Imperial College London

reporter

Issue 283 ▸ 31 March 2015

Sharing stories of Imperial's community

Inventor's Corner

Launching the new
Dyson School of Design Engineering

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EDITOR'S CORNER

Revolution in the making

Does modern technology make us all happier? Certainly well-designed products and services can make our lives easier and more productive. Personally, I'd struggle without smartphone maps, my ultrasonic toothbrush and contactless payment system. Equally, bad design will have me tearing my hair out.

With the availability of 3D printers and programmable electronics like the Raspberry Pi, some people have started designing and making things tailored to their own needs. Whether we'll all be making everything we need in the future is a moot point; but it does allow more people to experiment. The new Dyson School of Design Engineering taps into this 'maker movement' as its Head Peter Childs told me when I met him in the existing 'ideas lab'(centre pages). There, two mechanical engineering students were 3D printing an umbrella handle prototype, part of a new business model to provide brollies at stations. The new School will provide more of these opportunities to a new generation of savvy makers. Technology bliss is just around the corner.

ANDREW CZYZEWSKI, EDITOR

Reporter *is published every three weeks during term time in print and online. Contact:* ✉ reporter@imperial.ac.uk

Imperial launches data science partnership with ROIS

Imperial's Data Science Institute is to collaborate with one of Japan's leading research institutions.

The Research Organization of Information and Systems (ROIS), based in Tokyo, signed a Memorandum of Understanding (MoU) with Imperial to enhance cooperation in education and research related to data science.

Professor Yike Guo, Director of the Data Science Institute, recently visited ROIS in Japan to sign the MoU and hold a joint workshop on data science and its application in fields such as bioinformatics and climate change.

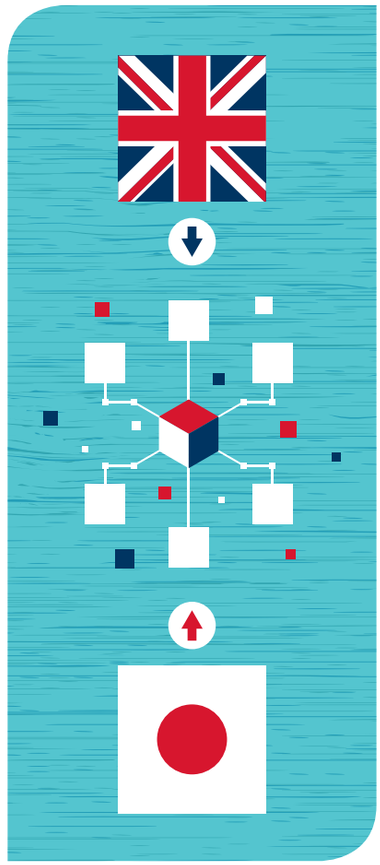
He was joined in Tokyo by Imperial colleagues Professor Martin Siegert, co-director of the Grantham Institute, and Dr Sarah Butcher, head of the Bioinformatics Support Service.

Speaking at the event, Professor Guo said: "Big data offers enormous potential across a wide range of academic disciplines. Data is the lifeblood of the twenty first century.

"Medical innovation, disease prevention, climate change research, the analysis of financial markets and consumer behaviour, and the development of cities capable of accommodating population growth, all require us to gain insights from large, complex data sets. These bring shared challenges and opportunities to London and Tokyo alike.

"Imperial and ROIS shall work to harness the data science revolution in these fields and more, helping to solve some of the greatest challenges of our time."

—ANDREW SCHEUBER, COMMUNICATIONS AND PUBLIC AFFAIRS



Boost for aspiring female business leaders

Imperial College Business School has announced a new scholarship scheme as part of a drive to encourage more women into postgraduate management education and ultimately executive leadership roles in business.

The scholarships, worth £20,000 each, will be awarded to two exceptional female candidates who want to undertake Imperial's Executive MBA. The scheme has been created in partnership with the 30% Club, whose goal is to see women comprising 30% of FTSE-100 Board members by the end of 2015.

Diane Morgan, Associate Dean of Programmes at the Business School, said: "There is an under-representation of women pursuing post-graduate management education and this has a knock-on effect on the number of women who hold senior director roles within corporations. I'm very excited that we are launching these scholarships. As well as helping two exceptional women to pursue their business education goals, it will also have a wider impact on women in the world of business."

Brenda Trenowden, who chairs the 30% Club Business Schools Sub-Committee, said: "Women and men both perceive their greatest barrier to graduate management education to be financial resources. However, as the data show, women have less work experience, lower household income, greater undergraduate debt, and are less likely to rely on personal savings. As such, the financial barriers for women are more onerous than those for men. We are very grateful to Imperial College Business School for the generous support they are giving this initiative."

The scholarships will be awarded to women who can demonstrate both depth and breadth of work experience as well as academic excellence and high potential for senior leadership roles.

—PETER ZARKO-FLYNN, COMMUNICATIONS AND PUBLIC AFFAIRS

> "We, as a school, are committed to seeing more women in business."
>
> **– Diane Morgan, Associate Dean of Programmes at the Business School**

Alumnus Sir Philip Dilley appointed Chair

Leading engineer and businessman Sir Philip Dilley, former Executive Chairman of Arup Group, has been appointed Chair of Imperial's governing Council.

Sir Philip succeeds Baroness Manningham-Buller, who has been Chair since July 2011 and who will become Chair of the Wellcome Trust in autumn 2015. Sir Philip is the 12th Chair of Imperial's governing and executive body and the first alumnus of Imperial to hold the position.

Sir Philip graduated from Imperial with a First in Civil Engineering in 1976, and spent his engineering career within Arup Group, rising to become its Executive Chairman from 2009 to 2014. Sir Philip has already served on Council since 2011, and is a member of the Imperial West Syndicate and the Nominations and Remuneration Committees.

