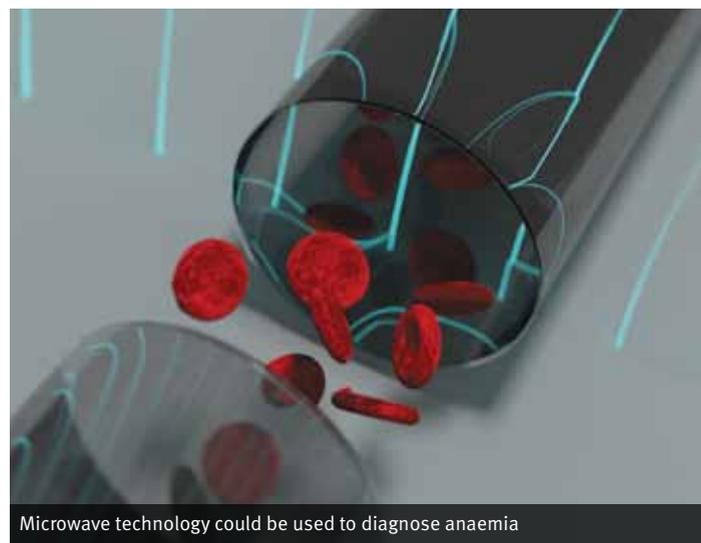
"Anaemia can be debilitating and if left

untreated, it can make people more susceptible to illness. This is especially so for people living in developing countries who may not be able to afford proper tests."

The team are in the process of patenting their technology and intend to commercialise their product in the near future. Their aim is that within 3 years, a portable device will be available commercially for use in accident and emergency wards, homecare and at the point of care for patients in developing countries.

—COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS

“Anaemia can be debilitating and if left untreated, it can make people more susceptible to illness. This is especially so for people living in developing countries who may not be able to afford proper tests.”



Microwave technology could be used to diagnose anaemia

# Explosive insights

How Imperial academics and military experts are collaborating to better understand the effect of explosive devices on the human body.



Twelve years ago this month, at the start of the military campaign in Afghanistan, the term 'IED' (improvised explosive device) would have had little meaning in the public consciousness. But now, after more than a decade of war, it carries a particular tragic poignancy — linked as it is to news reports of terrible casualties and fatalities of soldiers and civilians.

Blast injuries are not unique to the present conflict but what is different now is that more and more victims are surviving, due to improved first aid and medical evacuation procedures in the immediate aftermath of incidents.

Yet, there is still much we can do in a preventative sense beforehand to limit the severity of injuries when IED incidents do occur and also in terms of aftercare to minimize the long-term repercussions.

That was the impetus behind the creation of The Royal British Legion Centre for Blast Injury Studies (CBIS) at Imperial in 2011. Building on the existing work of the Blast Biomechanics and Biophysics Research Group at the College, the centre provided a unique opportunity for civilian and military collaboration (see box out opposite).

“Military medical care is fantastic and has developed over the past decade due to war.”

“Military medical care is fantastic and has developed over the past decade due to war,” says Professor Anthony Bull (Bioengineering), Director of the CBIS. “We feel now is the time to capture that and learn from these injuries not just for future warfare, unpleasant thought as that is, but also for knowledge transfer to civilian medical care and protection. That is the premise of the Centre.”

The problem is not a straight forward one though — from the physical nature of the blast wave in the microseconds after the explosion to the long term effects victims experience many years afterwards — there are many things we do not fully understand.

As a consequence the CBIS's approach is very multifaceted gathering experts from different specialities — engineers, physicists, biologists and clinicians.

Since the Centre launched two years ago one important piece of research has been the collection and analysis of data from the conflict itself. In fact they have recently published an analysis of the largest dataset of IED fatalities with complete CT scans and autopsies available — with the

permission of Her Majesty's Coroner.

That has shown that the primary cause of death for soldiers caught by an IED in the field is blood loss; while for troops in a vehicle it is head injuries, secondary to a condition called blast lung.

“We only have that information available to us because we've embedded military personnel in the centre. That really enabled us to explore the reasons and the cause of death, which then allows us to explore what we think the next level of survivorship might be, given better levels of protection or care,” Anthony says.

## Re-creating the blast

Of course there's only so much information one can ascertain about a blast event after the fact. There's a need to reproduce aspects of the explosion as accurately as possible in the lab and study the results in detail in order to identify preventative solutions. The CBIS now has an enviable suite of specialist equipment and methodologies to do just that.

One of the headline pieces of kit is

the bespoke anti-vehicle, underbelly, blast-injury simulator (AnUBIS), which enables academics to understand in more detail how roadside bomb blasts impact on the lower limbs.

Meanwhile, the split Hopkinson bar device simulates how shockwaves from roadside blasts affect people at the cellular level. Usually used to test the stress-strain response of solid materials, it has been cleverly adapted by the team to examine cells. Essentially, it is a pneumatically-operated projectile that strikes a bar, generating a stress wave which is transmitted to a single layer of cells on a coverslip, or suspended within a medium.

Outside of the lab, under the watchful eye of their military collaborators, the CBIS team even performed some live explosive tests with stripped-out vehicles and biological surrogates out in the field this summer and are currently analysing that data.

In an effort to tie the whole story together – from molecule and cells, through to tissues, organs and limbs – engineers at the Centre are constantly working to develop accurate computational models of blast waves and their effects. This will be particularly useful in devising and validating preventative measures.

“We feel our efforts have already had some effect in the theatre of war,” says Anthony. “We’ve advised on sitting posture in vehicles and also some of the equipment such as blast mats, boots and medical treatment – for example how you use pelvic binders. We’ve also been involved in improving decision making regarding the long and medium term outcome of certain type of injuries and how that influences your early treatment.”

