

# Baby monitor

Imperial medics get new arrivals off to the best start

→ CENTRE PAGES



## BIRTHDAY HONOURS

Royal recognition for Imperial staff

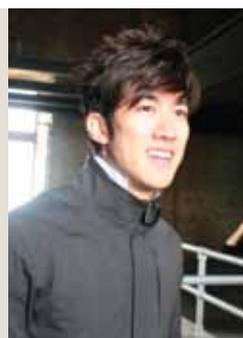
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## FEATURE FOCUS

Lord Kerr reflects on his six years as Council Chair

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## STAR STORIES

Hong Kong's latest leading man visits South Ken Campus

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EDITOR'S CORNER

## Game on

### Olympic ticket

disappointments have been the focus for coffee point grumbings recently. My own efforts to be at the games mean I will be watching hockey in 2012. I would have preferred to be at the **opening ceremony**, enjoying fireworks far more than actual sports, but my complaints are not well-received among ticketless colleagues. Perhaps we should instead grow our appreciation of more local, less traditional Olympic challenges. Events could include navigating the metal fences and confusing traffic on Exhibition Road at the moment, or refining the technique of ancient rain dancing, as demonstrated by students during the soggy **Summer Ball**

featured on page 11 of this issue. On page eight Lord Kerr discusses shaking hands with graduands at the annual ceremonies at the Royal Albert Hall – with over 2,000 in under three hours, this has Olympic potential as well. For those of you who have missed out on tickets, you can take some comfort in the fact that **Imperial will be involved** in many different aspects of the 2012 games. The next issue of *Reporter* will have more details, as well as marking the return of Emily to the helm.

JOHN-PAUL JONES, ACTING EDITOR

Reporter is published every three weeks during term time in print and online. The next publication day is 21 July. Contact Emily Ross-Joannou: [reporter@imperial.ac.uk](mailto:reporter@imperial.ac.uk)

## Student support awards

Winners of the 2011 Rector's Awards for Excellence in Pastoral Care and for Supporting the Student Experience have been announced.

The pastoral care awards are presented annually to reflect the importance of providing a supportive learning environment to students. This year's five winners included Dr Martyn Boutelle (Bioengineering), who was also awarded a Rector's Medal for his outstanding contribution.

New this year are the Rector's Awards for Excellence in Supporting the Student Experience,

launched to underline the important contribution that staff in non-academic roles make in underpinning the College's learning environment.

The first 10 award-winners include Dr Lorraine Craig (Earth Science and Engineering) and Research Manager Dr Emma Watson (NHLI), who also receive Rector's Medals.

Professor Denis Wright, Dean of Students, commented: "As judges, we were delighted to see so many high quality applications from different parts of the College. Both



awards are a great opportunity to recognise the important role that academic and non-academic staff alike can play in supporting our students and enhancing their experience while at Imperial."

The Rector's Medals will be presented at Commemoration Day in October and the full awards will be presented at the next Education Day in November.

—WENDY RAESIDE, COMMUNICATIONS AND DEVELOPMENT

For a full list of winners see: <http://bit.ly/rectorawards>

## New volunteers lend their support



**On 9 June, the Rector welcomed new volunteers into the Harassment Support Contact (HSC) Network, at a reception marking the contribution of HSC volunteers.**

The HSC network, initiated in 2004, consists of volunteer staff from across the College who can confidentially support anyone experiencing bullying and harassment. The volunteers act as sounding boards for staff having difficulties in their working relationships and, in some cases, can offer more formal support, such as coaching and mentoring.

Volunteer Althea Hartley-Forbes (Chemistry) said: "I wanted to become part of the HSC network, as I know how hard it is to manage such situations

without the right support. Being available to help someone by listening, and providing informal and confidential support, can make a great difference to their situation. Making a difference for someone in need is what inspires me in this role."

The Rector thanked all involved in the HSC for their work: "What you are all doing is greatly appreciated by the College. We have a zero tolerance stance on harassment and bullying, but there is more work to be done to ensure this position is always reflected in reality within the workplace. The efforts of the HSC are a hugely important step in this process."

—JOHN-PAUL JONES, COMMUNICATIONS AND DEVELOPMENT

For support from the HSC, approach the Equalities Unit or the volunteers: <http://bit.ly/imperialhsc>

## New Pro Rector for International Affairs



Dr Simon Buckle has been appointed Imperial's next Pro Rector for International Affairs, it was announced on 29 June. Currently Director of Climate Policy in the Grantham Institute for Climate Change, he will

also become responsible for the College's strategic international interests from 1 October, working closely with the Pro Rectors for Education and Academic Affairs, Research and Enterprise to identify and advance new opportunities.

Rector Sir Keith O'Nions said: "Collaborating with world-class researchers, attracting the best students from all corners of the globe and reaching out to our supporters, including our alumni from across 190 countries, are among the priorities for the College's international strategy. Simon's track record of leveraging networks and producing the most value from international connections makes him the ideal candidate to champion Imperial's international activities and I am delighted that he has agreed to take on this role."

Dr Buckle joined Imperial in 2007 to support the establishment of the Grantham Institute, helping to position it as a leading source of scientific and technical expertise on climate change. Dr Buckle said: "I feel extremely privileged to have been appointed to this role in such a vibrant and successful community. I look forward to working with colleagues and international partners – both new and existing – to help shape and drive forward the international dimensions of the College's strategic vision."

—CAROLINE DAVIS, COMMUNICATIONS AND DEVELOPMENT

# Queen's Birthday Honours

Fostering international research collaborations on energy and promoting wider student participation in higher education are among the achievements of College staff recognised in last month's Queen's Birthday Honours.

Staff honoured included Professor Nigel Brandon (Energy Futures Laboratory), who was awarded an OBE for his services to UK/China relations in science, and Alan West (Reach Out Lab), who received an MBE for services to science, technology, engineering and mathematics education.

For the past five years, Professor Brandon, Director of the Energy Futures Laboratory, the College's hub for interdisciplinary energy research, has been working with Research Councils UK on their energy programme, focusing on the development of international collaborations between the UK and China. He said: "I am absolutely delighted to receive this award. I know my family, and my mum and dad, are really proud."

