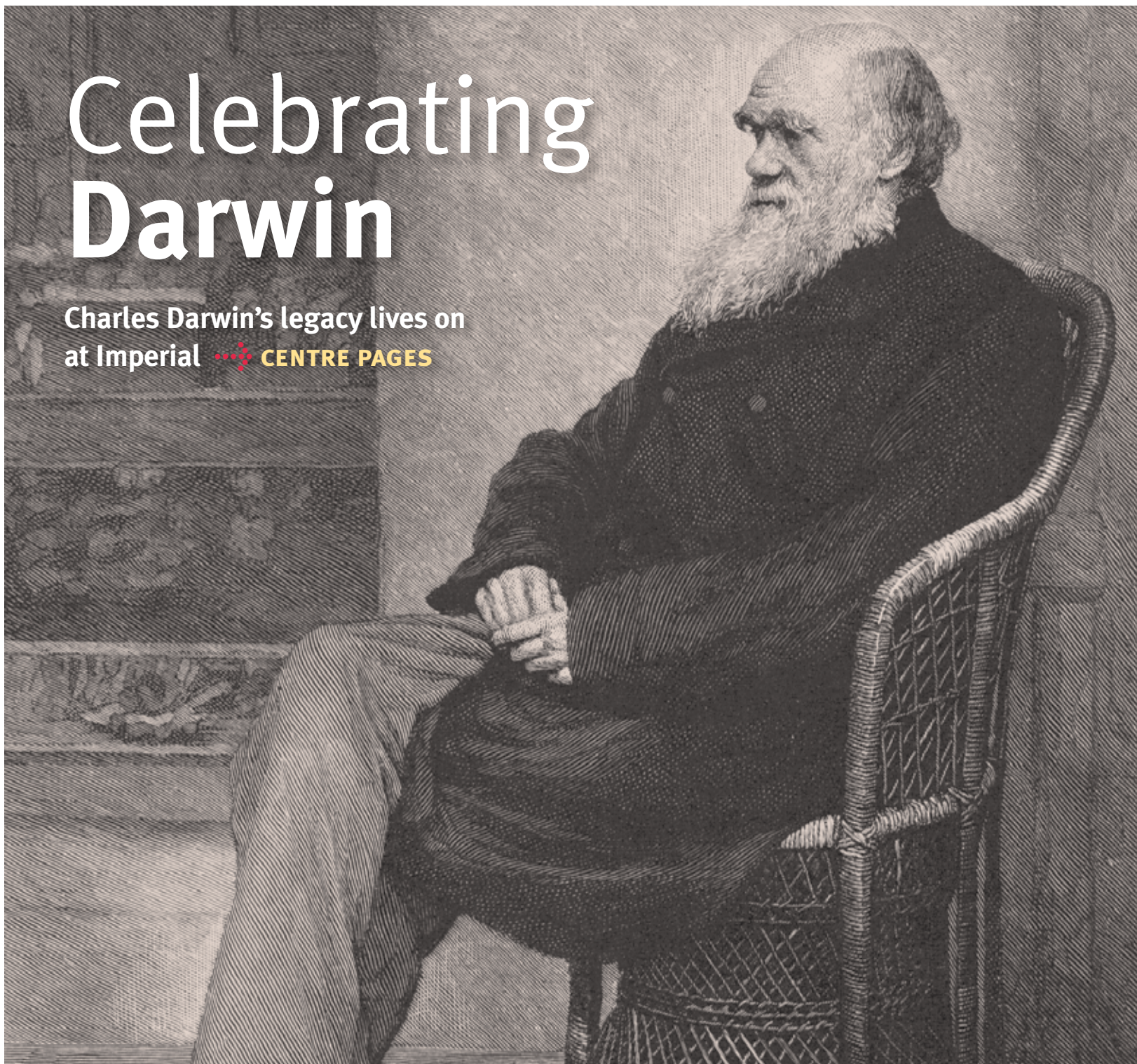


Celebrating Darwin

Charles Darwin's legacy lives on
at Imperial  **CENTRE PAGES**



IMPERIAL 600
Promoting
sexual
orientation
equality
PAGE 3



**'ENGINEERING IS
IN MY BLOOD'**
Reporter talks to
Stephen
Richardson
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**BUILDING
BRIDGES**
Student
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Bolivia
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editorial

Editor Emily Ross
reporter@imperial.ac.uk

This month's surprise snow attack brought the country to a standstill with many staff homebound, classes cancelled and all the campuses coated in inches of snow. Despite the inconvenience of the weather, seeing the newspapers adorned with pictures of snowmen and snowball fights came as a welcome break from the credit crunch headlines which dominated January. The 'adverse weather conditions' had a strange effect on city life: people were seen grabbing bin bags and sliding down their nearest snow-covered hill; commuters started talking to each other, anxious to confer on the latest weather forecast; and snow-related puns made a comeback, long after the cracker season had finished. Today, now the snow has melted and grit is being deployed to worse hit parts of the UK, we can't help but look back with nostalgia at the week we had snow. For more pictures of Imperial in the snow see page 15.

NEWS update

Imperial researchers to help new 'green' fuel sources

Imperial life scientists working on new sustainable and efficient ways of using plants to create biofuels are part of a new £27 million national research centre announced by the Biotechnology and Biological Sciences Research Council (BBSRC) on 27 January.



A researcher harvests short rotation coppiced willow (genus Salix) for genetic and compositional analysis

The BBSRC Sustainable Bioenergy Centre has been launched to provide the science to underpin and develop the important and emerging UK sustainable bioenergy sector – and to replace the petrol in our cars with fuels derived from plants.

The Imperial researchers receiving new

funding as part of the BBSRC's Centre are led by Dr Richard Murphy and Dr Thorsten Hamann (pictured below, top to bottom) in the Department of Life Sciences. Both researchers' work focuses on the sugars found in plant cell walls. Accessing the cell wall sugars, which can be used to make biofuels like ethanol to burn in car engines, is vital if researchers are to maximise the usefulness of plants for making fuels.



This is a difficult task because the sugars are locked tight inside the cell walls, which have evolved to be tough, sturdy and strong enough to keep plants upright during storms and resist pathogen infections and other environmental stresses.



Accessing increasing amounts of the potential energy stored inside cell walls is one of the key challenges facing bioenergy researchers today.

Dr Murphy's research will be carried out in collaboration with colleagues at Rothamsted Research and the Institute of Biological, Environmental and Rural Sciences (IBERS) at Aberystwyth University, and Cambridge University. It will focus on analysing the different sugars and other compounds that are found in the cell walls of bioenergy crops important for the UK, such as fast-growing willows and Miscanthus, a giant grass. Improving biofuel production from these plants is a priority because they can grow on marginal land and require few agricultural inputs like fertilisers. Furthermore, because they are not food crops, using them for fuel does not take products out of the food chain.

Understanding which sugars are found in different plants' cell walls is important because some sugars are easier to extract than others. Dr Murphy explains: "We're looking to pin down which of these crops are the best for producing biofuels, and an important element of this is finding out which genotypes give us easier access to their cell wall sugars. Building up a detailed picture of cell wall composition in different varieties and species will help us to identify the best targets for bioenergy production."

— DANIELLE REEVES, COMMUNICATIONS

"We're looking to pin down which of these crops are the best for producing biofuels"

Imperial College London

Imperial College vs Imperial Medicals

J.P.R. Williams Rugby Varsity Match

Wednesday 25 February 2009



Kick off 19.30
Richmond Athletic Association Ground

Corporate tickets available
www.imperial.ac.uk/sports/news/varsity

Imperial cuts its construction waste

Imperial has become the first university in the UK to commit to halving the amount of construction waste it sends to landfill by 2012.

The College has signed up to the WRAP (Waste and Resources Action Programme) voluntary agreement through which organisations set targets to reduce the amount of construction, demolition and excavation waste sent to landfill.

Imperial aims to reduce the amount of construction waste sent to landfill by reusing and recycling waste materials. It is also developing guidelines for future construction projects which include working with materials that are renewable and long lasting, and designing buildings efficiently, so that the amount of materials used is reduced and less waste is generated.

Steve Howe, Director of Building Projects at the College (pictured second from right), says: "At the moment much construction waste comes from over-ordering materials and fabricating on site. With this new agreement we are now examining opportunities to fabricate off site and reduce waste by ordering smaller deliveries of materials, as well as reusing and recycling more."

He adds: "As a university we recognise that we have a duty to our neighbours and to society to spend money wisely, to reduce wastage wherever we can, and to support Government and EU targets for waste reduction."

One example of the College's approach to reusing and recycling construction waste can be seen in the project to construct the new student residence, Eastside. Following the demolition of the old accommodation, Linstead Hall, waste materials were crushed to form a temporary layer across the site for equipment to sit on during the construction of Eastside.