### New phase

The CBIS has now moved into new dedicated labs with the ability to perform experiments at much higher blast energies. Going forward, one of the most challenging research questions the Centre is trying to understand is the long term side effects of blast injuries at the fundamental biological level.

“We are beginning to get a really good handle on what the body experiences from the outside, but then how that’s transmitted through the body and what the cells are experiencing and subject to is really

tough,” says Anthony.

One painful and debilitating complication that can develop over time in the wounded limbs of blast victims is the abnormal formation of bone in muscle tissue, outside the confines of the skeleton where it should remain – a process known as heterotopic ossification. One theory is that stem cells in the limb, which have the potential to form multiple different tissue types, are somehow nudged into becoming bone by the high-intensity blast waves. That is something being investigated by biologists at the Centre.

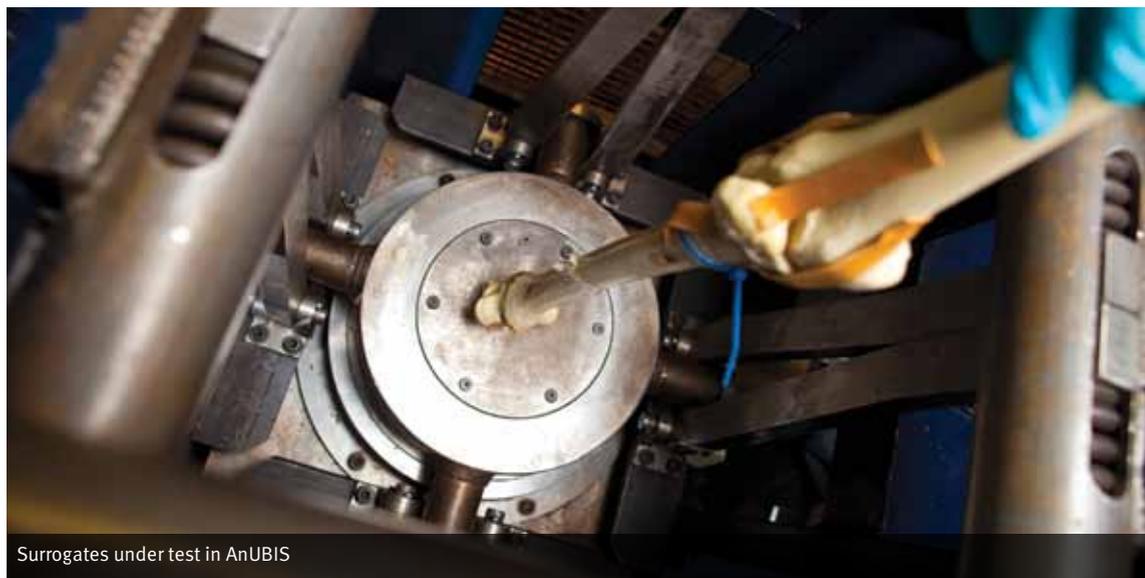
In addition, more than half of people injured by IEDs show evidence of nerve damage that persists long after the tissue damage has healed and often distant to the site of direct impact.

“We feel our efforts have already had some effect in the theatre of war.”

preferable to salvage the knee because it can better take the load of various prosthetics than say a trimmed thigh bone. That calls for specialist knowledge and techniques.

As Anthony points out, practical solutions of this sort are a very important part of what CBIS is about and the legacy it hopes to leave. Anecdotal evidence suggests that there are perhaps 1000 blast injuries of this type every month around the world through landmines, terrorism or accidents at munitions or fireworks factories.

“Much like the mission statement of the College, which is about research and its application to industry and healthcare, our aim and motivation is to have an effect on blast injuries pretty quickly.”



Surrogates under test in AnUBIS

“Basically you can’t feel or move your limb,” Anthony says. “And if you’ve lost a limb and one of the surviving limbs is not useful to you that is a significant problem.”

The cause of these deficits is not known, but the answer may lie with specialised Swann cells which surround nerve fibres as an insulating layer, facilitating fast electrical impulses that are needed for complex movements and walking.

### Lasting legacy

The CBIS recently attracted a grant from charity ‘Find A Better Way,’ which will help to train trauma surgeons in countries where land mines are a real problem to the civilian population. For example when lower leg amputations are necessary it is

### Better together

The establishment of a collaborative centre with military and civilian clinicians, scientists and engineers working together to address all aspects of blast injuries is a first for the UK. It was only made possible due to an £8 million research grant from The Royal British Legion – a charity that has been helping the Armed Forces community past and present for 90 years.

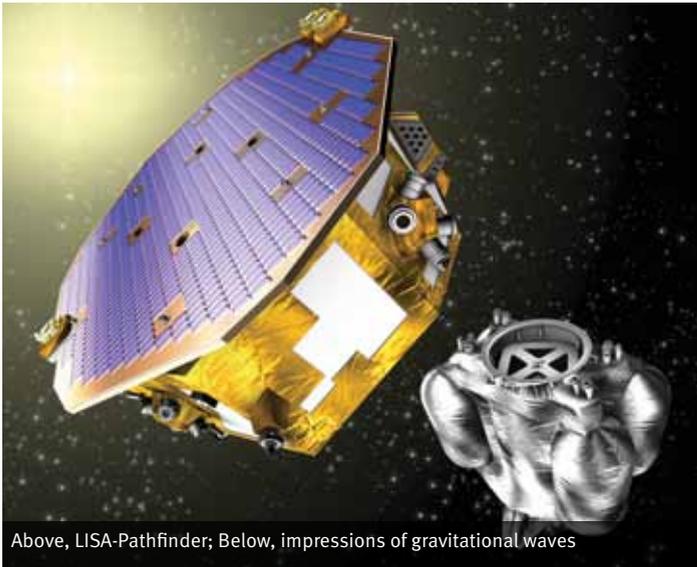
Chris Simpkins, Director General of The Legion, explained the charity’s involvement:

“The Centre for Blast Injury Studies aims to improve treatment and recovery for those injured serving their country, as well as to reduce the number and extent of blast injuries in the first place. Enhancing the quality of life for the injured, potentially reducing their long-term disability and dependency, while protecting our service men and women better in the future, is of major importance.