Alan West is Director of the Reach Out Lab, a high-tech space where school teachers and students can gain practical experience of science. To date, more than 8,000 students and teachers have taken part in activities that many state schools would be unable to organise in their own classrooms.

Others honoured included Elisabeth Willemien Paice, Visiting Professor (Surgery and Cancer), awarded an OBE for services to medicine, and Brian Gazzard, Visiting Professor (Medicine), who received a CBE for services to medicine. Dr David McIntosh, Honorary Senior Lecturer (Medicine) was made a Member in the General Division of the Order of Australia, in recognition of his services to medicine, particularly vaccines and infectious



Top: Professor Brandon joked that his children could now call him 'Dad OBE'. Bottom: Alan West said his honour was a complete surprise to him.

diseases. Several Imperial alumni were also honoured, including John Loughhead, Executive Director of the UK Energy Research Centre, which is based at Imperial.

—COLIN SMITH, COMMUNICATIONS AND DEVELOPMENT

## Alumni asked to support scholarships

The Rector's Scholarship Fund was launched in June with an initial appeal that aimed to raise £200,000 by the end of July. Alumni received a pack of information about the new fund explaining that the College intends to continue to attract the best students, regardless of their means, when changes to higher education funding come into effect.

All gifts to the Rector's Scholarship Fund will be used entirely to fund scholarships for students whose financial circumstances mean that they might otherwise be unable to attend Imperial. The mailing was sent out to 50,000 alumni in 146 countries. Over 400 new gifts were received in the first ten days, ranging in size from £5 from a current student to a donation of £1,500.

Writing to alumni, Rector Sir Keith O'Nions said: "It is because of gifts from generous alumni that we have been able to fund scholarships in the past. Now they are needed more than ever. You can help us to offer many more this summer to keep Imperial's student mix as diverse and exceptional as ever".

Undergraduate David



Hilton (Chemical Engineering and Chemical Technology) is a current scholarship beneficiary who says the funding has made

"Because of what I've been given, I'll definitely want to help ensure that other people have similar opportunities too"

a noticeable difference in allowing him to focus on his work without the distraction of juggling a part-time job alongside his studies. David added: "Because of what I've been given, I'll definitely want to

help ensure that other people have similar opportunities too."

Within the scholarships pack alumni also received a greetings card, featuring images of Imperial students through the decades, designed to remind them of their student days, with the suggestion that they use it to share memories with another Imperial graduate.

—ELIZABETH ATKIN, COMMUNICATIONS AND DEVELOPMENT

### in brief

#### Tweeting day



Students, staff and alumni took part in the College's 'Twitter day' on 17 June. The day was organised as

part of UUK's Universities Week 2011. Its aim was to tell the story of a day in the life of a university using Twitter, demonstrating the breadth of activities and giving an insight into behind-the-scenes operations. The first tweet using the hashtag #impcoll was posted at 01.09, with early tweets capturing the first mail deliveries and sunrise over the Queen's Lawn. Imperial was the most active university taking part – over 600 tweets were contributed during the day.

#### Inspiring award for Reach Out Lab

The Reach Out Lab's success in inspiring secondary schoolchildren in science, technology, engineering and mathematics (STEM) has been recognised with a London Education Partnership Award. The annual awards mark innovative initiatives to transform the life prospects of London's young people and adults, and widen participation in higher education. The award was given in the category 'Inspiring Journeys: Excellent Professional Practice in Curriculum Support for STEM'.

#### Top accolade for European Research Council founder

Professor Fotis Kafatos (Life Sciences) is the first UK-based scientist to be awarded the prestigious Leibniz Medal by the Berlin-Brandenburg Academy of Sciences and Humanities in Germany. The award, shared by Professor Kafatos and his colleague Professor Ernst-Ludwig Winnacker from the Human Frontier Science Program based in Strasbourg, recognises their role in establishing the European Research Council, which oversees scientific and engineering research across the continent.

For the full story see: <http://bit.ly/kafatos>

"You can't predict all risks but you can predict that unforeseen things will happen. Today's unforeseen things were a rabbit and a bird family."

ALISON AHEARN (CIVIL AND ENVIRONMENTAL ENGINEERING) ON CONSTRUCTIONARIUM, A PROJECT OFFERING STUDENTS BUILDING SITE EXPERIENCE. FOR MORE DETAILS SEE: [HTTP://BIT.LY/CONSTRUCTIONARIUM](http://bit.ly/CONSTRUCTIONARIUM)

## media mentions

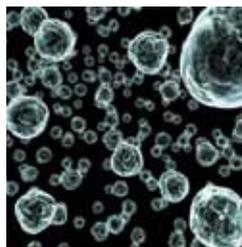
—SIMON LEVEY, COMMUNICATIONS AND DEVELOPMENT



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BBC NEWS ▶ 2.6.2011

### New deadly tummy bug emerges



Researchers and public health experts believe the *E. coli* outbreak in Germany is the result

of a newly-evolved form of the bacterium, reports BBC News. It can cause a deadly complication – haemolytic-uraemic syndrome – affecting the blood and kidneys. To date (30 June), more than 4,000 people have been infected and 48 have died in Europe. “This is a new combination and a deadly combination,” Professor Gad Frankel (Life Sciences) told BBC Radio 4 listeners at the start of the outbreak. “It has a gene which produces a toxin and another which helps the bacterium colonise the gut more efficiently, which effectively means even more toxin is produced.”

THE NEW YORK TIMES

▶ 2.6.2011

### Batteries that can multitask

Engineering researchers are working on new designs for electric cars that will improve their driving distances and dramatically cut their weight, says *The New York Times*. Dr Emile Greenhalgh (Aeronautics) leads research at Imperial that is improving the amount of electrical energy a car can store, by adding body parts made of a new composite material that can hold electrical charge until needed. “Although the energies they provide are fairly modest,” he said, “they have shown that our material could be used to smooth the demands on the battery, thus enhancing its life.”