"It is a great honour to be asked to chair Imperial's Council and I am delighted that I will be able to serve the College as its Chair at such an exciting time in its development," he said.

"We owe Eliza Manningham-Buller a huge thank you for her service in leading the Council with such wisdom, clarity of thought, and with such strong advocacy for Imperial's mission, relevance and impact in the world today."

Writing to College staff to announce the appointment, Clerk to the Council and College Secretary John Neilson described how Baroness Manningham-Buller had made exceptional contributions to Imperial in her six years on Council and four years as its Chair.

Among a long list of achievements, he drew attention to the introduction of a new College leadership model with a President and Provost, strategic developments including plans for Imperial West and the opening of the Imperial College Translational and Experimental Medicine building at the Hammersmith Campus.

"I think the College has made an excellent choice and that it will continue to thrive and develop under Sir Philip's chairmanship."

Baroness Manningham-Buller said: "I am sad to be leaving Imperial as it is a fascinating place, bursting with outstanding people and exciting ideas. It has been most rewarding to be involved with such a great university, and I feel privileged to have chaired its Council and Court since 2011. I am delighted that Philip is my successor. I think the College has made an excellent choice and that it will continue to thrive and develop under his chairmanship. I shall always value the friendships I have made in the College."

TOM MILLER, COMMUNICATIONS AND PUBLIC AFFAIRS

➜ About the Council

The Council is the governing and executive body of the College. Its terms of reference include responsibility for the finance, property, investments and general business of the College, and for setting its general strategic direction.

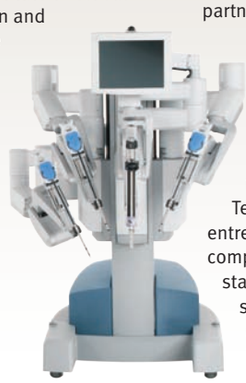
The Council currently has 23 members. The majority of members are lay members including the Chair and Deputy Chair. Also included in its membership are representatives of the staff of the College and of the student body.

None of the lay members receive any payment, apart from the reimbursement of expenses, for the work they do for the College. The Council normally meets at least five times during the academic year.

in brief

New collaboration to advance biomedical robotics

The Chinese University of Hong Kong will collaborate with Imperial's Institute of Global Health Innovation in education and research related to healthcare innovation and biomedical robotics. At an event in Hong Kong on 21 March, the two institutions set out plans to work together in fields including: Global health and the application of data analytics and methodologies to support the improvement of healthcare systems; Joint educational programmes in health policy; Innovation in engineering and robotics.

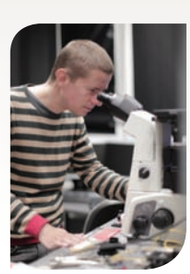


Launch of Co.Create

Imperial Innovations, the College's IP commercialisation partner, has announced the launch of Co.Create, a new business unit dedicated to supporting the creation, launch and incubation of new start-up companies from Imperial. The Co.Create team is a part of Imperial Innovations' Technology Transfer Office and provides the entrepreneurial community at Imperial with a comprehensive and flexible set of services that help staff create and run new businesses based on science and technology. Co.Create is open to staff, students and alumni. Find out more at: **imperialinnovations.co.uk/cocreate**

Research into plasmonics receives £4.8 million boost

Researchers will explore how to unlock the potential of a technology known as plasmonics with a new £4.8 million EPSRC grant, announced this week. Surface plasmons are waves of electrons that are generated under particular conditions by directing light onto a nanostructured metal surface and have applications in chemistry, catalysis, bioimaging, and optoelectronics. Professor Stefan Maier (Physics) is Principal Investigator for Imperial on this project, which is run jointly with King's College.



media mentions

Mutating bird flu may pose pandemic threat

REUTERS ▸ 11.03.2015

A wave of H7N9 bird flu in China that has spread to people may have the potential to emerge as a pandemic strain in humans, scientists have said. The H7N9 virus, one of several strains of bird flu known to be able to infect humans, has persisted, diversified and spread in chickens across China. "What we don't know is the significance of all these mutations that are accumulating as the virus persists and spreads," Wendy Barclay (Medicine), an expert in flu virology, told Reuters. "This is especially relevant for human health – does any of this change the pandemic potential of the virus?"

Public research spending 'falls below 0.5% of GDP'

TIMES HIGHER EDUCATION ▸ 13.03.2015

Scientists are being urged to lobby MPs and parliamentary candidates to back an increase in public investment in research. The 'Tell Them Science is Vital campaign,' launched on 13 March follows analysis by the organisation revealing that the UK's level of public investment in research slipped to 0.48 per cent of GDP by 2012: the lowest figure for any G8 country in the past 20 years. Professor Stephen Curry (Life Sciences) vice-chair of Science is Vital, said in an interview with *THE*: "The UK research base has a world-class reputation but it has been allowed to decline through the years of austerity. We urgently need to reinvest to maintain the quality of the research and training done in the UK."

Real and online worlds connect

FINANCIAL TIMES ▸ 09.03.2015

Courses combining online and face-to-face tuition, known as blended learning, are seen by many potential business education students as the ideal marriage of modern teaching methods, according to a *Financial Times* special report. David Lefevre is programme director of Imperial College Business School's blended learning course, the Global MBA. This programme uses the web to enable people to learn wherever they are, but also encourages them to meet in person periodically at Imperial's South Kensington campus. "The networking part of it is absolutely fundamental," Dr Lefevre says. "Once you have built these bonds, students work together much better."

