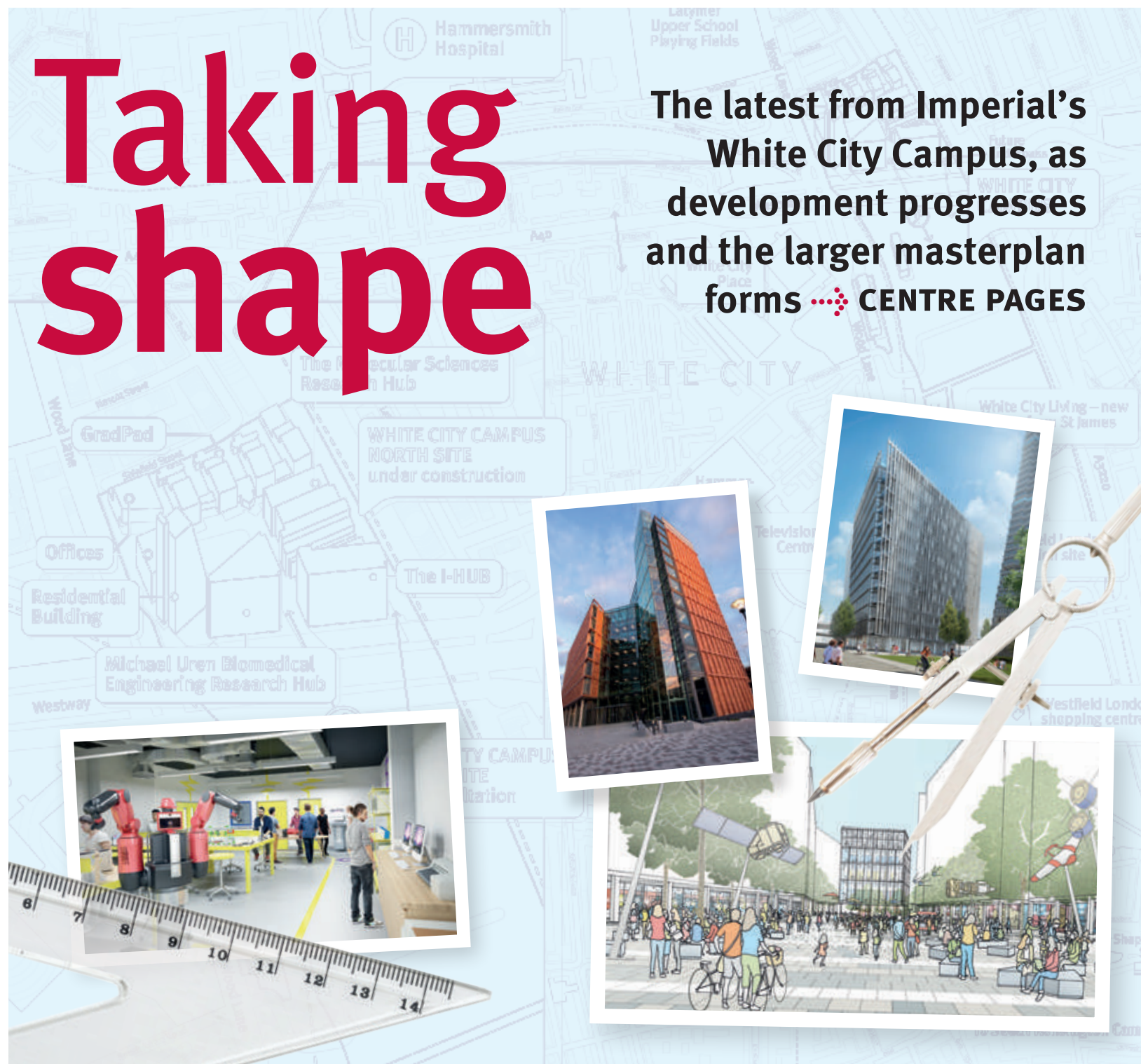


Taking shape

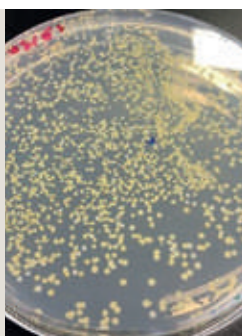
The latest from Imperial's
White City Campus, as
development progresses
and the larger masterplan
forms **◆ CENTRE PAGES**