BLOOMBERG BUSINESS WEEK

▶ 12.6.2011

### Italy sells off ‘chaotic’ TV sector

The Italian government is attempting to raise funds by selling off publicly owned broadcasting frequencies, reports *Bloomberg Business Week*. The frequencies are in high demand by mobile telephone operators, who say they can be used to carry the broadband data signals required to service the surge in smartphone users. Television stations are demanding compensation for giving up the right to use the frequencies, which are worth around 2.4 billion euros to the government. The auction has been handled in “a quite chaotic way,” said Professor Tommaso Valletti (Business School) in an interview. “There’s been a bit of the ‘wild west’ in the Italian frequency sector. It won’t be easy to disentangle.”

THE LANCET ▶ 17.6.2011

### A health check on social networking



Doctors and patients’ use of social networking raises many complex issues.

Imperial’s Helen Atherton and Professor Azeem Majeed (Public Health) wrote to *The Lancet* to question whether doctors should use personal information that is freely available on a patient’s Facebook profile and how comfortable they would feel socialising with patients online. The College researchers said: “Concerns about the effect of new technology on the doctor-patient relationship were probably being expressed when telephones were introduced more than 100 years ago. Rather than viewing new technology as a threat, we should use the opportunities it offers to improve the efficiency and effectiveness of health systems and to improve people’s knowledge of their health and illnesses.”

## awards and honours

### MEDICINE

#### Consortium wins awards

The Cystic Fibrosis Gene Therapy Consortium, a collaboration between Imperial and the Universities of Oxford and Edinburgh, had a double success at the Medical Futures Innovation Awards 2011. The consortium, which is coordinated by Professor Eric Alton (NHLL), received the MRC Translational Research Award and Best Therapeutic Innovation (Respiratory) prize. It has developed a new method of delivering DNA into the lungs of cystic fibrosis patients using a virus. The awards recognise

groundbreaking innovation by frontline clinicians and scientists that have the potential to transform people’s lives.

### BUSINESS SCHOOL

#### Mid-career fellowship

Professor Walter Distaso (Business School) has received a mid-career fellowship from the British Academy. The award will support Professor Distaso’s research on the risk management implications of weather-related extreme events. The fellowships exist to support outstanding individual researchers with excellent research proposals, and communicators who will promote public understanding and engagement with humanities and social sciences, by freeing up time from normal duties.



Professor Nick Long

### NATURAL SCIENCES

#### Inorganic chemistry chair

Professor Nick Long (Chemistry), pictured, has been appointed to the Sir Edward Frankland BP Chair in Inorganic Chemistry at the College. Previously Professor of Applied Synthetic Chemistry in the Department, his research expertise lies in transition metal coordination and organometallic chemistry. The Chair is one of the most prestigious chemistry positions in the world. It was created for, and first held by, Professor Sir Geoffrey Wilkinson,

Fellow of the Royal Society and Nobel laureate.

### MEDICINE

#### Prizewinning cardiovascular images

Researchers from the BHF Centre of Research Excellence at Imperial have won two awards in the British Heart Foundation’s research image competition, Reflections of Research. The Centre’s prizewinning entries were an animated representation of blood flow, created by Dr Ana Plata (NHLL) and colleagues, and a 3D reconstruction of a congenitally malformed heart, created by Dr Sonya Babu-Narayan (NHLL) and her colleagues.

Read more about the winning entries at <http://bit.ly/impheart>

## Creating material that mimics dolphin skin



Researchers from Imperial and UCL are planning to develop a new material that mimics dolphin skin to help water flow more easily along pipes.

The new material could reduce the amount of energy used to pump huge volumes of water through vast networks of water pipes; a necessity in arid countries such as Australia and Libya, which rely on vast pipeline networks to transport water to areas where it is scarce.

The resistance between pipe walls and flowing water causes friction, which means that huge amounts of energy have to be used to pump a large volume of water to its destination. To address this, Dr Michael Templeton (Civil and Environmental Engineering) and Dr Andrew Wills, from the Department of Chemistry at UCL, aim to mimic

the chemical properties and microscopic physical structure of some of the most slippery surfaces in nature to develop a new friction-reducing material.

One of the surfaces that the researchers are exploring is dolphin skin. Chemicals combine with tiny bumps on the animal's skin to reduce the friction between it and the water through which it is swimming. Similarly, the new material could have nanoscopic bumps to control water flow, allowing the water to run more easily over its surface. It could also be coated with water-repellent chemicals to reduce the friction between the water particles and the pipe's surface.

The work is one of seven early-stage projects supported by the Kick-Start scheme, which aims to advance engineering research and promote collaborations between Imperial and UCL.

—COLIN SMITH, COMMUNICATIONS AND DEVELOPMENT

## Diabetes – a global epidemic

A major study of worldwide data on diabetes has found that the number of adults with the disease reached over 300 million in 2008, more than double the number in 1980.

The research, published in *The Lancet* on 25 June, reveals that the prevalence of diabetes has risen, or at best remained unchanged, in virtually every part of the world over the last three decades.

The study, the largest of its kind, was carried out by an international collaboration of researchers, led by Professor Majid Ezzati from Imperial and Dr Goodarz Danaei from Harvard School of Public Health. They found that between 1980 and 2008, the number of adults with diabetes rose from 153 million to 347 million. Seventy per cent of the rise was due to population growth and ageing, with the other 30 per cent due to a higher proportion of people having diabetes.

Professor Ezzati (School of Public Health) said: "Diabetes is one of the biggest causes of morbidity and mortality worldwide. Our study has shown that diabetes is becoming more common almost everywhere in the world. This is



in contrast to blood pressure and cholesterol, which have both fallen in many regions. Diabetes is much harder to prevent and treat than these other conditions."

"Our study has shown that diabetes is becoming more common almost everywhere in the world"

Diabetes occurs when the cells of the body are not able to take up sugar in the form of glucose. This means that the amount of glu-

cose in the blood is higher than normal, raising the risk of heart disease and stroke, and damage to the kidneys, nerves and retinas. High blood glucose and diabetes are responsible for over three million deaths worldwide each year.

—SAM WONG, COMMUNICATIONS AND DEVELOPMENT

## Identity shifting subatomic particles?

British and Japanese research involving Imperial physicists indicates that subatomic particles, called neutrinos, may have a previously unseen form of identity-shifting property. These results could potentially help scientists explain the mystery of why the universe contains matter but very little antimatter. Professor Dave Wark (Physics) leads the UK's involvement in the experiment.