Imperial is currently spending £100 million a year on constructing new buildings and refurbishing existing buildings across the College's campuses. It plans to build similar recycling and reusing techniques into all projects in order to meet the goal of at least halving its construction waste.

—NAOMI WESTON, COMMUNICATIONS



Eliminating discrimination based on sexual orientation

Winning a place for Imperial in Stonewall's list of the top 100 employers for gay, lesbian and bisexual staff is the long-term goal of the College's newly relaunched Sexual Orientation Equality Committee.

Imperial 600 was officially launched this month at an event at which speakers included Stonewall's Madeline Lasko who outlined what Imperial could do to support LGB staff and enter the Workplace Equality Index. Her

action points for the group included identifying a senior member of staff to act as its champion, ensuring all policies and procedures are inclusive, communicating and engaging with all staff on LGB issues and developing its networking role.

First set up in 2006, the committee's new name reflects the estimation that lesbian, gay and bisexual (LGB) people make up around ten per cent of the UK population, which would equal 600 of Imperial's 6,000 staff.

"Imperial, led by Imperial 600, is being proactive in promoting a culture of inclusion and openness"

Opening the event, Rector Sir Roy Anderson said: "I am proud that Imperial, led by Imperial 600, is being proactive in promoting a culture of inclusion and openness. Imperial is all about people and we choose them on ability and experience only."

One of the group's first steps will be to set up a mentoring programme enabling LGB staff to be mentored by trained Imperial 600 members. 'Mentoring Minorities' training sessions have been set up by Imperial 600 to increase the knowledge and understanding of its

mentors on issues affecting those in minority groups.

The launch was hosted by Christine Yates, the College's Equality and

Diversity Consultant. She said: "This group is made up of academics, researchers, and professional and support staff committed to achieving full inclusion in all College functions."

—NAOMI WESTON, COMMUNICATIONS

► For more information visit: www.imperial.ac.uk/hr/equality/sexualorientation/imperial600

in brief

► Shock Physics Director appointed

Professor Steve Rose has been appointed the first Director of the College's Institute for Shock Physics. The £10 million institute, which was established last year, is dedicated to studying the science behind shock waves, high velocity collisions and extremes of pressure and heat. Professor Rose said: "I'm looking forward to developing Imperial's research and teaching strengths in the important area of shock wave physics."

► All EPSRC

Demonstrations from Design London and Racing Green kicked off the All EPSRC Day, when Imperial staff had an opportunity to catch up with research council staff. The meeting included plenary talks from the Rector and Professor Dave Delpy, EPSRC CEO, and an event for our main industry collaborators. Outcomes included an agreement to help researchers address the economic impact agenda, and plans for exchange secondments.

► Science Challenge 09

This year's Science Challenge—an 800-word essay competition founded in 2006—was launched on 22 January. A panel of esteemed scientists set an essay question, based on what they believe the scientists of the future should be considering. Shell is the title sponsor of this year's challenge, with Winton Capital putting up the £5,000 first prize for the Imperial category. Other prizes on offer include guided tours of some of the world's top laboratories, including CERN.

► AHSC status

The College has been shortlisted for the second round of the process being run by the Department of Health to select organisations to be designated as Academic Health Science Centres (AHSCs). The College will know in March if its partnership with the Imperial College Healthcare NHS Trust will be regarded formally as an AHSC, bringing together research, education and health services to deliver better patient care.

awards and honours

Guy Medal for Professor Richardson

Professor Sylvia Richardson (Epidemiology, Public Health and Primary Care) has been awarded the prestigious silver Guy Medal for 2009 by the Royal Statistical Society. Professor Richardson heads the Biostatistics group which is working on biostatistics and statistical genetics in the UK. The award acknowledges her internationally recognised contributions to the development of Bayesian statistical methodology within the field of biomedical research. The award will be presented in June 2009.



Dr Holger Krapp recognised for flying insect research

Dr Holger Krapp (Bioengineering) has won the US Institute of Navigation's 2008 Burka Award for the best technical article published in its journal *Navigation*. The paper reviews evidence for how flying insects, such as flies and locusts, combine information from thousands of sensors to maintain a level gaze and stability during flight. Biological research into insect flight control could help engineers improve the manoeuvrability of man-made flying devices.



Professor Curry's winning blog

Stephen Curry, Professor of Structural Biology (Life Sciences), is one of six bloggers from *Nature Network* (the professional networking website for scientists around the world) selected for inclusion in the *Open Laboratory* anthology of the best science blog posts of 2008.

► To read Professor Curry's post entitled "I get my kicks from thermodynamics!" visit: <http://network.nature.com/hubs/boston/blog/2009/01/05/six-nn-bloggers-named-as-some-of-the-best-science-bloggers>



Tribology Trust medal for Ioannides

Stathis Ioannides, a visiting professor in the Department of Mechanical Engineering has received the highest honour for his work which focuses on research into friction, wear and lubrication—tribology. Professor Ioannides was awarded the Tribology Trust's Gold Medal from the Institution of Mechanical Engineers in recognition of his outstanding contribution in this field.



Professor David Fisk joins RIBA and Ofgem

The Royal Institute of British Architects (RIBA) has made Professor David Fisk (Civil and Environmental Engineering) an Honorary Fellow for his commitment to engineering and the sustainable performance of buildings. He has also been appointed to serve as a non-executive board member at the Office of Gas and Electricity Markets.



Engineering a better world

On 9 February, Imperial undergraduates found out how they could work on projects around the world at an event hosted by Engineers Without Borders (EWB), a national student-run charity that seeks to improve the lives of people in countries around the world through engineering projects.

Students found out about the placement selection process, how to apply, funding, and practical information about travel and accommodation arrangements. They also got the chance to speak to other Imperial undergraduates and postgraduates who have taken part in this scheme.

Placements typically last between three and 12 months

and provide valuable opportunities for students to travel abroad to countries in South America, Europe and Africa.

Participants in the scheme say working abroad enables

them to put their academic studies into practice, learn about other cultures, and work on projects that produce real benefits for communities. These include earthquake-proofing homes, improving sanitation, providing clean water, and working on new irrigation schemes and road networks.

Any student or recent graduate in the UK under the age of 27 can apply to work overseas on a placement. As part of the recruitment process candidates must be available for interviews and training, with those offered a placement normally having a background in engineering or science.

—COLIN SMITH, COMMUNICATIONS



► For more information please visit: www.ewb-uk.org

One of EWB's 2008 placements: an Imperial student worked with villagers in Tanzania to build a tank that harvests rainwater from the roof of this church

International collaborations database

Imperial researchers are being asked to add details of their international collaborations to a new database managed by the International Office.

The database will make it easier for academic staff to strengthen and develop international links by providing easy access to information on current collaborations with overseas universities. The system aims to capture the whole spectrum of links, from Memoranda of Understanding signed at the institutional level to details of individual researchers working together. Such an overview should help

staff hoping to form new collaborations and could be used in applications for research grants.

Senior International Officer Dr Ulrike Hillemann has been involved in developing the database. She says: "Imperial researchers conduct critically acclaimed work all over the world. This new database will act as a record of the College's global reach, and will allow our international strategy to be developed using the most up-to-date information."

The database can be accessed by all staff members using their College usernames and passwords. Staff

are asked to add details of their current research collaborations or update existing information on the database. The system includes the option to make collaborations visible to all users or to restrict access to the International Office only.

Staff wishing to find information on international collaborations beyond what can be seen using the search facility on the database should contact the International Office.

► To add or update details of your international collaborations please visit: www.imperial.ac.uk/collaborationsdatabase

► For more information contact: u.hillemann@imperial.ac.uk

media mentions

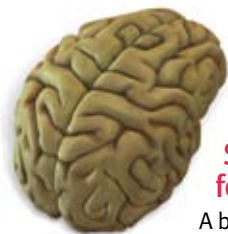
—COLIN SMITH, COMMUNICATIONS

THE DAILY TELEGRAPH ▶ 9 JANUARY

Plans for British eco-towns could be challenged



Government plans for 'eco-towns' may be in doubt because the strategic environmental assessment required as part of the planning process does not comply with European law, reports *The Daily Telegraph*. Describing the environmental assessment of the 15 shortlisted sites as "exceptionally poor", William Sheate (Centre for Environmental Policy), said that not enough consideration had been given to alternative sites or how the towns would be developed.



NEW SCIENTIST ▶
21 JANUARY

Safety improvements for keyhole surgery

A brain-boring device that burrows its way through tissue in the same way that a wasp digs through wood could make keyhole surgery safer, according to *New Scientist*. Researchers have developed a prototype flexible silicon needle with fin-shaped teeth that mimics the boring motion made by a wood wasp's egg-laying organ, or 'ovipositor'. "It can insinuate itself into the tissue with the minimum amount of force," says Dr Ferdinando Rodriguez y Baena (Bioengineering) about his device, which could propel itself through the body to deliver treatments in hard-to-reach areas such as the brain.