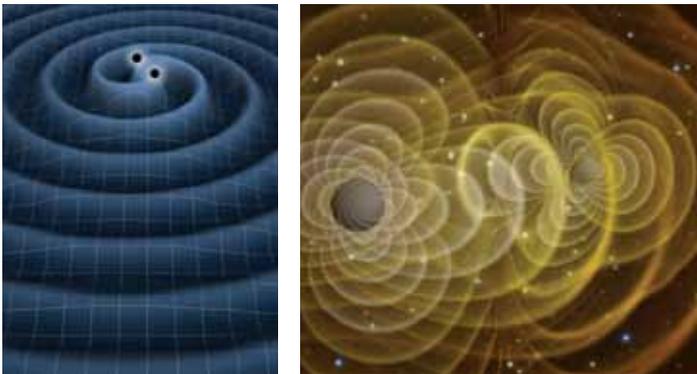
“It chimes perfectly with the support The Legion gives to the whole serving community and we are therefore very proud to be supporting Imperial’s pioneering and world-class work in this field. We are making a long-term investment in the welfare of all who serve.”



# CATCHING SPACE WAVES



Above, LISA-Pathfinder; Below, impressions of gravitational waves



Imperial scientists are working on a space mission that will listen to violent cosmic events that send out ripples in the very fabric of the universe.

Probably one of the first real bits of physics we learn at school is how the force of gravity keeps us all from floating off into space — a lesson helped to stick by a certain apocryphal tale about a scientist and a falling apple.

But gravity is actually rather more complex and profound than this — certainly more complex than Isaac Newton could have imagined. In 1916 Einstein came up with his famous general theory of relativity, which completely redefined gravity. No longer was it thought of as simply

a mutually attractive force between objects — but rather a deformation in the underlying fabric of the universe, known as space-time. Objects with mass distort space-time, essentially stretching it in all directions, and in doing so ‘tugging’ at other nearby objects, affecting their motion.

One feature of Einstein’s theory was that when massive bodies move asymmetrically, they will create gravitational waves that ripple out through the fabric of spacetime at the speed of light. Prime suspects thought to produce gravitational waves are binary systems, where two stars orbit each other around their common centre of gravity. But gravitational waves are also likely to be given off by violent cosmic events such as the merging of black holes and even the big bang itself.

Professor Tim Sumner (Physics) and his team have been investigating the possibility of observing gravitational waves since the early 1990s.

“It would open up a whole new way of doing astronomy,” says Tim. “Over the centuries astronomy has grown to cover more and more of the electromagnetic spectrum, seeing more colours if you like. But it is always just looking, it’s always visual. With gravitational waves it’s analogous to adding a sound channel.”

In 2015 they will finally get that chance with a European Space Agency (ESA) led mission named the Laser Interferometer Space Antenna (LISA)-Pathfinder.

But how does one look for something that’s never been seen before and does not give off any light or an electromagnetic signature?

All types of waves, whether sound waves or ocean waves, create a periodic squashing and stretching effect in the medium in which they are travelling. The key to actually detecting this is to try and measure the squashing and stretching using two fixed points. The concept is not unlike having two corks floating on the surface of the sea — the distance between them will expand and contract as a wave passes. And that’s what ESA scientists are trying to do with LISA-Pathfinder.

## On the right path

They plan to send a spacecraft to a special point between the Earth and the Sun, known as the L1 Lagrangian point, where their combined gravitational pull ‘locks’ the spacecraft in a stable position, orbiting the Sun at the same speed as the Earth.

This is important because inside the spacecraft will be a chamber containing two proof masses (our ‘corks’) floating precisely 35cm apart. Lasers will watch over them with an eagle eye to spot any deviation in that distance that might indicate a stretching or squashing

in spacetime and the passing of a gravitational wave. The lasers being built will be able to detect relative movement of the proof masses of around one billionth of a millimetre (one picometre).

With such a staggering level of sensitivity at stake, it’s absolutely vital that any potentially confounding sources of error are mitigated. And that’s where the Imperial team comes in.

## Like clockwork

Tim can trace his involvement in the mission way back to the early 1990s when they were working on a different mission, which also required the use of proof masses. They discovered that, rather inconveniently, cosmic rays in space could penetrate a space craft and charge the proof masses, causing them to interact with the chamber walls and spuriously offset the distances.

Although somewhat throwing a spanner in the works of any mission planning to carry proof masses, the Imperial team also thankfully came up with a solution. They found by chance that having UV on a spacecraft seemed to be an excellent way of discharging surfaces and so negating the problem of charged proof masses.

“We then found ourselves more or less taking responsibility for that aspect of LISA-Pathfinder,” says Tim. “Really it was a series of coincidences that led us here and we’ve stuck with it since then because of the fabulous science we’re going to do at the end — not because we’re interested in discharging proof masses as such!”

“It would open up a whole new way of doing astronomy.”

# inside\*

## story

### mini profile

## EJ Milner-Gulland

EJ Milner-Gulland completed her PhD at Imperial in 1991 and has been an Imperial academic since 1999. Based at Silwood Park Campus, she is now Director of the Grand Challenges in Ecosystems and the Environment Initiative.