The findings are the first from the T2K neutrino experiment in Japan. They appear to show neutrinos changing, or oscillating, between different types in a new third way, whereas they had

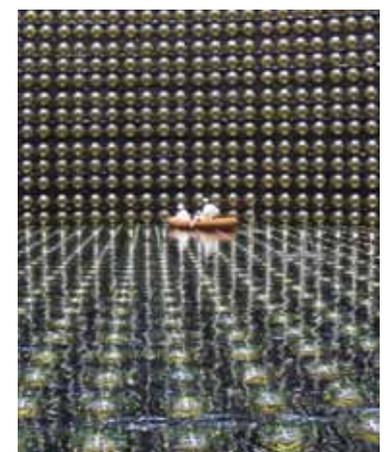
previously only been seen to oscillate in two ways. The physicists say these results mean it is possible for neutrinos to oscillate in a different way to their antimatter counterparts (called anti-neutrinos). Equal amounts of matter and antimatter were thought to have existed at the start of the universe but now the vast majority of everything scientists can observe is made of ordinary matter. If the new results prove to be true, then a difference between neutrinos and anti-neutrinos could help explain how all the antimatter has disappeared from the universe, leaving only ordinary matter.

The results are based on an

observation that has a 1 per cent possibility of happening by chance, so the researchers say this result is not statistically significant enough to confirm a new physics 'discovery'. Instead, they are calling this an 'indication'.

Professor Wark said: "People sometimes think that scientific discoveries are like light switches that click from 'off' to 'on', but in reality it goes from 'maybe' to 'probably' to 'almost certainly' as you get more data. Right now, we are somewhere between 'probably' and 'almost certainly'."

—SIMON LEVEY, COMMUNICATIONS AND DEVELOPMENT



Physicists working inside the Super Kamiokande neutrino detector in Japan, part of the T2K neutrino experiment.



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# Arrivals duty

When a junior doctor starts work on the maternity ward at Imperial College Healthcare NHS Trust, Professor Phillip Bennett, Honorary Consultant in Obstetrics and Gynaecology, offers them a piece of advice, emphasising the importance of being involved in a baby's arrival into the world:

“What for you is just an ordinary day at work is, for the mother-to-be and her family, one of the most important days of their lives. They will remember everything you say and do.”

Over at Chelsea and Westminster Hospital NHS Foundation Trust, Honorary Consultant Neonatologist Professor Neena Modi typically appears shortly after a woman has given birth, looking after babies with health problems, such as those born prematurely or with congenital abnormalities.

In their clinical work, Phillip and Neena play hands-on roles in the first hours, weeks or months of a baby's life. In addition, they, and many others around Imperial, are looking at what happens in the womb before and during birth, and how intervening whilst a fetus is in the womb could improve a child's health.

## Preventing premature labour

In Phillip's cosy office on the Hammersmith Campus, hospital scrubs and thank you cards from grateful families jostle for space with textbooks, PhD theses and journals. From this setting, a brief walk across campus from the labour ward, Phillip is looking at ways of predicting when women are likely to go into premature labour, and investigating how to prevent this from happening.

Babies born prematurely can face problems including impaired brain development, and difficulties with breathing and fighting infection. “Premature labour is a syndrome, not a single disease. There are a number of different causes and we need to identify different therapies,” says Phillip, who is a Professor of Obstetrics and Gynaecology in the College's Department of Surgery and Cancer.

The risk of complications increases the earlier a baby is born and Phillip is particularly focused on preventing labour in the period when the risk of serious problems is greatest, before 32 weeks. Premature labour during this time is most commonly caused by abnormal inflammation in the womb, which in some, but not all, cases is linked to infection. Recent research suggests that this inflammation can itself damage the growing fetus, in addition to the problems caused by the baby arriving too early.

Phillip's work has revealed that a cell signalling system called NF-kappaB plays a key role in the inflammatory response inside the womb during labour. Researchers are now investigating how targeting NF-kappaB might



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1. Professor Phillip Bennett holds one-day-old baby Simon at the Queen Charlotte's and Chelsea Hospital. Behind him is a noticeboard full of thank you cards and letters from the families helped by staff on the ward.

2 and 3. Professor Neena Modi pictured in the Neonatal Centre at the Chelsea and Westminster Hospital, and in her office at the Neonatal Research Unit.

4. Professor Bennett with baby Simon and mother, Laura.

from neonatal units like this one across the UK, in order to improve the outcomes and quality of care for newborns.

In addition, Neena is looking beyond the neonatal period and exploring how the environment in the womb, premature birth and other aspects of a baby's arrival can influence his or her health long after he or she has left hospital.

Even the method by which a baby is delivered can have an effect on his or her long-term health, well into adulthood. Studies suggest that when a mother has an elective caesarean section, and hence does not start the process of labour, her baby is at a 20 per cent increased risk of developing conditions such as asthma and diabetes later in life.

"The biological reasons as to why this should be so are fascinating," says Neena, who is also a Professor of Neonatal Medicine in the Department of Medicine. Her group is investigating whether and how the processes of labour might program a baby's organ, immune and respiratory function. Neena is working with Professor Elaine Holmes (Surgery and Cancer) to understand the biological processes that lead from the newborn period to later health and disease.

Neena believes that wherever possible, it is vital to intervene to improve a baby's health in the earliest stages. "If you don't target the intrauterine period and the early newborn period, a huge opportunity to improve the health of the whole population is being lost," she says.

Neena's group has recently

published findings relating to the impact of a mother's health on her child, primarily using research from Lara Philipps, an Imperial medical student who has been working with the group. In a meta-analysis for her BSc project, Lara's work has provided new insight into how a mother's diabetes affects her child's risk of developing metabolic problems in later life. The study, published in *Diabetologia*, showed that when the data were fully adjusted for different factors, the child's greater risk of obesity was linked to the mother's body mass index and not her disease. "The important thing about this is that women can do something about it, whereas they often can't change the fact that they have diabetes," says Neena. "Therapy and prevention need to go hand in hand – if you can prevent a problem early on, then there will be no need for therapy."