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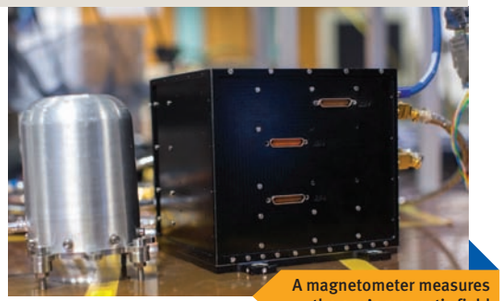


A magnetometer measures the sun's magnetic field

Esa's Solar Orbiter mission passes crucial milestone

THE GUARDIAN ▸ 14.03.2015

It is hard not to be impressed with the spacecraft standing in the clean room at Airbus Defence and Space, Stevenage, the *Guardian* writes. It is a test model for a spacecraft that will travel closer to the Sun than any mission yet flown. This will cause the temperature of its sunward-facing side to soar to 600°C. The heat must be radiated away or it will destroy the spacecraft. "Thermal management is always difficult on a spacecraft, but on this mission it's epic," says Professor Tim Horbury (Physics), who is the principal investigator on the spacecraft's magnetometer instrument."

awards and honours

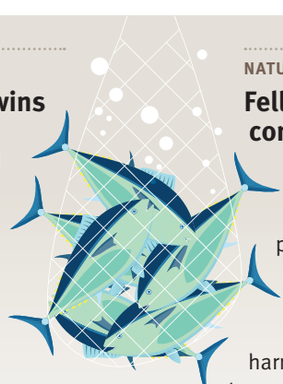
BUSINESS

Imperial defends title in global business comp

A team of students from Imperial College Business School have won the *Financial Times* FTMBA Quiz 2015 for the second year running. The quiz is open to business schools worldwide and tests teams' knowledge of business topics. Imperial won after going head-to-head with the University of St Gallen in the final buzzer round. The team comprised students Will Thorne, Adi Khera, Jonathan Lai and Stephen Zhang, and alumnus Ram Ananth.

MEDICINE

Jenny Higham wins NTU's highest teaching award



Professor Jenny Higham has received Nanyang Technological University's (NTU) most prestigious award for teaching excellence. Professor Higham, Imperial's Vice Dean (Educational and Institutional Affairs) in the Faculty of Medicine, received the Nanyang Education Gold Award for her instrumental work in the founding of the Lee Kong Chian School of Medicine (LKCMedicine), a joint medical school established by Imperial and NTU.

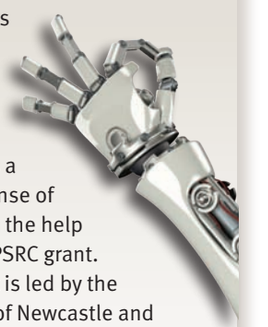
NATURAL SCIENCES

Fellowship for conservationist

An Imperial scientist has received a prestigious fellowship to reduce the number of marine species being harmed accidentally by commercial fishing. EJ Milner-Gulland (Life Sciences), Professor of Conservation Science, will undertake a three-year $150,000 project designed to reduce bycatch: the incidental taking of fish and other marine species by commercial fisheries. She is one of five scientists from around the world to be awarded a 2015 Pew Marine Fellowship.

ENGINEERING

Prosthetic hand project gets £1.4 million

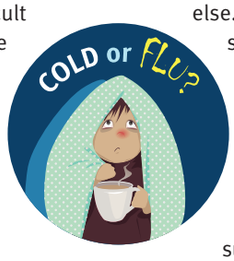


Researchers are to develop a prosthetic hand that gives users a realistic sense of touch, with the help of a new EPSRC grant. The project is led by the University of Newcastle and involves Imperial. A team headed by Dr Tim Constandinou (Electrical and Electronic Engineering) in the Centre for Bio-Inspired Technology will develop the electronic neural interface that will directly communicate with the nervous system.

Flu-less

Adults over the age of 30 only catch flu about twice a decade, a new study suggests.

Flu-like illness can be caused by many pathogens, making it difficult to assess how often people are infected by influenza.



Researchers analysed blood samples from volunteers in Southern China, looking at antibody levels against nine different influenza strains that circulated from 1968 to 2009.

They found that while children get flu on average every other year, flu infections become less frequent as people progress through childhood and early adulthood. From the age of 30 onwards, flu infections tend to occur at a steady rate of about two per decade.

Dr Adam Kucharski, who worked on the study at Imperial before moving to the London School of Hygiene & Tropical Medicine, said: "There's a lot of debate in the field as to how often people get flu, as opposed to flu-like illness caused by something else. These symptoms could sometimes be caused by common cold viruses, such as rhinovirus or coronavirus. Also, some people might not realise they had flu, but the infection will show up when a blood sample is subsequently tested."

The model supported evidence from other studies that the strains of influenza virus we encounter earlier in life evoke stronger immune responses than those we meet later. The findings will also help make predictions about how the virus will change in the future.

—SAM WONG, COMMUNICATIONS AND PUBLIC AFFAIRS

Melting from below

Researchers have discovered a 5 km-wide valley running underneath East Antarctica's most rapidly-changing glacier that is delivering warm water to the base of the ice and causing significant melting.

The intrusion of warm ocean water is accelerating melting and thinning of Totten Glacier, which at 65 kilometres long and 30 kilometres wide contains enough ice to raise global sea levels by 3.5 metres. The glacier is one of the major outlets for the East Antarctic Ice Sheet, which is the largest mass of ice on Earth and covers 98 percent of the continent.