**How is this different to what Life Scientists at Imperial were doing before?**

Actually the initiative is built upon the foundations of the Centre for Population Biology (CPB), which was a world-class centre that also emphasised workshops, visitors and training. With the CPB drawing to a close in 2009 the Grand Challenges initiative has brought in new staff, at all levels, and this has led to a really exciting and forward-thinking atmosphere.

**What challenge are you personally taking on?**

My first challenge is to make the initiative a success! In terms of my own research, I work mostly on the first two challenges. That includes understanding how to work with local people to make bushmeat hunting sustainable and also how to improve human wellbeing while at the same time conserving biodiversity.

*The Grand Challenge Initiative held a launch event at Silwood Park on 24 October. To find out more or get involved in the research and teaching programme, contact [gceeadmin@imperial.ac.uk](mailto:gceeadmin@imperial.ac.uk)*

—SIMON LEVEY, COMMUNICATIONS AND PUBLIC AFFAIRS

**What are the Grand Challenges?**

We have identified three grand challenges; difficult and important issues for the environment and society which urgently need new fundamental and applied research in order to be tackled effectively. They are sustainable food and water supplies, managing target species in complex environments, and predicting and mitigating the effects of environmental change.

**Why is Imperial's approach to tackling these unique?**

The Grand Challenges Initiative aims to be an international hub which promotes creative and interdisciplinary thinking. We have world-class scientists in our team, but we aim to be more than the sum of our parts; by collaborating and reaching out to people in other disciplines and institutions, we will produce novel and innovative research with a focus on real-world impact.



## Black gold

**The dashing gents in the photograph above may look like extras from *The Motorcycle Diaries* but they are in fact Imperial undergraduates of the Technology of Oil degree on a field trip in 1945.**

The image attests to the College's rich heritage in petroleum related research and education that goes back 100 years.

The College is celebrating the milestone this year with a Petroleum Centenary Fund that will provide scholarships, bursaries and work placements in industry, giving undergraduates and postgraduates from across the globe the chance to study at Imperial.

The Department of Earth Science and Engineering also held a celebratory conference that focused on the future of petroleum geoscience and engineering, which attracted industry leaders and academics from around the world.

Head of the Department, Professor Jan Cilliers says: "Oil is vital to the world economy. It not only powers our ships, planes and cars, but is a key ingredient for making life saving pharmaceuticals, plastics and even

fertilizers to help our crops to grow. Over the last 100 years Imperial students and academics have played a pivotal role in the growth and development of the industry and we are celebrating this milestone. We hope the establishment of the Petroleum Centenary Fund will be a lasting legacy that highlights our commitment to educating future generations of engineers."

Petroleum related studies first began at Imperial in 1911 when Professor William Watts, former Head of the Geology Department at the Royal School of Mines, set up a series of lectures on oil field geology. The course consisted of six lectures that cost students one pound and ten shillings, which is the equivalent of £1.50 in today's money. It proved so popular that it was expanded in the 1912–1913 academic year, consisting of twelve lectures that were supplemented by laboratory work.

*Read the reflections of Imperial academics on the history, research, industrial partnerships and teaching that have helped to make Imperial a world leader in the field:*  
<http://bit.ly/1aYJVCQ>

—COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS

Student blogger Rachel's  
**FINAL BLOG!**

blog  
SPOT



One week ago I finished my MRes at Imperial! The relief. The sleep. The relaxation. Well the course was pretty tough; what with working full time in the lab, writing the library dissertation, keeping on top of reading and lab write up, you're always busy! Together with this I was making the most of London, as well as applying for PhDs and internships, volunteering, mentoring, trying to keep fit and have a good social life. I even managed to intern at the British Science Festival (shown above).



## Students display assistive technology of the near future

It's a familiar and sometimes tragic scene played out along coastlines around the world – a swimmer or surfer gets out of their depth and caught by powerful rip currents, unable to escape.

Coming to the rescue at a beach near you could be remote control quadcopter with a buoyant chassis that flies out to the swimmer who can then grab on until help arrives.

This 'ARC' device was one of a number of prototype technologies showcased this month as part of the Rio Tinto Sports Innovation Challenge. Now in its third year, the challenge involves teams of students from the MSc in Innovation Design Engineering course, which is run jointly between Imperial and the Royal College of Art.

As part of their studies, they develop technologies to potentially save lives and improve the performance of Paralympians and the wider community of people living with disabilities.

Dr Dominic Southgate (Bioengineering) Co-ordinator of the Challenge says: "The Challenge is designed to run until the end of 2016 – just in time for the Rio Paralympic Games. The ultimate aim is to have an innovation developed by our students for use during the Games. The fantastic technologies on display this week are a testament to the imagination and skills of our students. This is also an opportunity to welcome the next cohort of students to the Challenge. We look forward to seeing where their imagination takes them."

To find out about more prototypes developed as part of the challenge visit: <http://bit.ly/GGUVYf>

—COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS

## Researchers respond to the UN's climate change report

VOX  
POP

The Intergovernmental Panel on Climate Change (IPCC) presented the findings of its landmark fifth report on climate change science this month in Stockholm. We asked researchers at Imperial working with the Grantham Institute for Climate Change to share their thoughts.



**Professor Sir Brian Hoskins, Director of the Grantham Institute for Climate Change**

This report significantly strengthens the consistent message from the four previous IPCC assessment reports: climate change is happening and we are conducting a dangerous experiment with our planet. It presents comprehensive evidence of change in many different aspects of the climate system, from the ice sheets to the deep ocean.



**Professor Joanna Haigh, Head of the Department of Physics**

The impact of greenhouse emissions from human activity on the climate system is clear and many of the changes now underway are unprecedented. But the climate is influenced by other factors, which can have an effect over annual and decadal time-scales. This does not alter the overall picture.