#### Making a difference

When an ordinary day at work is so important, it does not take much to motivate Phillip and Neena. Their experiences as clinicians provide

much of the inspiration for the research that they carry out.

Phillip is driven by wanting to help those women for whom pregnancy is not straightforward. "For me, the most rewarding thing is when I look after a woman who has lost babies before and I'm able to do

something for her that means she's able to have a family," he says.

Neena never loses her curiosity about the babies who have been in her care, and this is partly what drives her interest in making sure that babies stay healthy as they grow.

"The best moments are having a child who's been through the wars on the neonatal unit come back several years later," she says. "You can remember how harrowing it was and you can remember them going home, not quite sure what the future was going to bring, so when they come back and they're doing absolutely fine, that really is lovely."

—LAURA GALLAGHER, COMMUNICATIONS AND DEVELOPMENT

“Therapy and prevention need to go hand in hand – if you can prevent a problem early on, then there will be no need for therapy”

prevent abnormal inflammation.

His studies have also contributed to scientists' understanding of what happens during labour, by showing that an enzyme called COX-2 plays a central role in its onset. This has led to research exploring how COX-2 might be inhibited in order to prevent women going into labour prematurely.

Ensuring that such treatments help the women who most need them is a further challenge that Phillip's group is seeking to address. He explains that many of the women who go into premature labour are not currently identified until it is too late. "By the time they get to the point of having contractions, you have missed the opportunity to prevent it," he says.

Phillip's group is working with Professor Jeremy Nicholson and Dr Elizabeth Want from Biomolecular Medicine to identify whether any molecules in the blood or urine might reveal which women are likely to have a premature labour, in a project funded by the Biomedical Research Centre. "If those molecules can be easily measured, it could lead to a really simple test for pregnant women," he says.

#### From labour to long-term health

In the Chelsea and Westminster Hospital's neonatal unit, Neena is doing a ward round with some colleagues. Her patients lie quietly inside clear plastic cots that keep their environment regulated. Their bodies are connected up to fine tubes that help them breathe and to machines that monitor their vital signs.

The Neonatal Data Analysis Unit at Imperial, which Neena heads up, analyses a wealth of data



# Lasting legacy

Lord Kerr of Kinlochard has been Chairman of Imperial's Court and Council since 2005. A member of the UK diplomatic service from 1966 to 2002, his globetrotting career included time in Washington, Brussels and as head of the service. He will step down from the role of Chairman in July, when he will be succeeded by the current Deputy Chairman, Baroness Manningham-Buller. In an interview with *Reporter*, John reflects on his time at the College.

**What did you think when you were approached about the position and why did you accept?**

I remember when the then Rector, Sir Richard Sykes, asked me to become Chairman, I told him I didn't feel competent to do so. I was from Oxford and an arts man. Richard told me: "That's why we want you – because you will be completely incompetent. If you were a physicist, the medics would all regard you as biased in favour of physics, and so on. The great thing about you is that you're none of these – you'll be impartially incompetent!" And I think the Council should not be composed of brilliant scientists – the university is stuffed with those. What the Council should add is something else, and one of the main things I have tried to do over time is strengthen its composition, the way it works and its authority. I think that's gone very well. But we shouldn't exaggerate the importance of the Chairman. They're good to have, but you don't want them around too much.

“I have told a selection of some of the worst jokes that have been told in the [Albert] Hall's 140-year history”

**One of your first priorities was to improve the Council's gender balance. Why did you feel this was important?**

I joined a Council that was pretty male, but my previous experience on various boards has taught me that they actually work better when there is a broad gender balance. Women do think in a different way to men, and you're really missing something if the problem you're addressing isn't attacked from both angles. I was very keen that we should look harder for brilliant women and try and persuade them to join us, and we've done rather well on that. And in my successor you have a strong personality who will run the Council better than I have. Eliza is very clear-minded, very decisive. She'll bring a lot of enthusiasm, as well as a rapier-like brain. So you guys had better take care!

**What are your personal highlights?**

When I first realised I was going to be Chairman, I wandered around the campuses, and was horrified to discover how unlike my own student days was the life of an Imperial undergraduate. The place was full of students at 23.00! I don't mean just the bars – I mean the library. So the thing I'm particularly pleased about is how we have been able to expand and improve the library. Previously we couldn't expand because we shared space with some of the Science Museum's collection. We were in dispute with them about who owed whom for rent, but we were able to get an agreement we were both happy with. And I was very pleased with that, as I was able to crack that one myself. And now when I walk into the library at 23.00, it's still full even though it's twice the size. One of my frustrations is that I haven't persuaded Imperial to be more relaxed of an evening.

**What have you enjoyed most?**

One highlight would be the role I have played in graduation. Every degree day in the Royal Albert Hall, the Chairman shakes hands with all those graduating, which is lovely, because you share a little bit of their happiness. Then when the ceremony is over, the Chairman goes to the lectern and he makes a little speech. And I have told a selection of some of the worst jokes that have been told in the Hall's 140-year history. The sense of power you have, standing there, holding the audience, whilst they wait for the punch line is magic. I clearly missed my vocation – I should have been an actor.

**Could you give our readers an example of one of your jokes?**

Certainly not – you've got to get a degree to hear that!

—SIMON WATTS, COMMUNICATIONS AND DEVELOPMENT

# inside\*

## story

### mini profile



## Maria Belvisi

Professor Maria Belvisi (NHLI), has been awarded the 2011 AstraZeneca Prize for Women in Pharmacology by the British Pharmacological Society. The prize recognises women whose career achievements have contributed significantly to our understanding of a particular field through excellence in research.

### How would you sum up your work?

I'm a pharmacologist looking into the pathophysiology of lung diseases, such as asthma, COPD (chronic obstructive pulmonary disease) and chronic cough, to find out the mechanisms that might initiate and perpetuate the disease but also, importantly, the avenues for novel therapeutics.

### What are your main achievements?

Running a successful research group and training future scientists – BSc, MRes, PhD students – most of whom I'm still in touch with and who have remained in science.