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BBC NEWS ONLINE ▶ 26 JANUARY

Emperor penguins facing extinction

Emperor penguins are heading towards extinction, warns BBC News Online. Scientists from the Woods Hole Oceanographic Institute are predicting that penguin numbers could plummet 95 per cent by 2100, wreaking havoc on the delicate Antarctic food chain. "I don't see any reason not to take these predictions very seriously," said Dr Dan Reuman (Life Sciences). "The study is based on a wide range of climate forecasts, it takes a conservative approach, it's based on a large amount of data on penguin demography, and the model accurately forecasts the data that already exists."



THE DAILY TELEGRAPH ▶ 28 JANUARY

Parasites could help stimulate the immune system

Experts believe the absence of parasitic worms in our bodies could be one of the reasons why some illnesses, including asthma and diabetes, are on



the rise, according to *The Daily Telegraph*. British and American researchers are infecting patients with parasites to test whether they ease asthma and multiple sclerosis with a view to developing drugs that have

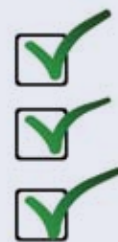
the same effect. Speaking about the link between parasites and immunity, Professor Danny Altman (Investigative Science) says there are "compelling" arguments to suggest that "something in our immune systems has changed since our ancestors, and perhaps even since our great-grandparents."

Imperial College Healthcare **NHS**
NHS Trust

NEWS

Pilot for safer surgery checklist

In-patient deaths and complications following surgery can be significantly reduced using a simple 'safer surgery checklist', according to a major new international study, which was piloted at St Mary's Hospital.



St Mary's represented the European region and was one of eight hospitals around the world involved in the World Health Organisation international pilot study.

Analysis of studies in the eight hospitals found that in-patient deaths following an operation fell by 40 per cent with the implementation of the checklist. The rate of major complications fell from 11 per cent before the checklist was introduced to 7 per cent after introduction of the checklist. The full results of the study appeared in the *New England Journal of Medicine* published on 14 January.

"The results speak for themselves and show that use of the checklist can make a significant difference"

The checklist, which takes a few minutes to complete, is used at three critical points during operative care: before anaesthesia, before skin incision and before the patient leaves the operating theatre.

It is intended to ensure the safe delivery of anaesthesia, appropriate protection against infection, effective teamwork by the operating theatre staff, and other essential practices in perioperative care.

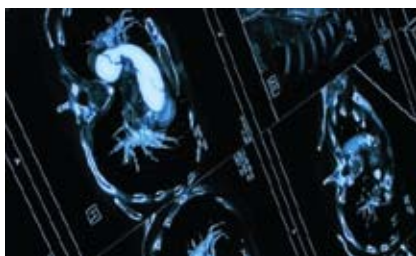
Professor David Taube, Medical Director of Imperial College Healthcare NHS Trust, said: "As a Trust that carries out 115,000 surgical procedures a year, we have learned a great deal from this pilot programme. The results speak for themselves and show that use of the checklist can make a significant difference."

—CYMBELINE MOORE, IMPERIAL COLLEGE HEALTHCARE NHS TRUST PRESS OFFICER

New scan reveals bleeding hearts

Imperial scientists at the MRC Clinical Sciences Centre have, for the first time, captured images that show bleeding inside the heart after people have suffered a heart attack.

The research, published in a new study in the journal *Radiology* (19 January), shows that the amount of bleeding can indicate how damaged a person's heart is after a heart attack. The researchers hope that this kind of imaging will be used alongside other tests to create a fuller picture of a patient's condition and their chances of recovery.



People suffer heart attacks when an artery that feeds blood to the heart becomes blocked, stopping the heart's blood supply and depriving the heart muscle of oxygen. Recent research has shown that some people experience bleeding inside the heart muscle once blood starts to pump into it again. However, the significance of this bleeding is currently not understood.

For the new small study, the researchers captured images of bleeding inside the heart in 15 patients from the Imperial College Healthcare NHS Trust who had recently suffered a heart attack, using magnetic resonance imaging (MRI). Analysis of the MRI scans revealed that the amount of bleeding correlated with how much damage the heart muscle had sustained.

Study author Dr Declan O'Regan said: "Using this new scanning technique shows us that patients who develop bleeding inside their damaged heart muscle have a much poorer chance of recovery."

The research was funded by the Medical Research Council, the British Heart Foundation and the Department of Health, UK

—LAURA GALLAGHER, COMMUNICATIONS

Childhood obesity risk increased by genetic variations



Three new genetic variations that increase the risk of obesity are revealed in a study by Imperial researchers, published on 18 January in the journal *Nature Genetics*. The authors suggest that, if each acts independently, these variants could be responsible for up to 50 per cent of cases of severe obesity.

Together with existing research, the new findings should provide the tools to predict which young children are at risk of becoming obese. Health professionals could then intervene to help such children before they develop weight problems, say researchers from the Department of Genomic Medicine at Imperial.

One of the three variants is found on the NPC1 gene, which previous studies have

suggested may have a role in controlling appetite. The second is found near the MAF gene, which controls the hormones insulin and glucagon. These hormones are known to play key roles in people's metabolisms, and glucagon also appears to have a strong effect on people's ability to feel 'full' after eating. The third variant is found near the PTER gene, the function of which is not yet known.

"When young children become obese, their lives can be affected in a very negative way," said Professor Philippe Froguel, the corresponding author of the study. "Understanding

"Understanding the genetic basis of obesity is the first step towards helping these children"

the genetic basis of obesity is the first step towards helping these children. Once we identify the genes responsible, we can develop ways to

screen children to find out who is most at risk of becoming obese. Hopefully we can then intervene with measures such as behavioural therapy, to make sure a child forms healthy eating habits and does not develop a weight problem."

—LUCY GOODCHILD, COMMUNICATIONS

MRSA's 'weak point' visualised by scientists

An enzyme that lives in MRSA and helps the dangerous bacterium to grow and spread infection through the human body has been visualised for the first time, according to a study published in *Proceedings of the National Academy of Sciences* (19 January) by Imperial researchers.

Now, armed with detailed information about the structure of this enzyme, the team of scientists hope to design new drugs that will seek it out and disable it, providing a new way of combating MRSA and other bacterial infections.

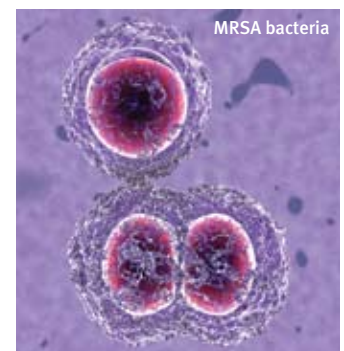
The enzyme, a 'worker protein' called LtaS, produces an important component of the protective outer layer that surrounds all *Staphylococcus aureus* cells as well as many other bacteria that cause disease.

Staphylococcus aureus is a type of bacterium that causes a variety of infections in the human body, including skin infections and abscesses. MRSA is a particular life threatening strain of *Staphylococcus aureus* that has evolved to be resistant to a large number of antibiotics.

The Imperial researchers who conducted the study think that LtaS might be a good candidate target for a new antibiotic to which MRSA will not be resistant. This is because its job is to build a polymer called lipoteichoic acid (LTA), which is an important structure found on the surface of *Staphylococcus aureus* cells.

One of the paper's lead authors, Dr Angelika Grundling (Investigative Science), explains: "Because LtaS is the 'machine' which builds LTA, developing a drug that knocks out the machine will provide us with a new way to disable the growth of these cells, which would represent a novel treatment for MRSA."

—DANIELLE REEVES, COMMUNICATIONS





Face masks could boost protection against flu

A clinical trial has shown that face masks can protect against respiratory illnesses such as flu and the common cold, but convincing people to wear them is harder.

Researchers at the University of New South Wales, Australia, and the Medical Research Council Centre for Outbreak Analysis and Modelling at Imperial ran a clinical trial to investigate the effectiveness of masks. They found that adults who wore masks in the home were four times less likely than non-wearers to be infected by children in the household with a respiratory infection.

"In a severe influenza pandemic, there may be limited availability of vaccines in the first few months," said Professor Neil Ferguson, Director of the Centre for Outbreak Analysis and Modelling and an author on the study. "In that context, masks are a potentially important additional weapon in the public health arsenal."



the journal of the US Centres for Disease Control and Prevention.

—MRC PRESS OFFICE

"masks are a potentially important additional weapon in the public health arsenal."

The University of New South Wales team, led by Professor Raina MacIntyre, recruited more than 280 adults in 143 families in Sydney during the winter seasons of 2006 and 2007. The adults were randomly allocated masks when exposed to a sick child in the household.