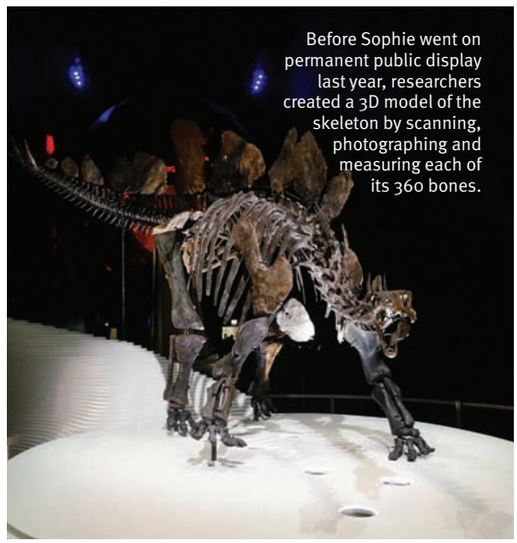
Climate change is raising the temperature of the oceans, and sea levels are predicted to rise about one metre per century. Totten Glacier could represent a major component of this change.

3.5m sea level rise predicted if the glacier melts.

"It's only one glacier, but it's changing now and it is significant for sea levels globally," said study co-author Professor Martin Siegert, Co-Director of the Grantham Institute at Imperial. "The 3.5 metre rise may take several centuries to complete, but now the process has started it is likely irreversible. This is another example of how human-induced climate change could be triggering major changes with knock-on impacts that will be felt globally."

The East Antarctic Ice Sheet was previously thought to be surrounded by colder water and so relatively stable. However, satellite data have shown that the Totten Glacier has also been thinning considerably. To investigate why, the team of researchers surveyed the area. Using radar and other geophysical techniques, they obtained a map of the topographical landscape underlying the glacier where it met the sea. Their results revealed a 5 km-wide valley running underneath the glacier capable of letting warm ocean water reach the ice base.

—HAYLEY DUNNING, COMMUNICATIONS AND PUBLIC AFFAIRS



Before Sophie went on permanent public display last year, researchers created a 3D model of the skeleton by scanning, photographing and measuring each of its 360 bones.

Weighing in at a staggering 1.6 tonnes

Scientists have discovered that a 150 million year old Stegosaurus stenops specimen would have been similar in weight to a small rhino when it died.

Calculating body mass in animals that have been dead for many millions of years is difficult. One method relies on researchers taking measurements of limb bones and extrapolating body mass from a large dataset of living animals, while another produces a 3D model of the animal and applies densities to body segments to calculate mass. However, both often have varying results.

The researchers from Imperial and the Natural History Museum (NHM) are the first to combine both methods to get an accurate measurement of body mass. They used this approach on a Stegosaurus skeleton nicknamed Sophie, which was found in Wyoming in the USA in 2003 and is now part of the NHM's collection. They have calculated that Sophie would have weighed around 1,600 kg, similar in weight to a small rhino.

Dr Susannah Maidment (Earth Science and Engineering) said: "Although the Stegosaurus is something of an iconic dinosaur, scientists know very little about its biology because its fossils are surprisingly rare. We don't actually know whether Sophie was female or male, despite its nickname. Although there is no evidence for why it died, it seems that the carcass fell into a shallow pond, where it was quickly buried, preventing other animals from scavenging it, and explaining why it is so well preserved."

In addition to the findings in this study, the data will underpin a series of future scientific studies, which will uncover more about the unusual lives of Stegosaurus dinosaurs.

—COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS

BLUEPRINT FOR SUCCESS

Sir James Dyson experiments with 'Gravity', a system for sketching digital designs in 3D as if floating in the air, demonstrated by Imperial alumna Daniela Paredes Fuentes who helped develop it.

A new generation of much-needed graduate engineers and technology leaders will be educated at the Dyson School of Design Engineering.

The Dyson School of Design Engineering was launched on 23 March at Imperial by George Osborne, the Chancellor of the Exchequer, and inventor and industrial designer Sir James Dyson. The School has been established thanks to a £12 million donation from the James Dyson Foundation.

The School, the first new engineering department to be established at Imperial in two decades, will be housed in the former Post Office building on Exhibition Road that the College has recently purchased from the Science Museum.

President Alice Gast said: "Imperial and Dyson passionately share a vision for educating engineers to elicit innovative thinking and problem solving. The James Dyson Foundation's generous donation, along with Dyson's industrial expertise, gives us the opportunity to create a world-leading School for a new kind of engineer to design the future."

Professor Jeff Magee, Dean of the Faculty of Engineering, added: "This is a milestone not only for the Faculty of Engineering, but for the College as a whole and wouldn't have been possible without the efforts of many people here. All the Engineering departments have worked with Professor Peter Childs, the first Head, to help us shape the new School."

NEW DEGREE
MEng
4-year

STARTS
2015
October

UNDERGRAD
40
2015 intake

100
2017 intake

FULL STRENGTH
400
UG + PG taught + PG research when studio complete

The School will begin teaching a new four year undergraduate MEng in Design Engineering in October 2015. The programme will teach a range of engineering fundamentals, design thinking, creative problem solving, and management and communication skills. The curriculum, developed with Dyson engineers alongside other stakeholders, contains industrial placements, development of industry project briefs, and an entrepreneurship module.

With recruitment underway of the first 40 students on the MEng in Design Engineering, the course has already attracted six applications for every place available, with 40 per cent coming from women, comparing to 13 per cent as the usual number of female applicants to engineering courses. The School's first cohort will use Imperial's existing facilities from October 2015. The annual intake will increase to 100 by October 2017, when teaching moves to the new building. When completed, the studio space and equipment will enable 400 students to design, prototype and test new product ideas.

"The Dyson School is set to become a hotbed of ideas and creativity, which will lead to engineered products that have the potential to revolutionise the way we go about our lives," Professor Magee said, adding: "The students will become the next generation of problem-solving engineers, ideally placed to lead in fields that are of ever greater importance to the UK and global economies."