### Are there still obstacles for women going into science?

Statistics say that there are. There's not a barrier going into science, but career progression is still very much a problem. In most universities, only 10 per cent of professors are women, so there is a considerable drop-off at a senior level. We need to have more women on decision-making panels – being on those committees gives you the knowledge and contacts which are so important when applying for grants. Women also need to have role models and that's what prizes like this are about.

### What projects are you working on at the moment?

We're interested in the interaction between inflammation in the lung and the activation of sensory nerves to elicit reflex events, such as coughing. We think that the interplay between nerves and inflammation is the basis for a lot of symptoms in respiratory diseases. We're therefore exploring the roles of signalling chemicals called prostaglandins, which help regulate inflammation in the airways, and on a group of proteins that act as irritant receptors in the lungs. We think that both might present good therapeutic targets for novel drugs to block either inflammation or the cough reflex.

—SAM WONG, COMMUNICATIONS AND DEVELOPMENT

## Campus popstar

The journey from physics graduate to international actor and pop star isn't particularly well travelled. So when Hong Kong alumnus Aarif Lee returned to the South Kensington Campus recently, Simon Watts from Communications and Development took the opportunity to ask him just how he did it:

"Aarif, who graduated from Physics in 2008, is primarily known for his music in Hong Kong, but has recently branched out into films, taking the lead role in *Young Bruce Lee*. As we toured his old campus haunts he spoke about his time at Imperial and why he swapped the laws of motion for kung-fu and Cantonese pop.

Always more the musician than the physicist, Aarif said the music technology elective course he took was instrumental in his development. After graduation, he returned to Hong Kong where he began publishing and recording the songs he'd written in his basement flat at Albert Hall Mansions. That early success brought him to the attention of a



Aarif Lee returned to campus to shoot photos for his new album cover.

“It's quite amazing how much this place has shaped me as a person.”

director looking to cast a young Bruce Lee. Without a martial arts background, the training for the role proved intense: 'We only had about two months and apparently Bruce was an ace cha cha dancer, so I had to learn that as well!', he said.

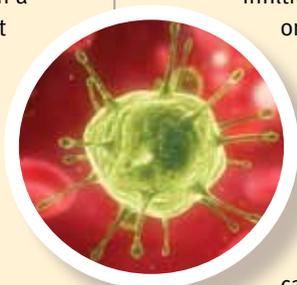
We returned to the Library, scene of many a late-night cramming session, where Aarif recalled: 'I've got a lot of memories from Imperial, and it's quite amazing how much this place has shaped me as a person. I was never really one of those Physics geniuses, so it was quite a challenge for me – the learning curve in the first year was really quite steep. Perhaps I'll be like Brian May and return at some point to do a PhD.'"

### ▶ SCIENCE FROM SCRATCH

As explained by Pippa Goldenberg, MSc Science Communication

## Virus

A virus is a small particle about one hundredth of the size of a bacterium that infiltrates and infects living cells in order to replicate. Viruses consist of only their genes and a protein coat that protects these genes. When inside living cells, viruses can either reproduce exactly or mutate. Those that mutate can create more effective, or resistant, strains of disease that make treatment much more difficult. These adaptable viruses cause the common cold, which is why it is so difficult to cure – there are so many different strains that no single vaccine is effective. In genetics, viruses can be used to study the structure of cells, as they provide simple systems that can be easily manipulated. They are also used to introduce genes into other cells in order to study the consequences, such as in the developing field of virotherapy, in which viruses are used to introduce treatments to specific cells, for example, those affected by cancer.





## INVENTOR'S CORNER

# Measuring up

Dr Kate Mandeville, who trained as a doctor at Imperial, is now a registrar in public health and undertaking a PhD at the London School of Hygiene and Tropical Medicine. She has been working with Imperial Innovations to commercialise her invention that could revolutionise how doctors take fluid from around the brain.

### What have you invented?

A new design for the device that doctors use to measure the pressure of a patient's cerebrospinal fluid, the fluid around and inside the brain and spinal cord, or to take a sample of it. When I was a junior doctor, I had to do a number of lumbar punctures, the procedure required to test for diseases such as meningitis. I found it difficult to use the existing device, as it's unwieldy and difficult to assemble or operate alone, having not been updated since the 1940s.

### How did you develop the new device?

I had the idea and some potential solutions, but didn't know how to

pursue developing the new device. Imperial Innovations put me in touch with Lisa Stroux, a designer from the Royal College of Art and we worked together to develop a number of potential designs. I shared them with my colleagues and most of them preferred one in particular – and that's what we went for.

### How is the new device improved?

It's much easier to operate and can be used single-handed so you no longer need two people for the procedure. It's

also in one piece, so doesn't need assembly, and will comply with new safety regulations.

### Is the device in use now?

The new device has been licensed to Rocket Medical, a

UK manufacturer of medical devices. They're developing it further and it should be on the market soon. It's exciting to know something I developed could be used in hospitals.

—GAVIN REED, IMPERIAL INNOVATIONS

For information about Imperial Innovations visit: [www.imperialinnovations.co.uk](http://www.imperialinnovations.co.uk)

“It's exciting to know something I developed could be used in hospitals”

## course review



By course attendee Dianne Morris (Surgery and Cancer), a research midwife in the Institute of Reproductive and Developmental Biology, and Women's Health Research Centre.

# Imperial insights

### Why did you go on the course?

I went to Imperial Insights because I am a new employee and wanted to find out exactly what courses and professional development programmes Imperial has to offer enthusiastic employees such as myself.

### What did you learn?

I learnt about Imperial's standing in Europe and the wider world, and more about how the College's research encompasses a number of different specialisms, not just medicine. I was impressed by the number and range of professional development resources that are available to employees and, particularly, the career coaching and management development courses that could enhance my career prospects in the future. I was also interested in learning about the history of the South Kensington Campus and the College's activities around equality and outreach. I'd be keen to find out more about getting involved in them.

### Why would you recommend it and for whom?

I would recommend Insights to both old and new employees, as this was an excellent way to find out more about the College.

For more details on the course see: <http://bit.ly/imperialinsights>

## Student role at mayor's reception

Syedah Neha Ashraf (pictured right) is doing a BSc in Pharmacology and Translational Medical Science with a year in industry in the School of Medicine and is also a Rector's Ambassador. She tells *Reporter* about speaking at the Mayor of London's international student reception on 20 May, which celebrated the diversity that international students bring to the capital.