Less than half of those asked to wear masks reported having done so consistently. However, adherence to preventative measures is known to vary depending on perception of risk and could be expected to increase during a respiratory disease pandemic.

The trial results were published this month in *Emerging Infectious Diseases*,

Inner workings of photosynthesis revealed

Instant pictures showing how the sun's energy moves inside plants have been taken for the first time, according to research published on 6 February in *Physical Review Letters*.

The images unravel some of the inner workings of the most efficient solar energy process on earth – photosynthesis.

Inside a photosynthetic protein, the sun's energy is efficiently guided across the molecule to drive a chemical reaction that stores energy as food and takes in carbon dioxide.

Scientists would very much like to harness this process as they search for new energy solutions to replace fossil fuels. To do this, they need to understand the energy transport process in more detail.

Analysing energy transport is an important way of understanding the inner workings of a wide range of systems, from biological processes to car engines. However, in very small-scale systems such as photosynthetic molecules,

quantum effects come into play making it difficult for scientists to explain how photosynthetic molecules are able to transport energy with remarkably high efficiency.

Until now, one of the major obstacles has been the lack of a direct way of probing some of the fundamental mechanisms involved in the flow of energy between electrons in molecules.

"These new pictures are instantaneous snapshots of energy being transported between electrons across a protein"

"These new pictures are instantaneous snapshots of energy being transported between electrons across a protein," says the lead author of the new

study, Dr Ian Mercer, a visiting researcher at Imperial from the School of Physics at University College Dublin. "Remarkably, the pictures go further in unravelling the complex way the electrons interact. This gives us something akin to a fingerprint for electronic couplings."

—DANIELLE REEVES, COMMUNICATIONS

Putting the brakes on tumour growth

The size of breast and prostate tumours can be reduced significantly with a new approach that attacks them from different angles, according to a new study published in December in the *British Journal of Cancer*.

The approach combines a drug that stops cell division and causes cell suicide (STX140) with a molecule derived from sugar that starves cells of energy (2DG). This combination reduced the growth of tumours in mice by 76 per cent in the research, carried out by a team from the Division of Medicine.



In the centre of a tumour where there is little or no oxygen, tumour cells are more reliant on a process called glycolysis to make energy from sugar molecules. The scientists were able to block glycolysis using a modified glucose molecule called 2DG, which could not be broken down, starving tumour cells of energy.

STX140 targets the rapidly dividing cells on the outside of a tumour. During cell division, cells build scaffolding made of tiny

"The research is still in its early stages but we think that the combination approach has the potential to change cancer therapy in the future."

structures called microtubules to help transport DNA and other cell contents to each newly created cell. STX140 disrupts this miniature scaffolding causing the cells to commit suicide, which in turn shrinks the tumour.

Dr Simon Newman, (Medicine) says: "We are developing a completely new class of drug with STX140. The research is still in its early stages but we think that the combination approach has the potential to change cancer therapy in the future. We would now like to see STX140 go into clinical trials, initially as a monotherapy, and we hope we can achieve this within 18 months."

—LUCY GOODCHILD, COMMUNICATIONS

The power of an idea

On 12 February, scientists, historians and enthusiasts across the globe will be celebrating the 200th birthday of Charles Darwin.

Marking the bicentenary, *Reporter* investigates Imperial's past and present links with the evolutionary biologist often described as the most influential scientist in history.



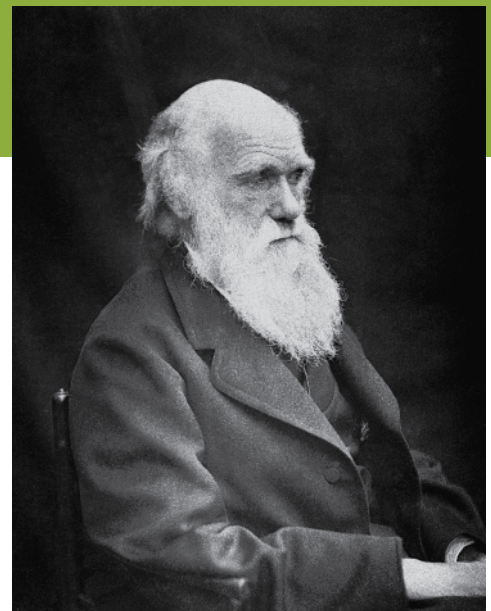
Galapagos land iguana (*Conolophus subcristatus*)—one of the many creatures Darwin saw on his voyage to the islands.

Darwin is most famous for bringing the idea of evolution and natural selection to the public via the publication of *On The Origin of Species* and *The Descent of Man, and Selection in Relation to Sex*. His ideas on evolution challenged contemporary beliefs about the creation of life as defined in the bible and provoked huge controversy at the time between those who believed in Darwin's theory of evolution (evolutionists) and those who agreed with the traditional theory of creation (creationists). Even though the debate continues today, scientists generally regard Darwin's theories as the cornerstone of evolutionary biology.

One man who publically supported Darwin's theory of evolution at the time was English biologist Thomas Henry Huxley, nicknamed 'Darwin's bulldog' for his advocacy of Darwinism. In July 1854, Huxley became Professor of Natural History at the Royal School of Mines (one of Imperial's constituent colleges) a position he held for 31 years. During this time he worked on vertebrate palaeontology and on many projects to advance the place of science in British life.

The College Archives based at the South Kensington Campus hold 180 letters of correspondence between Darwin and Huxley. These include 59 from the period 1859–63 when Huxley fought the claims of anti-Darwinian biologist Richard Owen in a campaign of newspaper articles.

Today Imperial continues to have close links with Darwin's work, not least because



A photograph of Darwin taken by celebrated British photographer Julia Margaret Cameron in 1868.

many of the College's current biologists are carrying out world-leading research in the fields of evolutionary biology and ecology that develops and expands on Darwin's 150-year-old ideas.

This month a number of staff and student celebrations have been organised at the College to celebrate Darwin's bicentenary. The events kicked off on 9 February with a public event on the South Kensington Campus to launch a new book entitled *Darwin's Sacred Cause: Race, Emancipation and the Quest for Human Origins* by eminent Darwin historians Adrian Desmond and James Moore.

The book gives a completely new explanation of how Darwin came to his views on human origins, restoring the moral core of Darwin's work by recovering its lost historical context. The authors say that racial evolution is the key: Darwin abhorred

Darwin's Highlights

1831–36

Darwin served as a naturalist on a British surveying expedition on the HMS Beagle. During this time he first considered the evolution of species while thinking about the variations among Galapagos mockingbirds and he also drew a simple evolutionary tree in one of his notebooks below the words 'I think'.



1844

Darwin secretly wrote a landmark essay on evolution by natural selection and instructed his wife to have it published in the event of his death, writing in a note to her 'I have just finished my sketch of my species theory. If, as I believe [...] my theory is true, and if it be accepted even by one competent judge, it will be a considerable step in science'



1859

Although Darwin began formulating his theory on evolution in 1837, he did not publish *On The Origin of Species by Means of Natural Selection* until 1859 fearing an outcry from the establishment.



Zinn's faithfully
Charles Darwin



Evolving science

Evolutionary developmental biologist Professor Armand Marie Leroi (Life Sciences), who specialises in the genetic control of growth in worms, recently presented the BBC4 documentary *What Darwin Didn't Know*. Emily Ross speaks to Professor Leroi about Darwin's continuing importance.

slavery—his “sacred cause” was abolition—and developed his theories to show that all races are united by descent.

Through massive detective work among unpublished Darwin letters, family correspondence and newly discovered Darwin reading lists, as well as diaries, ships' logs and dozens of official documents and rare contemporary works on race relations and humans origins, the authors back up their claim that Darwin began his career committed to the unity of the human family.

The event featured a talk by the authors, followed by a discussion session where members of the audience put questions to the authors. The debate was chaired by Dr Olivia Judson, an Imperial

research fellow and bestselling author of *Dr Tatiana's Sex Advice to All Creation*. The book launch was co-hosted by Imperial and Penguin Books.

Another of the events, held on 10 February, was a lecture given by broadcaster and writer Roderick Swanston, who spoke on *Evolution and the Art of Music*. The event took place in the Central Library where he discussed the connections between the basic ideas of evolution and natural selection and

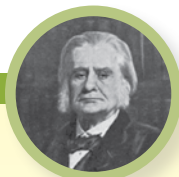
the development of music. The lecture was illustrated with musical examples and explored folk, pop and classical music.