**Dr Simon Buckle, Policy Director for the Grantham Institute for Climate Change**

The fact that all the governments agree the wording on the basis of the scientific evidence means that the final report should carry far more weight with decision makers.



**Nilay Shah, Professor of Process Systems Engineering**

Energy systems will take decades to change but we need to start now with major drives to improve energy efficiency and a determined transition to a low-carbon energy system. This means lowering the carbon intensity of electricity, using renewables such as solar and wind, as well as carbon capture and storage and nuclear power.

# Tour de force

Many at the College will be familiar with the persuasive powers of Lord Robert Winston, Professor of Science and Society, when it comes to drumming up support for charitable causes. But when Jane Neary, Director of Campus Services, offered to repay Lord Winston a small favour, she hadn't expected it to involve cycling 400 kilometres around Sri Lanka through searing heat and severe fatigue.

But that's exactly what she found herself doing in October, along with Debby Shorley, former Director of Library Services, Yvonne Konieczna (Surgery and Cancer) and 63 other women in aid of Women for Women and the Genesis Research Trust, which Lord Winston chairs. The charity funds ground-breaking medical research to support the prevention, diagnosis and treatment of a wide range of devastating conditions affecting women and babies.

Talking about her experiences on the epic journey, Jane said: "I think the Sri Lankans thought we were mad at first. Quite quickly word got out on the island that these crazy women in pink shirts were going



From left to right: Jane Neary, TV presenter Fern Britten and Debby Shorley

“You felt like you were on the Tour de France because everyone came out of their houses to line the roads and cheer us on.”

to be coming through!

“You felt like you were on the Tour de France because everyone came out of their houses to line the roads and cheer us on and even with limited English shouting ‘go faster lady, go faster!’” Still, it was no barrels of laughs and at times Jane and company had to dig deep, cycling 90km a day in temperatures of upto 42°C across tough terrain. And it wasn't entirely without incident either.

“Near the end of the trip a bus came screaming round us closely

followed by car. They seemed to have some sort of altercation and nearly crashed into each other as they disappeared over the hill. Debby and I looked at each other as if to say ‘wow, that was close’. And at that moment a herd of five elephants ran out in front of us from the undergrowth with a baby in the middle. It was like something from *Wacky Races*.”

*Jane and Debby hit their fundraising target of £7,000. To make further donations visit: <http://www.justgiving.com/Jane-Neary-Debby-Shorley>*

## Postdocs! Take charge of your career



Postdoc Adviser Dr Rachel Walls explains the role of the Postdoc Development Centre (PDC) as it launches its 2013–2014 directory.

### What is the PDC?

The PDC is dedicated to providing support and development opportunities for postdocs and fellows at Imperial. It is crucial that they are able to make the most of their time here and plan ahead to ensure that whatever comes next, it's a success.

### What training do you offer?

This year, the PDC training provision has been significantly expanded with the addition of two new programmes. The first of these, Taking Charge of your Career, is a suite of courses aimed at postdocs and fellows at different stages. For those with less than two years' postdoc experience, the course 'Making the most of your postdoc' focuses on being effective in your current role and planning the next step. For experienced postdocs, 'Planning for success beyond your postdoc' helps set clear goals

for progression. For new and aspiring principle investigators, 'Managing your First Research Group' is a chance to explore leadership styles and develop management skills.

Also new is the Writing Skills Programme which helps postdocs deal with peer reviewers' comments and get published in high impact journals. It also provides extra writing coaching for non-native English speakers.

### How else do you support postdocs and fellows?

Our bi-annual welcome events are a chance for new postdocs and fellows to learn about the PDC and meet each other. They can then make appointments with our staff to discuss any issue related to their experience as a postdoc. The PDC also organises mock interviews for postdocs and fellows shortlisted for academic jobs, non-academic jobs and fellowships.

For further details on all the PDC's services visit: <http://bit.ly/1anbHTo>

## obituaries



### JULIAN WALSH

Julian Walsh, who worked closely with the College on strategic alliances, died suddenly on 23 September, aged 61. Professors Tony Barrett, Peter Haynes and Adrian Sutton pay tribute to their friend and colleague.

Julian's reach at Imperial was far and wide and stretched back more than 30 years, during which time his boundless energy and enthusiasm inspired students and academic staff alike. He was best known for his work forging partnerships with business and academia in the USA and South Africa, starting biotech spin-out companies

and helping to establish Centres for Doctoral Training (CDTs).

He was particularly passionate about ensuring the CDTs made an impact on the world outside Imperial and provided students with the outlook and professional skills they need to engage with the world beyond academia.

Julian graduated from Imperial with a BSc in Chemistry in 1976, going on to work in the oil industry as an international trader in London, Paris and Los Angeles. He left in 1992 to bring his deal-making skills to his *alma mater*, and helped to devise, implement and guide a series of multi-million pound strategic alliances with industry. Together with his wife, Carrie, he also ran a French wine importing business: the ultimate self-financing lifestyle hobby.

Above all, Julian touched our lives and we will greatly miss his friendship, passion and joie de vivre and the occasional glass of fine French wine.

long  
service

Staff featured in this column have given many years of service to the College. Staff listed below celebrate anniversaries during the period 1 October–31 October. The data is supplied by HR and is correct at the time of going to press.