“I'm very enthusiastic about being a student at Imperial, and always enjoy the chance to share what I have gained from my experiences here.

The Mayor's reception was an opportunity to take this to the next level. Imagine a panoramic view from the top floor of City Hall, live jazz music and 250 students from over 120 countries all in one room – it was amazing.

Among the guests were the Deputy Mayor, Richard Barnes (Boris was busy) and Martine Ainsworth-Wells, Director of Marketing and Communications for London and Partners, the city's promotional agency. They joined students who had been nominated by their universities to attend.

Taking up the microphone, I described my learning experience in London so far – from choosing a degree at Imperial to securing a year in industry with GlaxoSmithKline and gaining membership of the British Pharmacological Society.

“Imagine a panoramic view from the top floor of City Hall, live jazz music and 250 students from over 120 countries”



For the rest of the evening, I was surrounded by students who were interested in translational medicine. At some point in the future, I might take up public speaking or media communication, but I would like to focus on research just as much.”

IMPERIAL STUDENTS SHARE THEIR EXPERIENCES OF LIFE AT THE COLLEGE ON THE STUDENT BLOGGERS WEBSITE.

## Student blogger Dawn on things I've learnt this year:



Apart from the obvious learning of geology stuff, such as the difference between *biotite* and *muscovite mica*, I've also learnt so much more! I've also found out that a lot of the fears I had at the start of the year (mainly revolving around ending up with no friends and spending the entire weekend on my own, sitting in my room with nothing to do) were the same for a lot of other people...



So, looking back, I have actually developed so much as a person by coming to university – coming here is the best decision I have ever made!

[www.imperial.ac.uk/campus\\_life/studentblogs](http://www.imperial.ac.uk/campus_life/studentblogs)

## Singing in the rain

Alumnus and former Union President Ashley Brown, one of the guests at the Summer Ball on 18 June, reports:



Hardy ball guests brave the rain

“The weather gave the ball a festival atmosphere, with people dancing in the rain with brollies, or those who were less prepared running for cover when the downpour came then reappearing with the sun. The change in dress code from black tie meant that people could turn up in a range of outfits, including everything from ball gowns to tiger costumes. At Prince’s Gardens it was a chilled-

out affair, allowing people to relax and sample some food from the same group who run the Beit farmers market – the jerk chicken was highly recommended. On the Queen’s Lawn, one music act was accompanied by flamethrowers either side of the stage, which added some much appreciated

warmth to proceedings. Music on the main stage ended just after the fireworks at about 23.00, but the Union was then packed for the after party. The new *Metric* nightclub saw its first summer ball and got a good workout, with a large group still around for the survivors photo.”

## Welcome new starters

- Miss Rachael Akinwunmi, EYEC
- Mr Brian Appelbe, Physics
- Miss Agnieszka Brandt, Chemistry
- Dr Ciro Chiappini, Materials
- Mrs Sarah Chilcott-Burns, Surgery and Cancer
- Miss Judith Cohen, Civil and Environmental Engineering
- Mr Konstantinos Daskalakis, Physics
- Miss Patricia De Almeida Ferreira, Catering Services
- Ms Ann-Marie Dovernas, Medicine
- Mrs Tracy Evans, Medicine
- Mr Peter Gammon, Materials
- Ms Andrea Goldstone, NHLI
- Miss Miriam Goyder, Chemistry
- Miss Katherine Gray, Computing
- Miss Susan Hines, Public Health
- Dr Kelsey Jones, Medicine
- Miss Alexandra Kareh, NHLI
- Miss Andrea Kiraly, Accommodation
- Mr Ben Kistnah, Chemical Engineering and Chemical Technology
- Dr Ioannis Lavdas, Surgery and Cancer
- Mr Rahul Mehta, ICT
- Mr Andrew Miles, EYEC
- Mr Dustine Monfries, Finance
- Miss Na Ni, Materials
- Mr Nicolas Niasse, Physics



**Katherine Gray** first came to Imperial as

an undergraduate studying Physics, followed by an MRes in Bioimaging Sciences. She joins the College staff as a research assistant in the Department of Computing, where work will involve her doctoral research on the imaging of Alzheimer’s disease. She says: “The interdisciplinary culture here is great. I work with medics and physicists who bring different viewpoints.”

- Miss Grace Norman, Human Resources
- Mr Daniel O’Donnell, Communications and Development
- Dr Dimitri Ognibene, EEE
- Dr Gowsihan Poolagasundarampillai, Materials
- Mr Bob Popp-Vinteller, Business School
- Dr Alan Purvis, Life Sciences
- Dr Raluca Radu, Physics
- Mr Alexander Richards, Physics
- Mr Tendai Rushwaya, Medicine
- Ms Kelly Savin, Bioengineering
- Dr Ulrike Schoetz, Surgery and Cancer

- Dr Arezki Sedoud, Life Sciences
- Mrs Varsha Sonigra, NHLI
- Miss Claire Stanley, Chemistry
- Mr George Swadling, Physics
- Dr Emmanuel Symianakis, Materials
- Dr Izabela Szostkiewicz, Life Sciences
- Mr Manoj Thathamparambathu, ICT
- Mr Richard Tromans, Faculty of Medicine Centre
- Miss Aikaterini Tsiampousi, Civil and Environmental Engineering
- Dr Stijn van der Veen, Medicine
- Dr Baojun Wang, Mathematics
- Ms Monique Wilkinson, Medicine
- Miss Terri Wong, Business School
- Dr Justin Yeoman, Life Sciences

## Farewell moving on

- Mr Jonathan Adams, Security Services
- Dr Lorraine Als, Medicine
- Dr Tabinda Burney, NHLI
- Miss Helen Cairns, Medicine (8 years)
- Dr Valentina Caorsi, NHLI
- Dr Rachel Cavill, Surgery and Cancer
- Miss Faye Chalmers, NHLI
- Ms Nicole Clark, Faculty of Medicine Centre (5 years)
- Mr Stephen Coe, Communications and Development