In addition to undergraduate provision the School will also offer the existing Innovation Design Engineering (IDE) and Global Innovation Design (GID) double Master's courses, run jointly by Imperial and the Royal College of Art.

Research in the Dyson School of Design Engineering is focused in three areas: engineering product development; industrial design and human factors; autonomous systems and manufacture, with academic leaders in these fields joining the School in early summer 2014.

"It is fantastic to hear about this partnership ... the new Dyson School of Design Engineering that will play a key role in training the next generation of design engineers." –Chancellor George Osborne

LIFELINE

Dyson Scholar Robert Learney (Bioengineering) is developing technology for monitoring and controlling kidney function in real time. In the future, this could be used to sustain organs outside the body for longer, which could enable more life-saving transplants to take place.

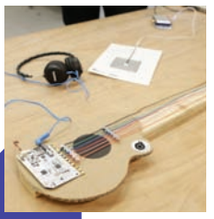
It's a complex undertaking to re-design a whole system, but so far Robert has developed a prototype vascular pump which prevents red blood cells from being damaged; a 'smartpipe' containing sensors for pressure, temperature, flow and oxygen levels; and a chemical sensor that continuously monitors the function of the kidneys outside the body.

Robert, who used to be a doctor before switching to engineering, said: "We still need to rush the majority of organs from donor to recipient as quickly as possible. It seemed unbelievable to me that in an age where we have incubators to take care of tiny premature babies, and heart-lung machines for complicated cardiac surgery that we weren't trying to apply these ideas to keeping single organs alive. I believe that 'design thinking' — seeing a problem as a whole, not only the technical and engineering aspects but also social and economic aspects — is going to make a difference to the medical world in particular."

What is design engineering?

Design engineering is a broad discipline that has long been practised across various departments in the Faculty of Engineering and specifically through the Innovation Design Engineering (IDE) joint Master's programme — a long-standing collaboration between the Royal College of Art and Imperial. There are nearly 600 alumni of the course which has been running for over 35 years, and their achievements include fostering nearly 40 innovative start-up companies. According to Professor Peter Childs, who was course Director of the joint Master's programme and is now Head of the new Dyson School of Design Engineering, the programme has helped to shape a "definition of design engineering fit for the 21st Century."

He added:
"We think of design engineering as being a fusion of creative design thinking and engineering rigour within a culture of innovation and enterprise. It can encompass product design — which many people immediately associate with this discipline — but also the design of services, systems and user experiences. When our students are designing we encourage them to consider aesthetics, how something looks and feels, its technical function, as well as how individuals and society as a whole might engage with it psychologically and emotionally."



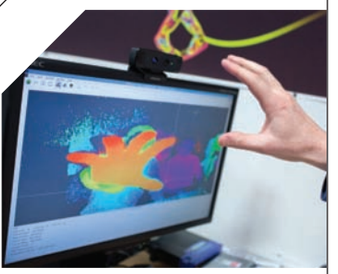
IMPROMPTU PERFORMANCE

IDE alumnus Matt Johnson and colleagues have established start-up Bare Conductive, developing technology to connect everyday surfaces, objects and spaces with the digital world. They use electrically conductive ink which can be painted onto anything from concrete walls to clothing to create a flexible electronic circuit – and a 'touch board', which enables these circuits to connect with sensors.

Matt demonstrated the ink to Sir James Dyson and President Gast by painting it on to cardboard and connecting it to the touch board to form an electric guitar.

"We want to create engineers who are bold and commercially astute. They will use their skills, nurtured in the Dyson School, to develop future technology that will catalyse Britain's economic growth.

— SIR JAMES DYSON



LEGACY OF INNOVATION

Sir James Dyson is a long standing supporter of the Innovation Design Engineering Master's programme run jointly by Imperial and the Royal College of Art. In 2014 Dyson Ltd announced an investment of £5m in a new robotics lab at Imperial. The research focuses on vision systems, creating a generation of robots that understand and interact with the world around them. The James Dyson Foundation also offers a bursary to one Imperial PhD student annually whose research is in the fields of engineering and product design.

inside* story

mini profile

Professor Charlotte Williams

Charlotte Williams is Professor of Catalysis and Polymer Chemistry at Imperial and Chief Scientific Officer for Econic, an Imperial Innovations spin-out company focused on integrating CO2 into the manufacturing process of polymers.

How did you go from discovery to commercialisation?
Our first major catalyst discovery was in 2008. We filed a patent and continued to develop the science while exploring options for the technology and eventually formed Econic in 2011. I think each case is different when making the decision to commercialise. For me, part of it was wanting to remain involved in the science; I wanted to be part of its progression.

What has stuck with you in forming Econic?
I enjoy being part of a varied team and getting to understand the business opportunities. I've been able to work with different types of scientists all of whom have had an important role in helping us translate the technology. It has been a big learning curve for me which I have very much enjoyed and I believe will feed back to my academic work.

Are your roles as an academic and an entrepreneur complementary?
I find there's quite a bit of overlap in the skill-sets required for both roles: in both academic science and enterprise you need to be adaptable, able to listen, and to work effectively in a team. It's also important to focus on and realise your vision and not to become distracted by other interests.

Econic has a number of women in key managerial and technical roles as well as on the board of directors. Is that deliberate?
We have been fortunate in having the participation of very talented women at Econic. But it isn't the result of a deliberate attempt to find women; they were simply the best fit in terms of what we were looking for and what was best for the team. However, it's important that Econic's team is diverse both in terms of gender, ethnicity and experience.

—DAVID BARRETO IAN, IMPERIAL INNOVATIONS

Early career researchers strike gold at Westminster

The College put in its finest ever performance at the highly competitive 'SET for Britain' poster competition final at Portcullis House, Westminster.