—DANIELLE REEVES, COMMUNICATIONS, AND ANNE BARRETT, COLLEGE ARCHIVES

To download a podcast of the event, *Darwin's Sacred Cause*, visit: www3.imperial.ac.uk/media/onlinelectures

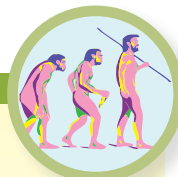
1860

Bishop Samuel Wilberforce led an attack on Darwin's theory at a meeting of the British Association for the Advancement of Science (today known as the British Science Association), held at Oxford University Museum. Two of England's most influential scientists, Thomas Henry Huxley (pictured) and Joseph Hooker, fiercely supported Darwin's work.



1871

Darwin published *The Descent of Man, and Selection in Relation to Sex* which explicitly applied his theories of evolution to humans.



What did Darwin bring to the world of science?

Firstly, Darwin gave us the answer to why creatures look as if they are designed. His explanation was natural selection, a beautiful idea, whose force—I think—reaches far beyond the organic world.

Secondly, Darwin gave us the idea of the tree of life. Ever since then we have been trying to represent the evolution of life as this tree—and work out the order of its branches.

Why some 150 years after he died does he continue to attract attention?

In *On The Origin of Species*, Darwin gave us the idea of natural selection—a powerful explanation for the diversity of life. For that alone he deserves eternal credit. But in my opinion, the reason we still revere him is that he also worked out the implications of that theory—every chapter of *Origin* is now a branch of evolutionary biology.

Is there still more to learn about evolutionary biology? How do you see the field evolving?

There is still so much to learn about evolution. Here's one: Darwin's theory of evolution is more of a retrospective theory—we can only see what evolution has done. But can we predict where it is going? Can we make a prospective science?

Can you give me an example of prospective evolutionary biology?

Here is an example of the sort of thing



I'd like to know. The virus responsible for bird flu, H5N1, will, we are assured, mutate to permit human-to-human transmission and

hence a global pandemic. But *how* will it mutate? If we knew—if we could *predict* the evolutionary future of this virus—we could make the vaccines we need to combat it now instead of waiting until it appears.

Do people still believe in the idea of creationism?

Creationism definitely hasn't died out. The topic has been debated for well over a hundred years, since Imperial's own Thomas Henry Huxley—an



early proponent of evolution—fought against the creationist Bishop Samuel Wilberforce (pictured) at a debate in Oxford. That said, today the scientific community remains solid on evolution.

How do you think Darwin would have felt about the scientific developments which his theories have made possible?

I like to think he would be most satisfied with the discovery of how inheritance works. He struggled with this question in his lifetime; it was central to his theory, and the answer was right in front of him in the plants he bred—yet he never got it. I also think he would have been delighted to see how DNA makes it possible to reconstruct the tree of life.

Do you see Darwin's influence diminishing over time?

I don't think Darwin's importance is ever going to diminish. However the field changes, it will do so in his name.

mini profile

Professor Ray Rivers



Professor Ray Rivers (Physics) has been delving into the explosive past of the volcanic island of Santorini in Greece, otherwise known as Thera.

What do you do at Imperial?

I am mainly a quantum physicist, in the fortunate position of having formally retired to become an emeritus professor and senior research investigator. My research primarily concerns the first millisecond of the universe and how to mimic it in the laboratory. However, I also work on archaeological problems and am currently modelling the effects on Aegean society of the volcanic eruption of Thera in the Bronze Age, thought by many to be the source of the Atlantis myth.

What was the aim of the research?

To demonstrate how the Bronze Age maritime network linking Knossos, the centre of the Minoan 'empire', to the south Aegean could survive the destruction of Thera, despite its pivotal position between Crete and the Cyclades.

How does quantum physics combine with archaeology?

The archaeological modelling uses statistical techniques from particle physics and condensed matter physics to give a picture of trading networks between Greek islands in the Bronze Age and to show how social and cultural links are conditioned by the geography of the Aegean and available marine technologies.

Was it hard to switch fields?

On this project I worked with Dr Tim Evans from the Department of Physics and archeologist Professor Carl Knappett. It was a steep learning curve for all parties. Archaeologists typically have little feel for abstract mathematics, but the modelling only makes sense if you know enough about archaeology. For example, do you want a network link to reflect trade, storage, the exchange of ceremonial goods or, perhaps, knowledge of the potter's wheel?

What were the challenges?

Unlike the field of physics, there are no universal laws for the way complex societies work. Our model of the Minoan trading network is surprisingly robust in the short term and copes with the destruction caused by the volcanic eruption. However over longer time frames our model cannot capture the consequences of economic insecurity on social stability.

Are there other areas of history you would like to model?

A natural next step is to look at the late Bronze Age Mediterranean. The most important thing is having a good archaeologist like Professor Knappett involved. In a different direction Tim Evans is developing related models for Viking influence in Europe.

— DANIEL BURROWS (4TH YEAR PHYSICS)

science

from scratch

Isotopes

"Atoms, the building blocks of all matter, are made up of three different types of particles: protons and neutrons stuck together in the middle (the nucleus) and electrons moving very fast around the outside. An atom of any element has a set number of protons; this helps determine, among other things, the element's position in the periodic table.

But atoms of the same chemical element can have different numbers of neutrons, and these different varieties of a given element are called 'isotopes'. This word, meaning 'at the same place' (from the Greek 'isos' meaning 'equal' and 'topos' meaning 'place'), comes from the fact that the isotopes of a given element are located at the same place on the periodic table.

Isotopes of a single element possess almost identical properties, except that ones with more neutrons will be heavier. Some isotopes are stable, while others are unstable, breaking down into other isotopes of the element. The process of breaking down causes the emission of radiation, so that unstable isotopes are radioactive."

— DR DOMINIK WEISS (EARTH SCIENCE AND ENGINEERING)

inventors corner

Technologies of opportunity

Professor Washington Ochieng has worked at Imperial for over 10 years, and in 2007 was awarded a Chair in Positioning and Navigation systems in the Department of Civil and Environmental Engineering.



Professor Ochieng has designed a technology to provide data on vehicle emissions

A key element of his work is to find novel applications for existing technologies, which he calls "technologies of opportunity". His search has led him to conceive an innovative way of tracking location using Bluetooth, working alongside collaborators from the University of Leeds, the Home Office, the Forensic Science Service and New Forest Communications Ltd. 'Intelligent Pervasive Location Tracking' can determine the three-dimensional location of an item or person, which could have many applications for tackling crime and in forensic and emergency response activities.

Professor Ochieng has also worked on a number of other projects with different funding bodies involving widespread collaboration. Describing the importance of being part of a global network, he says: "Working with more than 50 key players in business, industry, government and research establishments enables the sharing of ideas and can help potential commercial take-up."

Among the new ideas being explored by Professor Ochieng's research group is how integrated posi-

tioning and navigation systems can be used to benefit communities, health and commerce by providing high accuracy and high integrity geographical details of a mobile device's position. The 'Vehicle Performance and Emissions Monitoring System' is one invention to come out of this research, in collaboration with colleagues at Imperial's Centre for Transport Studies, Sira Ltd and Saturn Technologies Ltd. A low cost, portable technology which can provide data on vehicle emissions and driver and engine performance, the device is likely to be used by the motor industry to help them achieve more efficient designs, as well as by government agencies and environmental organisations.

"Commercialising research is vital," says Professor Ochieng. "Through our research we are chasing the dream of developing an affordable, high-performance and seamless positioning capability in order to stimulate economic growth and to help address real problems that affect society such as health, personal safety and security."

— MICHELLE COTTERILL, IMPERIAL INNOVATIONS



Hands on

Reporter's Emily Ross speaks to Professor Stephen Richardson about settling into his new role as Principal of the Faculty of Engineering, which he took up in September 2008.

"You could say engineering is in my blood," muses Professor Stephen Richardson. "When I was young I often visited my grandfather's workplace, the silk printing works belonging to the London department store Liberty's – he was a trained mechanical engineer and was the first to introduce me to the workings of huge machines."

While his passion for engineering began at a young age – his parents enjoy relating how he unscrewed all the screws from his playpen and escaped – his decision to study chemical engineering was inspired by a Professor of Chemical Engineering at Imperial who was a friend of his mother's. The professor introduced him to the world of chemical engineering and suggested it might be something he would like to pursue.

This suggestion led Professor Richardson to an association with the College that today spans 37 years. He studied for his BSc and PhD in the Department of Chemical Engineering, and after a brief spell at Cambridge he returned in 1978 to take up a position as lecturer.

Over the years Professor Richardson has progressed to senior management level roles: from Director of Undergraduate Studies in 1995, to Head of Chemical Engineering, and now his current role as Faculty Principal which

he took on last September.

He describes his style of leadership: "My aim is to lead by example, so if I expect other people to do things I should also do them myself, in some measure. For example: I still teach, I do admin, I do consultancy work and I still conduct some research. A balanced diet is what you need in this job."