- Miss Silvana Del Vecchio Duarte, Life Sciences
- Miss Arminde Deol, Public Health
- Dr Virginie Doceul, Medicine
- Mr Hugo Doyle, Physics
- Ms Nicola Dryden, NHLI
- Mr Christopher Emmott, Physics
- Miss Shreena Ghelani, Medicine
- Dr Fatima Govani, NHLI
- Mr Amir Horowitz, Life Sciences
- Mr Henry Howe, Sport and Leisure
- Mr Alexander Jader, Business School
- Dr David Jennings, Physics
- Mr Matthew Laffan, Aeronautics
- Dr Adrien Le Pogam, Surgery and Cancer
- Professor Peter Lee, Materials (16 years)
- Dr Berit Legler, ESE
- Dr Eli Leinov, ESE
- Dr Ching Li, Kennedy Institute (7 years)
- Dr Aliko Mavromoustaki, Chemical Engineering and Chemical Technology
- Mr Grant Nicholson, NHLI (9 years)
- Dr Kerry Papps, Business School
- Dr Rosalind Parkes Ratanshi, Medicine
- Mr Manuel Pinuela Rangel, EEE
- Dr Ana Plata Garcia, NHLI
- Dr Anil Ramlackhansingh, Medicine
- Dr Benoit Raymond, Life Sciences
- Ms Bonnie Razzaghi, Bioengineering
- Ms Joscelyne Reekie, Finance

- Miss Erin Rice, Catering Services
- Mr Alistair Roberts, ICT (8 years)
- Dr Irene Sanjuan Nandin, Life Sciences
- Mr Luke Squire-Smith, Accommodation
- Mr Andrew Tan, NHLI (11 years)
- Dr Edmund Tarleton, Mechanical Engineering
- Miss Lauriane Thorer, EEE
- Dr Eszter Vamos, Public Health
- Dr Shiwen Wang, Mechanical Engineering
- Dr Dong Zhang, Computing

## retirements

- Ms Marilou Balkin, NHLI (16 years)
- Mrs Ann Wilder, Clinical Sciences (7 years)

This data is supplied by HR and covers the period 23 May–12 June. This data was correct at the time of going to press.

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

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

moving in. moving on.



7 JULY ▶ PUBLIC LECTURE  
**Memristors: past, present and future**

The theory behind memristors, first conceived in 1971, used mathematics to deduce their existence as the fourth missing fundamental circuit element after resistors, capacitors and inductors. It was

proposed that a memristor would 'remember' charges in the current passing through it, retaining its resistance. In 2008, a team at HP Labs announced the development of a switching memristor based on a thin film of titanium dioxide. In this lecture, Professor Leon Chua from the University of California, Berkeley, the electrical engineer who developed memristor theory, explains its background and its future applications.



7 JULY ▶ CONFERENCE  
**The electromechanics of heart muscle: conduction and arrhythmogenesis**

The British Heart Foundation Centre of Research Excellence and ElectroCardioMaths

multidisciplinary programme hosts a one-day symposium on heart modelling. Professor Natalia Trayanova from John Hopkins University presents the first keynote talk on MRI-based modelling of cardiac electrophysiology and electromechanics. Professor Igor Efimov, Washington University, presents the second keynote talk on molecular and functional remodelling of the failing human heart.

4 JULY ▶ SEMINAR

**MRC Developmental Clinical Studies visit**

*Dr Tom Foulkes, Medical Research Council*

4 JULY ▶ SEMINAR

**Stress awareness day at Hammersmith Campus**

*Workshops for staff*

5 JULY ▶ PUBLIC LECTURE

**Science Question Time**

*Panel includes Ehsan Masood, editor of Research Fortnight*

10 JULY ▶ PUBLIC LECTURE

**OPAL fun day**

*Family day at Silwood Park Campus*

12 JULY ▶ PUBLIC LECTURE

**Water - the resource and its sustainable use ahead**

*Dr Paul Leinster, Chief Executive, Environment Agency*

13 JULY ▶ SEMINAR

**NW Thames Foundation School Academic Symposium**

*Professor Sir John Savill, Chief Executive, Medical Research Council*

13 JULY ▶ CONFERENCE

**Centre for Integrative Systems Biology and Bioinformatics Open Day**

*Speakers from Cambridge University, UCL and Microsoft*

15 JULY ▶ CONFERENCE

**GSLSM Research Students' Symposium**

*Keynote speaker Professor David Edwards (Clinical Sciences)*

16-17 JULY ▶ MUSIC

**Silfest 2011**

*Silwood Park Campus music festival*

22 JULY ▶ CONFERENCE

**GSEPS Research Students' Symposium**

*Keynote by comedian Matt Parker*

take note

## Disability Champions

Support for staff with disabilities is now available from the College's newly appointed Disability Champions. The Champions can provide confidential support and advice on ensuring that your working environment provides for your needs.

*For a confidential referral to one of the Disability Champions, contact the Equalities Unit: [www.imperial.ac.uk/hr/contactus/equality](http://www.imperial.ac.uk/hr/contactus/equality)*

MEET THE READER



**Sima Siziba, Fitness Instructor at Ethos gym**

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

I'm reading my copy of *Reporter* in the studio after my fitness classes. I teach body sculpt, which is a combination of high and low-impact exercises using free weights, step and floor mats. I get a pretty good turnout, with more than 25 people showing up most weeks. It's a great class if you want to work hard and achieve results!

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

I'd run a feature on the energy and environment research that goes on here on campus. It's exciting to think that I work at a College that is looking into these kinds of sustainability issues. I try and do my bit by switching off the studio lights and fans after class.

**Who would be your cover star?**

My cover stars would be my high achieving students – they show so much effort and determination – hats off to them!

*Want to be the next reader featured in Reporter? Send in a picture of yourself with a copy of Reporter in your location of choice to: [reporter@imperial.ac.uk](mailto:reporter@imperial.ac.uk)*

PHOTO EXPO

On Saturday 18 June, party-goers at the 2011 Summer Ball on South Kensington Campus saw acts including Laura Marling and Ian Brown, who performed on outdoor stages on the Queen's Lawn and in Prince's Gardens.



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)