SET for BRITAIN
An annual poster competition in which awards are made on the basis of the very best research work and results by an early-stage or early-career researcher together with their ability to communicate their work to a lay audience.

SET for Britain aims to help politicians understand more about the UK's thriving science and engineering base and rewards some of the strongest scientific and engineering research in the UK.

The prestigious competition attracted entries from over 200 early career researchers and 29 were shortlisted to present their work in front of MPs, peers and scientists.

Imperial researchers claimed gold in four out of five categories – with the physics category champion Robert Woodward also securing the top overall award for his excellent presentation explaining his research work on the development of ultrafast laser technologies and the remarkable optical properties of nanomaterials.

Robert said: "It was a fantastic experience to share my work at Parliament and to see so much fascinating innovation from young UK researchers. I was delighted and honoured to receive the Physics Gold Medal and Westminster Medal for my laser research, especially as this year marks the International Year of Light – a worldwide celebration of the impact of light science and applications, of which laser technologies play a major role."

"This invaluable recognition to my research and communication abilities will definitely boost my enthusiasm to progress in my career as a researcher in engineering and material science."

The other Imperial gold medal winners who each received a prize of £3000 were Dr Nasrin Al Nasiri (Materials) in the Engineering category; Dr Peter Buchak (Mathematics) in the Mathematics Category and Dr Yuval Elani (Chemistry) in the Chemistry category.

Dr Al Nasisri said: "When they announced my name as the gold medal winner in engineering I was speechless, overwhelmed and very proud of what I have achieved. This invaluable recognition of my research and communication abilities and will definitely boost my enthusiasm to progress in my career as a researcher in engineering and material science."

The event was run by the Parliamentary and Scientific Committee in collaboration with the Council for Mathematical Sciences, the Institute of Physics, The Physiological Society, the Royal Academy of Engineering, the Royal Society of Chemistry, the Society of Biology and the Society of Chemical Industry.

Andrew Miller MP, who chairs the Parliamentary and Scientific Committee, said: "This annual competition is an important date in the parliamentary calendar because it gives MPs an opportunity to speak to a wide range of the country's best young researchers. These early career scientists are the architects of our future and SET for Britain is politicians' best opportunity to meet them and understand their work."

L-R: Yuval Elani, Robert Woodward, Nasrin Al Nasiri, Peter Buchak

"Early career scientists are the architects of our future."
– Andrew Miller MP, chair of the Parliamentary and Scientific Committee

Eco-chic

A sustainable fashion initiative developed by two Imperial graduates has won the Mayor of London's Low Carbon Entrepreneur Prize.

Caroline Wood and Vivian Tang, who graduated last June after studying for their undergraduate degree in the Department of Chemistry, took home the £20,000 seed-funding prize for Clotho – an online clothing exchange service which aims to reduce the amount of clothing waste in landfills by encouraging young people to swap unwanted clothes with others rather than throwing them away and buying new.

Caroline Wood said: "The idea for clotho came to us while we were on holiday in Marrakech after our graduation last summer. I brought a dress with me which I had owned for around five years, but had just never worn because I wasn't sure it suited me. As we were getting ready for dinner one evening, Vivien tried it on and instantly loved it. It looked fantastic on her so I said she could have it – much better than it sitting unworn at the back of my wardrobe!"

"We thought that there must be many other people with clothes hidden away in wardrobes like this – and so the idea for Clotho was born."

The pair were announced as the winners by the Mayor of London Boris Johnson at a ceremony at City Hall last week, after pitching their idea dragon's-den style to a panel of expert judges including award-winning solo yachtswoman Dame Ellen MacArthur, newsreader Charlene White, and Richard Reed, co-founder of Innocent Smoothies.

The Mayor's Low Carbon Entrepreneur competition, which is sponsored by Siemens, challenges students to come up with innovative ideas to cut the capital's energy use and carbon emissions.

Speaking before the final, the Mayor of London, Boris Johnson, said: "I'm sure our young entrepreneurs will go on to play an important part in fostering jobs and growth in the capital's burgeoning green economy for many years to come."

The Clotho team were one of two Imperial teams shortlisted in this years contest. Students Lucas Kruitwagen, Michael Kenfick and Simon Madsen also reached the final for their Openwatt – a device to reduce electricity being used by large appliances when there is pressure on the national grid.

> "The competition has been an amazing experience."

blog SPOT

Student blogger Nick: **What is EIE?**

For most people, my overly pompous degree title, *MEng Electronic and Information Engineering with a Year Abroad,* means nothing. After one vacant stare too many, I have decided to write this post to help clarify what EIE is! The course gives the fundamental knowledge required to understand how digital electronic devices operate and interact with one another. For example we look at computers, starting with the way certain components are organised to make up processors, then figuring out how these processors can begin to process basic commands, moving onto how we can use these basic commands to create more complicated commands which in turn can evolve into fully fledged operating systems and programs. We look at communications systems such as radios, wi-fi, mobiles, etc. As a group, EIE is petite with only 30 or so students ... but I have never heard a student say that they regret choosing EIE.

THE FINAL COUNTDOWN

⇒ IMPERIAL COLLEGE CLAIMED VICTORY AGAINST THE MEDICS AT THE ANNUAL VARSITY TOURNAMENT.

After an exciting day of competitive sport, the Imperial College and Imperial Medicals Women's 1st Rugby teams battled it out in the final Varsity showdown at Twickenham Stoop. Despite a valiant performance from the Medics, Imperial College came out top – claiming victory with a final score of 15–12.

The win was the icing on the cake for Imperial College, who were also crowned overall Varsity champions – winning the majority of the 28 matches played over the course of the tournament.