Professor Richardson's principal research interest is safety, specifically the depressurisation of vessels and pipelines, particularly those associated with oil and gas production, and development of the computer program BLOWDOWN, which has since been used in the design of over 300 installations worldwide.

He describes his new role as a huge learning curve, but says he is excited about being head of a Faculty in which 79 per cent of the research has been rated as 'world-

leading' or 'internationally excellent' in the 2008 Research Assessment Exercise.

However, he says there's no time for complacency: "When you are at the top there are only two places to go – either stay the same or go down. With the economic circumstances we need to keep on our toes."

Professor Richardson is a keen teacher and is fondly described by his students as the 'machine-gun' – a nickname he gained because

"My aim is to lead by example, so if I expect other people to do things I should also do them myself"

when he gets excited about a subject he talks quickly. Despite his natural speed he is a firm believer in good science communication and is not in favour of bamboozling his students.

When asked where the Faculty is going, Professor Richardson points to a lot of multidisciplinary research: "There are still some research projects which are just Chemical Engineering or just Engineering but they are increasingly few. However, if you are not absolutely fantastic at your core subject then being multidisciplinary won't help you – you have to maintain your expertise."

Professor Richardson is particularly excited about 'urban energy' – a collaboration between Engineering and Natural Sciences looking at smarter ways of running cities in terms of energy, the environment and economics. He also highlights robotic surgery – the high profile collaboration between Computing and Medicine fronted by Lord Darzi – as a key research area of the moment.

Bio-research is another field which is likely to expand over the next five years. Professor Richardson says that biomedical, biochemical and bioelectrical engineering research are all set to grow. He also talks about developing the Faculty's nuclear research. He says: "If the UK does decide to invest in nuclear energy then this will be a massive opportunity for us. We have real expertise here."

While the economic downturn is worrying for everyone at the College, Professor Richardson is optimistic about the future for engineering graduates. He says: "While opportunities in the City will be smaller there are still lots of options. I want to see our students go on to be CEOs of companies, school teachers inspiring more kids to do engineering, and chief engineers on major projects – graduates at Imperial still have the very real opportunity to make a difference."

– EMILY ROSS, COMMUNICATIONS

VOX POP

Are you concerned about employment prospects in the current economic climate?

—NAOMI WESTON, COMMUNICATIONS



Cheng Ge, second year undergraduate in Electrical and Electronic Engineering

"I really want to go into finance and I am also looking at the possibility of studying for a PhD in America. However, I am worried, as ideally I would like to have two years' experience working in the UK before I go back to China. If the recession continues I will probably go home sooner but I

still have two more years of my degree left so hopefully things will get better."



Karl Harder, MBA student in the Imperial College Business School

"I am concerned about the current economic climate, especially as I have a child at home and another on the way. However, I am planning on setting up a new business in the green energy sector. Certain businesses can still do well during a recession and it is certainly a challenge but there is no point in getting depressed about it."



Erica Thompson, first year PhD student in Earth Science and Engineering

"I can see the effects of the economic slowdown all around me but I'm not too concerned as I hope to work in the green energy sector and climate change is a growing area. Staying in academia could still be an option for me if the job market deteriorates further."

Hammersmith loses its loos to north Wales

Last month two sets of prefabricated toilet blocks used during the refurbishment of Hammersmith Hospital were saved from demolition and transported to the Welsh Highland Railway.

Railway enthusiast Kim Winter (Building Projects) happened to be in earshot when discussions of the demolition and disposal of the toilet blocks were underway.

He explains: "I share an office with Building Projects' John Griffith, Hammersmith Campus Senior Project Manager; Denis Murphy, Construction Safety Manager; and Stephanie Dack, Consultant Project Manager for the Hammersmith

L Block development. Both John and Denis were involved in an event I organised where 12 of us laid three and a half lengths of track in the Aberglasyn Pass for Phase IV of the Welsh Highland Railway project.

John asked if I knew whether the railway could find a use for the toilets. I contacted the railway project and it was confirmed that they would be happy to take them off our hands."

And so it was that the toilets were transported to north Wales. The railway may use them to replace temporary toilet facilities at Caernarfon terminus or at the railway's yard at Dinas for additional toilet facilities when it runs special events for large numbers of railway enthusiasts.

—EMILY ROSS, COMMUNICATIONS



Blown away

Mel Tamplin, Head of Accounting Operations (Finance), tells us about the makings of the Wind Power concert, the unique event held in January where the Band of the Coldstream Guards joined forces with Imperial College Winds.



"The Wind Power event started from very humble beginnings. My initial desire was to find something interesting and engaging for the Imperial College Winds, a wind band for staff and students, to do in the new academic year.

I decided to contact the Coldstream Guards directly, on the basis that if I started with arguably the best wind band in the world today then at least I could work my way down the batting order.

I was delighted, on speaking to the Coldstream Guards bandmaster, Warrant Officer Class 1 Greg Machin, that he was very keen to explore how we could work together. It was not long before he and I realised that we could actually use this collaboration to our joint advantage, and that's where the idea to have a day of workshops, rehearsals and finally a concert given by the combined bands to raise money for student musical scholarships came from. I discussed this idea

with Richard Dickins, Imperial's Director of Music, Julia Buckingham, the Pro Rector for Education, and Anna Gooding, Chair of Imperial Winds, and persuaded Lord Winston to dust off his sax and rehearse and play in the concert as well as be the after-dinner speaker.

A committee was soon formed to take forward the plans, led by John Anderson, Chief Executive of the College Fund. Frenetic activity followed from the Guards, the Winds and staff across the College who enabled a full-blown benefit concert and dinner to be delivered.

A series of rehearsals took place prior to the day and I was delighted with the high standard we achieved.

The rest, as they say, is history. The day and evening were a great success and Conferences, Catering, Security, Communications, and the Great Hall technicians deserve full credit and my thanks for the professional and enjoyable day they helped produce."

—MEL TAMPLIN, FINANCE

www3.imperial.ac.uk/news/windpower

Teddies cured at Imperial

In December last year Chelsea and Westminster Hospital opened its doors to a rather different breed of patient. Children queued up with their teddy bears to have their fluffy friends diagnosed at Teddy Bear Hospital (TBH).

The voluntary initiative, run by the European Medical Students' Association, has two key aims – to encourage medical students to interact with both the local and international community, and to help young children to overcome the fear of doctors and a hospital environment. So far TBH has been run at St Mary's, Charing Cross and Chelsea and Westminster Hospitals.

Medical students who volunteer for the project



get trained up before the project starts and are taught to use role-play, with the children as 'teddy's parents' and the students as 'teddy doctors', to make children less scared of being treated by doctors and nurses.

Dr Paraskevas Paraskeva, Senior Lecturer (SORA) and Consultant Surgeon at St Mary's Hospital is a supporter of the student-led scheme. He says: "Sometimes medical students can be scared of examining children. In TBH, on the other hand, students feel empowered and more confident."

One of the directors of Teddy Bear Hospital, Mehreen Tahir, confirms: "TBH is popular among clinical medical students and we are always looking to make the next TBH better than the last. Over the last two years we have established strong links with local education authorities, and consultants and health professionals."

— PETRONELA SASUROVA, IMPERIAL VOLUNTEER CENTRE

► The next TBH will be held at Chelsea and Westminster Hospital on Wednesday 18 March. For more information contact: teddybearhospital@imperial@gmail.com

► For volunteering opportunities contact Imperial Volunteer Centre at: volunteering@imperial.ac.uk

Building bridges in Bolivia

This summer, 11 of Imperial's engineering students will be travelling to Calacala, a village in the south west of Bolivia, to build footbridges for two indigenous communities who are cut off from schooling and healthcare during the country's rainy season.



Imperial students with the local residents

"You just have a shovel and a spirit level – it forces you to go back to basics to solve problems."

Fourth year Civil Engineering student Harriet Kirk (pictured above, third from right) explains that this year's expedition is the second phase of a project which began last summer when the group spent a month in Bolivia looking for a suitable engineering project to work on.

Harriet says: "The project we chose is in the south west Altiplano where two small

villages are located at high altitude. To travel between the two, the villagers have to cross a plain which is divided by two rivers. During the dry season the rivers are virtually empty but for three months in the rainy season the rivers overflow and there is no access to the local school or the nearest market."

The project has been partly funded by Imperial's exploration committee which is jointly supported by the College, Imperial College Union and the faculty alumni associations. The committee meets throughout the year to consider proposals for expeditions from students and to administer funds to help with the cost of the successful projects. Harriet says: "Organising this project with the help of the exploration committee has given us the advantage of funding, expertise and contacts, and it also means we are all covered under College insurance."