### 20 years

- Mr Cetin Avsar, Senior Security/Postal Officer, Security Services
- Ms Helen Buchanan, Head of Access Management, Library Services
- Ms Maria Cardama, Head Cook Early Years, Education Centre
- Professor James Durrant, Professor of Photochemistry, Department of Chemistry
- Professor Steve Gentleman, Professor of Neuropathology, Department of Medicine
- Ms Hilary Glasman-Deal, In-session English, Teacher Department of Humanities
- Professor J Simon Kroll, Dean/Professor, Department of Medicine

### 30 years

- Professor Michael Damzen, Professor of Experimental Laser Physics, Department of Physics
- Professor Duncan Gillies, Professor of Biomedical Data Analysis, Department of Computing
- Professor Paul Luckham, Professor in Particle Technology, Department of Chemical Engineering

### 40 years

- Professor Nigel Meade, Professor of Quantitative Finance, Business School
- Mr Graham Keefe, Geotechnics Laboratory and Workshop Manager, Department of Civil and Environmental Engineering

### 50 years

- Dr Alex Hewson, Senior Research Investigator, Department of Mathematics

For the full list see the online supplement at:  
[www.imperial.ac.uk/reporter](http://www.imperial.ac.uk/reporter)

## Registering for retirement

Nigel Wheatley, Imperial's Academic Registrar, is retiring this month after nearly 33 years at the College. Serving in his current role since 2009, he has been responsible for educational processes from student admissions through to examinations – as well as assuring the quality of degree programmes and dealing with complaints and disciplinary matters.

### How did you end up at the College?

I worked at the central offices of the University of London, which provided a useful overview of the constituent colleges of the University and its workings as a whole. But I recognised that the power increasingly lay in the colleges not the centre, so I was seeking to escape and the Imperial job cropped up.

### How would you describe your role at Imperial?

There are divergent views as to whether the Academic Registrar is an 'institutional villain' or 'institutional hero'. Indeed there is a conference on this very topic in November. Villainy involves saying no and stopping academics doing what they want; heroism involves finding creative solutions or

wielding a large shovel to clear up a mess. I have said no quite often and have also worn out several shovels.

### What are you most proud of from your time at the College?

Overseeing a top quality service from my Registry colleagues and being awarded the College's Associateship.

### Has your career brought you into contact with any memorable people?

Well most of my academic and administration colleagues of course, but not to mention some very awkward students I would wish to forget. When I visited the Institute of Technology Bandung in Indonesia in the early 1980s I signed the last page of their first visitor's book: the front page had signatures of communist leaders Sukarno and Ho Chi Minh, the last page had mine and that of Professor Gordon Conway (Centre for Environmental Policy). Also I did have lunch with politician and academic Shirley Williams in my second month when she came to give a talk at the College.

### What are your future plans?

To have a looooooong rest.