Teams competed across 11 different sports – earlier in the day Harlington played host to men and women's hockey, while the teams competed in netball, football, rugby, basketball, tennis, squash, lacrosse and badminton at Heston, and Ethos Sports Centre was the setting for waterpolo. The previous week, the Copper Box Arena at London's Olympic Park hosted the Men's Basketball, where Imperial College emerged victorious after a nail-biting game. The final event of Varsity 2015 was an ice hockey match where the Imperial Devils faced off against University College London Yetis at the Streatham Ice Rink – with the Yetis getting the better of the Devils with a final score of 4 vs 2.

GAME ON

IMPERIAL COLLEGE
15
VS
12
IMPERIAL MEDICS

> *"It was fantastic to see the exceptional levels of energy, enthusiasm, and talent that students from both sides brought to Varsity this year." — Tom Wheeler, Imperial College Union President*

NUMBER OF MATCHES PLAYED 28

3

NUMBER OF MASCOTS
VICTORIA
ALBERT
PHOENIX

11

NUMBER OF SPORTS
HOCKEY
NETBALL
FOOTBALL
BASKETBALL
TENNIS
BADMINTON
LACROSSE
SQUASH
WATERPOLO
RUGBY
ICE HOCKEY

GAME, SET, MATCH

The standout performance from BUCS (British Universities and College Sport) competitions this year came from **Mark Whitehouse,** who won men's tennis singles tournament for Imperial – a first for the College. Mark beat number 1 seed Torsten Wietoska of Durham University in the final.

> *"It was tight match, but I somehow scrapped through. I only decided to compete on the day due to a nagging injury — so I didn't have particularly high expectations. To come away with the title is great." — Mark*

Mark is an Imperial TOPSport Scholar and is in the third year of his four year MSci Mathematics degree. Neil Mosley, Head of Sport Imperial, added: "I'm delighted that our scholarships are bearing fruit and that we are diversifying the range of sports that we now excel at."

moving in. moving on.

Welcome
new starters

Ms Andrea Almeida Sanchez, Faculty of Medicine Centre

Dr Iain Barrett, Medicine

Miss Teresa Buenaventura, Medicine

Mr Paolo Capriotti, Life Sciences

Ms Zoe Cotton, Medicine

Mrs Jennifer Dixon, Surgery & Cancer

Mr Jose Faustino Fragoso Femenin Dos Santos, Computing

Dr Joel Fulton, Surgery & Cancer

Mr Luis Ganchinho De Pina, Computing

Dr Bernardo Garcia Carreras, Life Sciences (Silwood Park)

Dr Daniel Goldhill, NHLI

Dr Bridget Gollan, Medicine

Miss Charlotte Grove, Public Health

Dr James Hall, Chemical Engineering

Miss Amber Hall, Business School

Mrs Amelia Harshfield, Public Health

Dr Jingjing Jia, Chemistry

Miss Shreya Konnur, Outreach

Mr Daniel Laydon, Public Health

Mr James Lindsay, ICU

Miss Ma. Lucero, Sport and Leisure

Ms Flavia Martins Bonfim Zago, Catering Services

Ms Ryanne Matthias, Faculty of Medicine Centre

Ms Emma Mawdsley, Public Health

Dr Colin McClure, Life Sciences

Dr Emma Metters, Public Health

Mr Omar Mulki, Faculty of Medicine Centre

Dr Onesmus Mwabonje, Centre for Environmental Policy

Dr Anastasia Mylona, Medicine

Mr Daniel Nardini, Bioengineering

Dr Nhuong Nguyen, Clinical Science

Miss Charlotte Nixon, Business School

Ms Agatha Okeke, NHLI

Dr Lorenzo Picinali, Design Engineering

Mr Jonathan Picken, Registry

Miss Claudia Pisani, Public Health

Mr Liam Rasch, Medicine

Ms Sneha Rhode, Materials

Mrs Jo Rimmer, Chemistry

Mr James Romero, Communications and Public Affairs

Dr Pedro Javier Saenz Saenz Hervias, Chemical Engineering

Mr Edgar Samarasundera, Public Health

Miss Ana Sancho Medina, Medicine

Miss Marie Sandrine, Public Health

Dr Franziska Schneider, NHLI

Mrs Srilakshmi Seekolu, Public Health

Miss Meenal Selvaratnam, Accommodation

Mr Taha Shahid, Medicine

Dr Lisete Silva, Medicine

Dr Harsimrat Singh, Surgery & Cancer

Ms Maliga Sinniah, Public Health

Dr Kate Skinner, Surgery & Cancer

Mr Gary Skipsey, Estates Division

Dr Angeliki Spentzou, Medicine

Miss Tharani Thurairajah, Faculty of Medicine Centre

Dr Alejanda de Don Tomas Catala, Medicine

Dr Matthieu Toulemonde, Bioengineering

Dr Tabitha Turner-Stokes, Medicine

Miss Amy Valentine, Civil and Environmental Engineering

Ms Naomi Warren, Business School

Farewell
moving on

Mr Daniel Adams, ICT

Miss Charlotte Broyd, Public Health →

Mr Kai Chang, Surgery & Cancer

Dr Lionel Chaudet, Physics (5 years)

Mr Dan Curtis, Estates Division (9 years)

Dr Alexessander da Silva Couto Alves, Public Health (5 years)

Miss Gemma Dawkins, Education Office

Dr Thai Doan, Mathematics

Ms Shannon Ewart, Life Sciences

Dr Daniel Farrell, Grantham Institute

Dr Cecilia Flori, Physics

Mr Louis Gare, Registry

Professor Mohammad Ghatei, Medicine

Dr Gule Hanid, Public Health

← Mr Simon Harding-Roots, College Headquarters

Mrs Alison Harker-Smith, Business School

Miss Lena Heinrich, Centre for Environmental Policy

Mr Owen Hingston, Sport and Leisure

Mr Chong Ho, Public Health

Dr Eleni Iacovidou, Centre for Environmental Policy

Miss Amanda James, Registry (7 years)