Harriet is the chief engineer on the project. She explains that with the help of NGOs and local villagers the plan is to create two steel-truss pedestrian bridges with a span of 25 metres. The Imperial students will be split into two groups: some will be working on the prefabrication of the truss structure in the nearest city, five hours away, and the rest will be working with the NGO and the local villagers on the substructure for the bridges.

Harriet says: "It's an amazing opportunity – we get to experience a completely different type of engineering. In the UK we focus on getting into industry in developed



The students survey the river in Calacala

countries where the budgets are huge. Here you just have a shovel and a spirit level – it forces you to go back to basics to solve problems."

As well as the engineering experience, the team will also be living in the heart of the community made up of just 40 families, sleeping in adobe mud huts, with no running water, no electricity and no mobile signal.

Harriet admits that it is going to be a major challenge but says she is really looking forward to getting to know the villagers: "When we were there in the summer they were so interested in what we were doing and totally on board. I'm really excited to get started and build something which will really help their community."

— EMILY ROSS, COMMUNICATIONS

► For more information on the type of projects Imperial's exploration committee funds visit: www.imperial.ac.uk/expeditions

celebrating long service



20 years



Julia Anderson, Divisional Administrator, SORA

When Julia joined Charing Cross and Westminster Medical School as Assistant Secretary in 1989 she was already a familiar face, as she had worked in a similar role for Westminster Medical School from 1974 to 1984. Her appointment in 1989 coincided with the building of the new Chelsea and Westminster Hospital for which she was part of the project team. "It was tremendously exciting to be involved in the hospital from the very start," she says. Following the merger of Chelsea and Westminster Medical School with Imperial in 1997, Julia became Divisional Administrator, firstly for the Division of Surgery, Anaesthetics and Intensive Care and then for SORA. "The new Division is three times bigger so my job really changed out of all recognition, and it's been amazing to work alongside inspirational leaders like Lord Darzi," she says.



Dr Nigel Brand, Senior Lecturer (NHLI)

Dr Nigel Brand's connection with Imperial dates back to the mid-1980s when he obtained a PhD in Chemistry. He joined the National Heart and Lung Institute in 1989 as a postdoc in the Department of Cardiothoracic Surgery, under the direction of Professor Sir Magdi Yacoub. Since 2000, he has been Senior Lecturer in Molecular Biology, undertaking research into cardiac gene regulation and supervising PhD students at the Heart Science Centre, Harefield. In 2008, he became Education Coordinator for the new British Heart Foundation Centre of Research Excellence at Imperial, which aims to train future investigators in innovative, cutting edge cardiovascular science through a strong cross-disciplinary research programme. He says: "Four out of 10 people will die from heart disease, which is more than all the cancers combined. We simply can't move understanding, diagnosis and treatment in this field forward without drawing on the talents of other disciplines such as the physical and mathematical sciences."

Loretta Herbert • Departmental Secretary (Neurosciences and Mental Health)

Julio Menendez Lopez • Postal Services/Relief Security Officer (Security Services)

30 years



Sarah Greenwood, Technician (Physics)

Sarah Greenwood joined Imperial working part-time night shifts to pay her way through art school. But she enjoyed her role as a scanner for bubble chamber experiments by the High Energy Physics Research Group so much that she decided to stay on. "In those days, people rather than computers had to analyse the tracks left by particles after they had been fired into the chamber," she says. Computerisation in the mid-1980s meant her role was phased out and Sarah retrained as a technician for the Electronics Workshop producing circuit boards and other pieces of equipment for research projects including the CMS experiment at CERN. Within this role her art school training has not been wasted, since she's been able to use skills such as silk-screening, etching and design work when making prototypes. She says: "I've stayed here so long because it's a really good place to work with lots of interesting people."

Julie Williams • Research Services Manager (Faculty of Medicine)

Staff featured celebrate anniversaries during the period 1 Feb–1 March. Data is supplied by HR and is correct at the time of going to press.

Obituaries



Brian Foxwell, Professor of Immune Cell Signalling (Kennedy Institute of Rheumatology) •

Professors Fionula Brennan and Marc Feldmann pay tribute to their colleague Professor Foxwell, who died at the end of December 2008, aged 52:

"Brian Foxwell was a very talented and original scientist, who contributed much in his regrettably short career. His PhD in Bristol

led to a postdoctoral fellowship at Imperial Cancer Research Fund with Andy Creighton, where Marc Feldmann first met him. He developed and patented drug targeting with antibodies for cancer therapy. He spent three years working for Sandoz with Bernard Ryffel where he consolidated his keen interest in therapeutics, and was then recruited by Marc Feldmann to the Sunley Research Centre—before it merged with the Kennedy Institute of Rheumatology—to work on analysing the inflammatory pathways in rheumatoid arthritis. These interests evolved into his major contributions on cytokine signalling and novel drug target identification.

"He had strong beliefs about the right way to do science. For example he believed in using primary human cells for cell signalling studies which were much harder to obtain and culture than the more commonly used transformed cell lines. This interest led to one of his major contributions, the use of adenoviral vectors for high-efficiency gene transfer into normal cells. This technique helped him uncover the role of Toll-like receptors in RA pathogenesis, and discover a new approach to vaccination using signalling components as intracellular adjuvants. His energy, enthusiasm, motivational and scientific skills led to over 150 scientific publications, a plethora of patents, international recognition, an FRCPath from the Royal College of Pathologists, a DSc from Bristol, and the Professorship of Immune Cell Signalling in 1999. His loss will be felt not only by his active and enthusiastic group, but by his many academic collaborators at Imperial and elsewhere."

Imperial discovers its arty side



Artsfest 2009, the College's annual arts festival, is running this year between 16–20 February and will feature a

wide variety of arts events, from alternative music gigs and classical concerts to a barn dance and art exhibitions.

The week will kick off with a grand display of performing and martial arts, and an exhibition in the Blyth Gallery, followed by daily lunchtime concerts by the Onyx Brass, Imperial College String Ensemble, Sinfonietta and this year's *Symphuni* winners, Imperial College Symphony Orchestra (ICSO). Artsfest is also supporting the charity Hospices of Hope, and will be busking in locations around the South Kensington Campus. The Grand Finale Concert in the Great Hall on the Friday will close the event with a spectacle of music, dance and martial arts. Staff and students will also have the chance to watch three lecturers: Dr Martin McCall (Physics), Dr Martin Liebeck (Mathematics) and Dr Emma McCoy (Mathematics) strut their stuff in the final of the dance competition, organised by the Dance Club.

—RACHEL D'OLIVEIRO, MEDICINE

Snow day? Snow problem.



☺ If you would like to see more pictures of students in the snow a slideshow can be found at: <http://ictdrweb.cc.ic.ac.uk/news/snowtime.html>

Welcome

new starters

Dr Farah Al-Beidh, NHLI
 Mr David Allen, Biology
 Mr Richard Andriatsitohaina, Catering Services
 Dr Omar Bacarreza Nogales, Aeronautics
 Mrs Virginia Barcellos, Catering Services
 Ms Letícia Barcena Del Riego, SORA
 Miss Marta Benetti, Catering Services
 Ms Annelies Bobelyn, Business School
 Mr Bozo Boyunsuz, Catering Services
 Mr James Bromfield, ICT
 Mr Garrett Callanan, NHLI
 Mr Benjamin Chan, Materials
 Miss Maria Chico Marcos, Catering Services
 Mr Raphael Coursieres, Catering Services
 Mrs Mary Cross, NHLI
 Dr Amy Cruickshank, Materials
 Miss Vanessa da Luz, Catering Services
 Miss Elisa de Carvalho, Catering Services
 Miss Raquel Diniz, Catering Services
 Mr Seydina Diouf, Catering Services
 Ms Nabila Ezziane, Catering Services
 Mrs Bernadette Fitzgerald, NHLI
 Dr Michael Girard, Bioengineering
 Mrs Agnieszka Grzybowska-Kowalczyk, NHLI
 Miss Amy Haylen, Human Resources
 Mr Richard Heap, Faculty of Engineering
 Mr Shane Heberley, ICT
 Dr Frederic Jean-Alphonse, SORA
 Miss Vanaja Kakarla, NHLI
 Mr Firuz Kasimov, Catering Services
 Mr Mark Keeping, Reactor Centre
 Mr Arshad Khan, Molecular Biosciences
 Miss Helena Kopecka, Registry