## Farewell moving on

Dr Charlotte Allen, Life Sciences

Dr Esat Alpay (21 years), Faculty of Engineering

Mr Gilead Amit, Communications and Public Affairs

Miss Laura Anderson (5 years), Medicine

Mr Muzaffar Anwar, Surgery and Cancer

Dr Maggie Awadalla, Humanities

Miss Iram Awan, Public Health

Dr Bettina Bajaj, Humanities

Miss Edina Balczó, Medicine

Dr Francesco Baldini, Life Sciences

Mr Charles Bannar-Martin, Mechanical Engineering

Dr Rocio Banos Pinero, Humanities

Emeritus Professor Keith Barnham (8 years), Physics

Dr Anthony Barron, NHLI

Mr Daniel Bates, Accommodation

Dr Steffen Bayer (10 years), Business School

Miss Fathema Begum, Faculty of Medicine

Miss Karen Belton, Imperial College Union

Mr Michael Bloom, Physics

Mr James Booth, Computing

Dr Jane Borley, Surgery and Cancer

Dr Alexandra Boussoimmier-Calleja, Bioengineering

Dr Christopher Broyd, NHLI

Ms Alice Burrell, NHLI

Dr Monica Burriel, Materials

Dr Ian Bush, Physics

Dr Patrizia Camelliti, NHLI

Emeritus Professor David Caplin (11 years), Physics

Miss Paola Cappai, Catering

Mrs Pirkko Carmack, NHLI

Dr Laurence Carson, Physics

Mr Lucas Carstens, Computing

Dr Nikolaos Charlaftis, Medicine

Professor Nishi Chaturvedi (13 years), NHLI

Ms Hee Cho (6 years), Humanities

Miss Caroline Clark, Physics

Miss Emma Coady (13 years), NHLI

Dr Paola Cognigni, Clinical Sciences

Dr Alessandro Colasanti, Medicine

Dr Anna Collinson, Surgery and Cancer

Dr John Connor (5 years), Physics

Dr Simon Cork, Surgery and Cancer

Miss Sonia Coton, NHLI

Dr Humberto Couto Fernandes, Life Sciences

Emeritus Professor John Dainty, Physics

Mrs Saskia Daniel (27 years), Communications and Public Affairs

Professor John Darlington, Computing

Dr Eric Davidson, Life Sciences

Dr Roberto de la Rica Quesada, Materials

Ms Madeleine Dean, Medicine

Mr Christophe Declercq (11 years), Humanities

Dr Michel Della Negra (5 years), Physics

Dr Aimee Di Marco, Surgery and Cancer

Dr Jorge Diaz-Cintas (5 years), Humanities

Ms Angela Dickson (5 years), Humanities

Dr Thomas Dinsdale-Young, Computing

Miss Ubah Dirie, Accommodation

Dr Anna Donaldson, NHLI

Dr Aristomenis Donos, Physics

Miss Gergana Doyninska-Dimitrova, Catering

Dr Jake Dunning, NHLI

Dr Sophie Eastwood, NHLI

Dr Mohamed Elshiekh, Medicine

Dr Suffvan Eltom, NHLI

Dr David Estruch-Samper, Aeronautics

Mrs Josephine Evans, Public Health

Mr Michael Fay, Humanities

Dr Adriano Festa, EEE

Dr Anna Finnemore, Clinical Sciences

Dr Luke Fleet, Materials

Dr Nicholas Florin, Chemical Engineering

Ms Marta Gabrych, Humanities

Miss Lilyanne Gamble, Surgery and Cancer

Dr Sonia Gandhi, Medicine

Professor Andrew George (21 years), Medicine

Dr Sarah Gerver, Public Health

Dr David Gibeon, NHLI

Dr Martin Glasser, NHLI

Mrs Andrea Gordon (11 years), Medicine

Dr Kevin Gouder, Aeronautics

Dr Pascale Guillot (9 years), Surgery and Cancer

Dr Matthew Habgood, Chemical Engineering

Mr Niels Hald, Surgery and Cancer

Ms Rebecca Halil, Catering

Dr James Hall, Chemistry

Dr Mihye Harker (6 years), Humanities

Dr Alexander Harris, Surgery and Cancer

Miss Talia Harrison, Business School

Dr Dean Heathcote (8 years), Medicine

Mrs Cathryn Hetherington (8 years), Finance

Miss Rebecca Holmes, Surgery and Cancer

Mr Amos How, Research Office

Ms Elsa Huertas Barros, Humanities

Professor Alun Hughes (23 years), NHLI

Mr Christopher Hutchison, Physics

Emeritus Professor Christopher Isham, Physics

Miss Attia Ishaque, Medicine

Dr Yonggang Jin, EEE

Dr Michelle Johnson (9 years), NHLI

Dr Hugh Jones (11 years), Physics

Mr David Jordan, Strategic Planning

Dr Hae Kang, Life Sciences

Mr Angelos Kassianos, Public Health

Mr Daniel Key, NHLI

Mr Jeong Kim, Chemical Engineering

Dr Thomas Kirchartz, Physics

Mr James Knox, Business School

Dr Aris Kountouriotis, EEE

Miss Aiva Kukulite, Catering

Dr Madryn Lake, Surgery and Cancer

Mr Michael Lancaster, Imperial College Union

Mr Tristan Lane, Surgery and Cancer

Dr Mauro Laudicella, Business School

Ms Eleanor Lee, Business School

Miss Clare Leeson, Medicine

Ms Laura Lennox, Medicine

Dr Enkeleida Lushi, Mathematics

Mrs Nuala Lyons, Faculty of Medicine

Miss Sofia Mahmud, Public Health

Mr Spiros Makris, NHLI

Mrs Katherine March (6 years), NHLI

Dr Eleni Markou (11 years), Humanities

Mr Rahul Mehta, ICT

Dr Reza Mirnezami, Surgery and Cancer

Mr Marco Mol, Life Sciences

Dr Vicente Montalt Resurreccion, Humanities

Dr Giovanni Montana (8 years), Mathematics

Miss Elisa Mountain, Public Health

Ms Imelda Munro, Public Health

Miss Jasmina Music, Computing

Mr Chandra Nagaraju, ICT

Dr Peter Nash, Mathematics

Mr Charles Nash, Public Health

Mr Chun Ng, Computing

Mr Katsuya Norita, NHLI

Dr Mira Novakova (5 years), Chemistry

Dr Paul O'Reilly (5 years), Public Health

Ms Alexis Palfreyman, Public Health

Dr Zhensheng Pan, Medicine

Dr Chloe Park (5 years), NHLI

Professor Martyn Partridge, Faculty of Medicine

Mr Vanash Patel, Surgery and Cancer

Ms Eleni Pefani, Chemical Engineering

Dr Ricardo Petraco Da Cunha, NHLI

Dr Luis Pizarro Quiroz, Computing

Mrs Ania Plank (5 years), Humanities

Dr Michael Povelones, Life Sciences

Dr Oliver Pretzel, Mathematics

Mr Rash Rahim, Business School

Dr Luke Reynolds, Chemistry

Dr James Richards, Surgery and Cancer

Mr Steven Riddiough, Business School

Dr Hannah Rigby, Civil and Environmental Engineering

Emeritus Professor Ray Rivers (5 years), Physics

Mr Jens Roende (13 years), Research Office

Dr Clare Ross, NHLI

Mr Da Ruan, Mathematics

Mrs Monika Rusinska, Humanities

Mr Muhammad Saleem Khan, Medicine

Mr Yo Sato (9 years), Humanities

Dr Markus Schmuck, Chemical Engineering

Dr Ekaterina Shamonina, EEE

Dr Zara Shubber, Public Health

Mr Mark Shuttleworth (12 years), Humanities

Dr Markus Sikkell, NHLI

Dr Ben Simpson, Medicine

Mrs Varsha Sonigra, Public Health

Dr Worrawat Srirakul, Business School

Mr Angus Stephen (5 years), Estates Division

Dr Paul Stokes, Medicine

Dr James Stone, Medicine

Ms Charlotte Stoneham, Life Sciences

Mr Matthew Streeter, Physics

Dr Gao Sun (6 years), Medicine