Mr Bastien Jordi, Aeronautics

← Dr Maciej Kaliszczak, Surgery & Cancer (6 years)

Miss Sophie Kathirgamanathan, Medicine

Ms Anna Kubik, Bioengineering

Ms Stephanie MacNeill, NHLI (16 years)

Ms Urvi Makwana, Faculty of Medicine Centre

Mr Martin McMahon, Finance

Miss Jayshree Naik, HR

Miss Grace Norman, Registry

Dr Karen O'Leary, Medicine (13 years)

Dr Andrew Pennycott, Bioengineering

Ms Roberta Pierfederici, Grantham Institute

Mr Gilbert Raphael, Finance

Dr Heba Saleh, Faculty of Medicine Centre

Dr Rajvinder Samra, Public Health

Dr Hiroe Sato, NHLI (9 years)

Mr Joseph Shaw, Physics

Miss Amy Townsend, Careers

Mr Stelios Tzellos, Medicine

Dr Helena van Velthoven, Public Health

Dr Sean Warren, Physics

Mr James Warren, Campus Services

Mr Iain Yardley, Surgery & Cancer

This data is supplied by HR and covers staff joining the College during the period 6 March — 26 March. This data was correct at the time of going to press. For Moving On, visit the online supplement at **www.imperial.ac.uk/reporter**

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

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

events highlights

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

April 2015

14 APRIL • 18.00

Optimising urban energy systems

Cities are responsible for approximately three-quarters of the world's energy consumption and they therefore play a major role in energy issues such as economic security and climate change. Professor Nilay Shah, Director of the Centre for Process Systems Engineering, will describe the motivation for the modelling of urban energy systems, present a framework for such an endeavour and draw insights from case studies. This event is organised by the Energy Futures Lab.

16 APRIL • 18.00

Climate justice – why is it relevant in 2015?

2015 is a critical year for climate negotiations, with two international agendas being finalised. In the 2015 Grantham Institute annual lecture, President of the Mary Robinson Foundation - Climate Justice, Mary Robinson, explains how climate justice, which links human rights, development and climate change, can help us to develop policies and actions that are good for people as well as the planet. Join in on Twitter using #GranthamLecture

take note

Supporting our People

15 APRIL, FROM 11.00–15.00
QUEEN'S TOWER ROOMS,
SOUTH KENSINGTON CAMPUS

The Human Resources Division is running a showcase event to launch a raft of new services, initiatives and staff benefits, all detailed in a booklet titled *Supporting our People*. The event will provide staff with the opportunity to meet to discuss training and development opportunities, well-being initiatives, support for those with caring responsibilities and much more.

2 APRIL 18.30

Cyprus: challenges and prospects

Alexander Michaelides, Professor of Finance at Imperial College Business School, discusses the current challenges Cyprus's economy faces at this international event.

9 APRIL 12.00

Fluctuations and instabilities of epithelial tissues

A Department of Bioengineering seminar by Dr Thomas Risler of the Institut Curie in Paris.

14 APRIL 09.30

Modelling from structures to systems

A day-long symposium followed by the Jaroslav Stark memorial lecture, given by Professor Rob J de Boer, Utrecht University.

14 APRIL 18.00

Alternatives to regular finance

A best practice in innovation, entrepreneurship and design seminar looking at the alternatives to the usual finance routes for start-ups.

15 APRIL 17.30

Function follows form: seeing into the heart

The inaugural lecture of Professor Julia Gorelik (NHLI)

28 APRIL 18.30

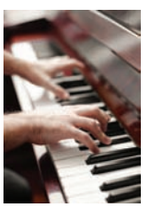
Analytics and modelling in the pharmaceutical industry

Dr Matt Weiner from MSD/Merck speaks at a talk hosted by the Data Science Institute and the Imperial College Business School.

30 APRIL 13.00

Lunchtime concert

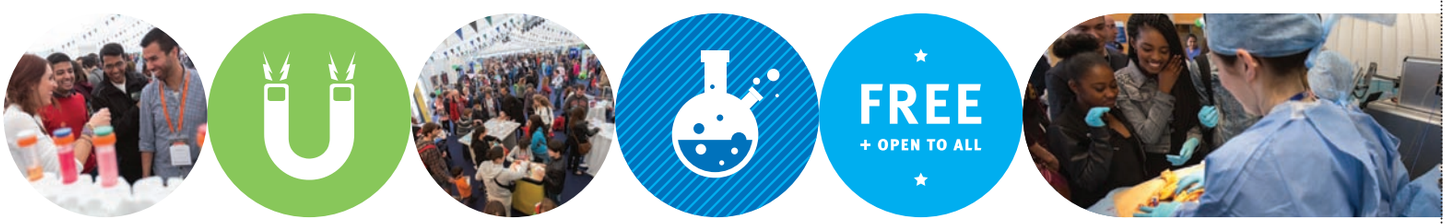
Pianist James Cheung and soprano Raphaela Papadakis perform Brahm's Zigeunerlieder and Britten's folk songs.



IMPERIAL FESTIVAL

The Imperial Festival is back for its fourth year and we're open over the entire weekend for the first time ever! Staff, students, alumni, friends and family are all invited to join us in celebrating the best science and arts on offer, through talks, tours, workshops, performances and hands-on demonstrations. Old favourites will be returning alongside new demonstrations and zones, including the brain zone and the superbugs zone.

SAT–SUN **9–10 MAY**



imperialfestival #impfest *Check out the details:* **www.imperial.ac.uk/festival**

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