Miss Diana Kozłowska, Catering Services
 Mr Venkat Krishnappa, ICT
 Mr Dhruv Kumar, Civil and Environmental Engineering
 Mr Anthony Lander, Library Services
 Dr Berit Legler, Earth Science and Engineering
 Mr Tchern Lenn, Biology
 Dr Jacqueline Leslie, EPHPC
 Mr David Ling, ICT
 Dr Yu Liu, NHLI
 Mrs Shireen Lock, Faculty of Engineering
 Miss Jennifer Lucas, Kennedy Institute
 Dr Christina Malamateniou, Clinical Sciences
 Professor John Mansfield, Biology
 Ms Catherine McLean, Investigative Science
 Miss Athinoula Meli, NHLI
 Mr Chandrashekhar Nagaraju, ICT
 Miss Cindy Nelson, Catering Services
 Ms Sylwia Nosarzewska, Catering Services
 Ms Magdalena Olejnik, EYEC
 Dr Rakesh Patalay, Investigative Science
 Mr Ricardo Pereira, CEP
 Ms Antonia Polorecka, Catering Services
 Miss Dovile Rickeviciute, Catering Services
 Dr Laurent Risser, Institute for Mathematical Sciences
 Mr Gregory Robinson, Research Services
 Mr Mario Sassano, Electrical and Electronic Engineering
 Mr Shokir Sattorov, Catering Services
 Miss Carmen Schiemann, Business School
 Ms Dhara Shah, Catering Services
 Miss Helen Shaw, Cell and Molecular Biology
 Mr Ankush Shinde, ICT
 Mr Antonio Sierra Rodriguez, SORA
 Mr Nikolaos Soulopoulos, Mechanical Engineering
 Mr Christopher Starling, Medicine
 Mr Matthew Stevens, Research Services

Ms Caroline Sutcliffe, SORA
 Miss Clare Symonds, NHLI
 Ms Barbara Szkaradek, EYEC
 Dr Mair Thomas, Investigative Science
 Miss Ann Thomson, SORA
 Mr James Tilley, Registry
 Dr Sylvain Tollis, Molecular Biosciences
 Mr Lianheng Tong, Materials
 Ms Edit Toth, Catering Services
 Miss Chika Ukwuoma, Catering Services
 Dr David Wilson, Business School
 Dr Janet Wong, Mechanical Engineering
 Mr Sebastien Youssoufa, Catering Services
 Mr Pawel Zandarski, Catering Services

Farewell

moving on

Mr Martin Abbott, Aeronautics
 Mrs Monika Adel-Singh, Faculty of Medicine
 Mr Rafael Albernaz Alves, Catering Services
 Ms Juni Andrell, Molecular Biosciences (5 years)
 Mr Richard Barnard, Faculty of Medicine
 Dr Mahtab Behrouzi, Chemical Engineering and Chemical Technology
 Miss Carolina Bustamante Urrego, Catering Services
 Mr Tindaro Cicero, Mechanical Engineering
 Ms Jean Crawford, Library Services
 Dr Soraya Diez, SORA
 Miss Sarah Elderkin, Clinical Sciences
 Mrs Mary Fatih, Clinical Sciences (19 years)
 Ms Laura Hughes, NHLI
 Dr Tetsuro Ikeda, Medicine
 Mr Thomas James, Aeronautics
 Mr Searle Kochberg, Humanities
 Dr Sile Lane, Investigative Science
 Dr Patricia Macedo, NHLI
 Ms Brenda Mutch, Kennedy Institute

Dr Sridevi Nagarajan, EPHPC
 Mr Bang Nong, Faculty of Engineering
 Dr Alice Norton, EPHPC
 Dr Vincent O'Brien, SORA
 Miss Jaymi Patel, SORA
 Mr Guglielmo Rosignoli, Investigative Science
 Dr Tamas Sashalmi, Physics
 Dr Dimitrios Sideris, Institute of Biomedical Engineering
 Miss Deborah Silva, Materials
 Dr Monika Solanki, Computing
 Dr Sate Songhor-Abadi, EPHPC
 Dr Paolo Spagnolo, NHLI (5 years)
 Ms Nicole Stirnberg, International Office
 Ms Sian Thomas, SORA
 Dr Evren Unsal, Earth Science and Engineering
 Dr Jyothish Venkataramanan, Mechanical Engineering
 Mr David Vige, Faculty of Medicine
 Miss Mary Wang, SORA
 Dr Andrew Webb, Medicine
 Dr Ann Wheeler, NHLI
 Dr Michael Yee, Medicine
 Dr Hongwei Zhou, Civil and Environmental Engineering

This data is supplied by HR and covers the period 11–31 January 2009. It was correct at the time of going to press. Years of service are given where an individual has been a member of College staff for over five years. Asterisk (*) indicates where an individual will continue to play an active role in College life.

❖ Please send your images and/or brief 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.

moving in. moving on.

what's on

17 FEBRUARY 17.30–18.30



Multicultural societies under pressure: sustaining dialogue

Ram Gidoomal CBE presents the 2009 Diversity Lecture

Lecture Theatre G16, Sir Alexander Fleming Building

Registration in advance: l.brown@imperial.ac.uk

17 FEBRUARY 17.30–18.30

Everything you always wanted to know about genome-wide association studies for common diseases: a metabolic perspective

Professor Philippe Froguel (Medicine)

Inaugural lecture

Lecture Theatre 1, Wolfson Education Centre, Hammersmith Campus

Registration in advance: l.brown@imperial.ac.uk

19 FEBRUARY 17.30–18.30



High-tech entrepreneurs: what is their role in the economy?

Professor Bart Clarysse (Imperial College Business School)

Inaugural lecture

Lower ground square lecture theatre, Tanaka Building,

Registration in advance: l.brown@imperial.ac.uk

19 FEBRUARY 19.00

Trick or treatment?

Author and journalist Dr Simon Singh MBE

Friends of Imperial College event

Sir Alexander Fleming Building

Tickets to be booked in advance: www.friendsofimperial.org.uk

20 FEBRUARY 19.30–22.00

ArtsFest Grand Finale

Celebrating arts on campus

Tickets to be purchased in advance: artsfest@imperial.ac.uk



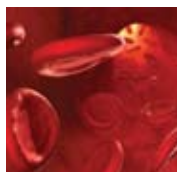
25 FEBRUARY 19.30

J.P.R. Williams Rugby Varsity

Richmond Athletic Association Ground, Kew Foot Road, Richmond, Surrey, TW9 2SS

Tickets to be purchased in advance: www.imperial.ac.uk/sports/news/varsity

26 FEBRUARY 17.30–18.30



Biological networks follow the flow!

Professor Rob Krams (Molecular Bioengineering)

Inaugural lecture

Clare lecture theatre, Huxley Building

Registration in advance: l.brown@imperial.ac.uk

28 FEBRUARY 10.00

Picocon 26

Imperial College Science Fiction Society's annual convention

Student Union, Beit Quad

Drop in



All events are at the South Kensington Campus unless otherwise stated.

take note

Sign up for a tweet treat



Imperial is now on Twitter, the service that helps people keep in touch by answering the simple question: "What are you doing?" To find out why the Queen's Tower bells were ringing in early February and for other short-but-sweet tweets, sign up at: <http://twitter.com/imperialcollege>

classifieds

New recruits for ladies' hockey club

The Mid-Surrey Ladies' Hockey Club is actively recruiting new members of all ages and abilities. The club currently fields two teams in the Surrey ladies league—its first eleven are in Division 3 and its second eleven are in Division 7 (of nine). The club is based in Kingston (Tiffin Girls' School, KT2 5PL) and trains on Thursday evenings, with games on Saturdays. For further information contact: e.groves05@imperial.ac.uk

To place a classified please submit no more than 50 words to the Editor, Emily Ross, by email at reporter@imperial.ac.uk for a chance for your advertisement to appear. The Editor reserves the right to amend advertisements as necessary.

volunteering

Volunteer mentors

Project ID: 2102

Organisation: Migrant and Refugee Communities Forum (MRCF)

Location: W10 (nearest tube Ladbroke Grove)

Volunteers are needed to provide support to migrants and refugees who are experiencing distress or poor mental health. Volunteers will be required to offer advice and information, be responsible for organising drop-in sessions and provide mentoring support. Ideally volunteers should speak a second language other than English, be reliable, communicative and friendly and most of all be a good listener. In return MRCF will offer full training and supervision, an opportunity to learn new skills and the chance to do something worthwhile. Travel and other small expenses will be reimbursed. Volunteers should be able to commit for two hours a week for at least six months.



For more information

To take part in a scheme or to hear more about volunteering in general, contact Petronela Sasurova
• 020 7594 8141
• volunteering@imperial.ac.uk

For full details of over 250 volunteering opportunities visit: www.imperial.ac.uk/volunteering

Subscribe to the weekly newsletter by emailing volunteering@imperial.ac.uk



First published in 1995, *Reporter* aims to share stories of Imperial's community and to highlight individual and College achievements. *Reporter* is published every three weeks during term time in print and online at www.imperial.ac.uk/reporter.

The copy deadline for issue 202 is Wednesday 18 February. Publication day is 5 March. Contributions are welcome (no more than 300 words). Please note the editor reserves the right to cut or amend articles as necessary. Information correct at time of going to press.

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