Mrs Christine Sweed, Medicine

Dr Lorna Swift, Chemistry

Dr Igor Talzi, Computing

Dr Satoko Tanimoto, Chemical Engineering

Dr Barbara Tavano, Medicine

Mr Manoj Thathamparambathu, ICT

Emeritus Professor Colin Thirtle, Environmental Policy

Dr Clare Thornton, NHLI

Dr Therese Tillin, NHLI

Miss Kathryn Tognon, Faculty of Medicine

Dr Sergiy Tokar, Medicine

Ms Aynur Toraman, Humanities

Ms Sachiko Torii (12 years), Humanities

Ms Adriana Tortoriello, Humanities

Dr Stefan Trapp (10 years), Surgery and Cancer

Dr Howard Tribe, Surgery and Cancer

Miss Claire Tuson (5 years), NHLI

Mrs Dilek Unsal, Humanities

Dr Aaron Vallance, Faculty of Medicine

Mr Zoltan Varga (5 years), Catering

Mr Christos Vasilakos Konstantinidis, EEE

Dr Maria Vigliotti, Computing

Dr Axelle Vire, ESE

Mr Adam Walters, Medicine

Dr Caiwen Wang, Humanities

Dr Yang Wang, Public Health

Dr Simone Wiesler, Life Sciences

Dr Emily Williams, NHLI

Dr Geoff Williams (6 years), Humanities

Emeritus Professor Timothy Williams, NHLI

Ms Danielle Wilson (5 years), Public Health

Dr James Wood, CHOSTM

Dr Christopher Yau, Mathematics

Mr Omer Yaveroglu, Computing

Ms Fei Yu, Humanities

Ms Soledad Zarate, Humanities

Dr Hongbo Zhou, Medicine

This data is supplied by HR and covers staff leaving the College during the period 12 September–11 October. This data was correct at the time of going to press. For Moving In, see the online supplement at [www.imperial.ac.uk/reporter](http://www.imperial.ac.uk/reporter)

✉ Please send your images and/or comments about new starters, leavers and retirees to the Editor at [reporter@imperial.ac.uk](mailto:reporter@imperial.ac.uk)

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



31 OCTOBER ▶ IMPERIAL FRINGE

## Your number's up

In a world of ever increasing information, how do we make sense of big data? Join us this Halloween for an evening of extremes, where Imperial's number-crunching researchers will look at how the devil in the detail affects us all. Drop in anytime between 17.00 and

20.00 to find out about cloud computing, citizen science, 3D data visualisation, how our brains map data and more. A pay bar will be available throughout. From micro devices to infinite figures, who's got your number?



13 NOVEMBER ▶ PUBLIC TALK

## End to end: telomeres and ageing

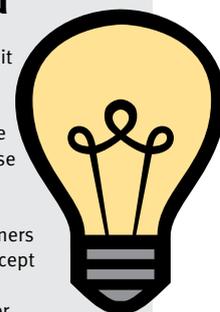
Telomeres are the protective, specialized DNA-protein complexes at the tips of our chromosomes that help stabilize the genetic information. Short telomeres have been linked

to chronic psychological distress as well as major chronic diseases linked to getting older such as cancer and liver dysfunction. In the 26th annual Schrödinger lecture Nobel laureate Dr Elizabeth Blackburn explains how we can apply our knowledge of telomeres and telomerase to the biological process of ageing. The talk is followed by a drinks reception and demonstrations from Imperial researchers.

### TAKE NOTE

## Business ideas wanted

All staff are invited to submit novel ideas for potential products or services to the Entrepreneurship Hub in the Business School. Staff whose ideas are selected will be invited to work with a team of MBA students and designers to potentially bring the concept to market. The deadline for submissions is 11 November.



To apply visit: <http://bit.ly/cvvHeM>



29 OCTOBER ▶ MUSIC

### Evening concert

Piano duet from Simon Crawford Phillips and Philip Moore



30 OCTOBER ▶ SEMINAR

### DNA repair and genomic instability

Fifth Crick symposium



6 NOVEMBER ▶ PUBLIC TALK

### Lymphatic pumping: the uphill struggle of the body's sewer system

Professor James Moore (Bioengineering)

7 NOVEMBER ▶ PUBLIC TALK

### Our glorious diversity: human genetic variation in health and disease

Professor Alex Blakemore (Medicine)



19 NOVEMBER ▶ PUBLIC TALK

### Spacecraft missions to Jupiter and Saturn

Professor Michele Dougherty (Physics)

20 NOVEMBER ▶ PUBLIC TALK

### The sophistication is in the simplicity: modern terrorism's technological trajectory

Professor Bruce Hoffman, Georgetown University USA



31 OCTOBER ▶ MUSIC

### Lunchtime concert

Andrew Zolinsky (piano)



6 NOVEMBER ▶ PUBLIC TALK

### Trapped ions put the quantum into optics

Professor Danny Segal (Physics)



30 OCTOBER ▶ PUBLIC TALK

### Robotic vision

Professor Andy Davison (Computing)



6 NOVEMBER ▶ PUBLIC TALK

### Climbing the mountain: the academic imperative

Professor Sue Smith (NHL)



6 NOVEMBER ▶ SEMINAR

### Inspiring student leadership and team work

MoTiv, TU Delft

### MEET THE READER



### Eugenia Kidd, Assistant Librarian

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

Helping to collect books, dissertations, theses and journals. When our Department decided to weed the library collection we were put in touch with Westminster Council who introduced us to a re-use scheme organised by READ International. We were delighted to be able to save these unique items from landfill and find them a new home. This was all made possible by Nicole Lau, Veolia, Delroy Hewitt and the library graduate teaching assistants.

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

I would run a special section where students or staff introduce the unique features of their department. It could be anything really, for example Civil and Environmental Engineering is the only department with its own library and it would be nice to know why it's so special to them.

#### Who would be your cover star?

I'd like to choose Clive Hargreaves our Department Technical Manager, who's been very supportive throughout the library refurbishment. With his help we've managed to finish it on time and provide better services and facilities.

Want to be the next reader featured in Reporter? Send in a picture of yourself to:

✉ [reporter@imperial.ac.uk](mailto:reporter@imperial.ac.uk)

## Stay in the loop

✉ Visit [www.imperial.ac.uk/events](http://www.imperial.ac.uk/events) for more details about these events and others. To sign up for regular updates about Imperial events please email: [events@imperial.ac.uk](mailto:events@imperial.ac.uk)