IMPROBABLE RISE

Imperial
graduate's
startup valued
at \$1 billion

PAGE 3



COUNTER RESISTANCE

Mini drug
factories
could find new
antibiotics

PAGE 7



FAB FESTIVAL

A round-up
of all the
highlights

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EDITOR'S CORNER

Seize the moment

It's in Imperial's DNA to constantly evolve and adapt in response to big global challenges – to seize opportunities to **do things differently**. Prince Albert saw such an opportunity when he created the Great Exhibition of the Works of Industry of all Nations in 1851, and then used the proceeds to purchase land for a centre of science, music and art – noting that the disciplines had lapsed into a state of 'comparative isolation from each other', which necessarily 'retarded progress' (see bit.ly/Reporter285). Imperial's White City campus is another chance to do things differently, **integrating various disciplines** and approaches at an even more fundamental, granular level than at any point in its history (centre pages). And the need is perhaps even greater than ever, with economic uncertainty, climate change and antibiotic resistance all on the immediate horizon. Perhaps most importantly, the White City Campus masterplan should be able to **adapt to challenges and scenarios** none of us can envisage right now (page 10).

ANDREW CZYZEWSKI, EDITOR

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

Imperial part of £100 million Rosalind Franklin Institute

Scientists from Imperial will be playing a major role in a new research institute funded by the UK Government.

The Rosalind Franklin Institute (RFI) is a new investment by the government to develop a multi-disciplinary science and technology research centre. It will bring together the UK's strengths in physical sciences, engineering and life sciences to create a national centre of excellence in technology development and innovation.

The RFI is named in honour of Rosalind Franklin, the pioneering British scientist whose use of X-rays to study biological structures played a crucial role in the discovery of DNA's 'double-helix' structure, alongside the work of Nobel

laureates Francis Crick, James Watson and Maurice Wilkins.

The RFI will be managed by the Engineering and Physical Sciences Research Council with its main 'hub' based at Harwell in Oxfordshire, led by the University of Oxford.

Alongside Imperial, other academic partners include the universities of Cambridge, Edinburgh, Manchester, King's College London and University College London. It will also draw on the R&D expertise from leading pharmaceutical and life sciences companies and from global manufacturers in scientific instrumentation.

Initially, research at the facility will focus on the development of next-generation imaging methods, including ways of imaging in real-

time molecular processes and chemical reactions.

The College's lead academic will be Professor Elaine Holmes (Surgery & Cancer) and the RFI will draw on the expertise of scientists from across Imperial.

Professor Nick Jennings, Vice-Provost (Research) at Imperial, said: "Work at the RFI will lead to improved understanding of diseases, a speedier discovery of new treatments for chronic conditions, more diverse employment opportunities for the UK, and economic growth. Imperial is proud to be a partner in this effort and we look forward to helping the RFI become one of the world's great engines of scientific knowledge and advancement."

—COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS

Imperial celebrates trio of new Royal Society Fellows

Fellowship of the prestigious Royal Society has been granted to three scientists at Imperial this month.

The researchers – who work on solar energy, viruses, and ultrafast lasers – have been elected to join the ranks of the UK's most eminent scientists as part of the 2017 election of 50 new fellows.

Professors James Durrant (Chemistry), Jonathan Stoye (Medicine) and Roy Taylor (Physics), pictured left to right below, are recognised for their contributions to science and are now permitted to use the letters FRS after their name.

Roy Taylor is Professor of Ultrafast Physics and Technology, said: "Of course I am absolutely delighted, who would not be? It really is the ultimate that I could hope for in a career in science. I have been very fortunate to have worked in a department and at

a time that has allowed me the complete freedom to have carried out what I wanted to do in research, for over forty years and to have had a host of talented students and post docs in my group to have worked with."

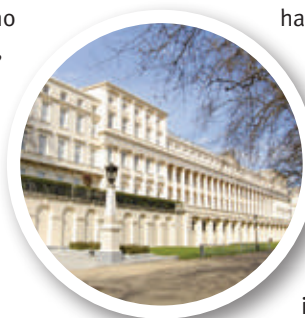
Also recognised is Professor Gerard Milburn, an eminent Australian scientist quantum physics, who is currently an academic visitor in the Department of Physics at Imperial.

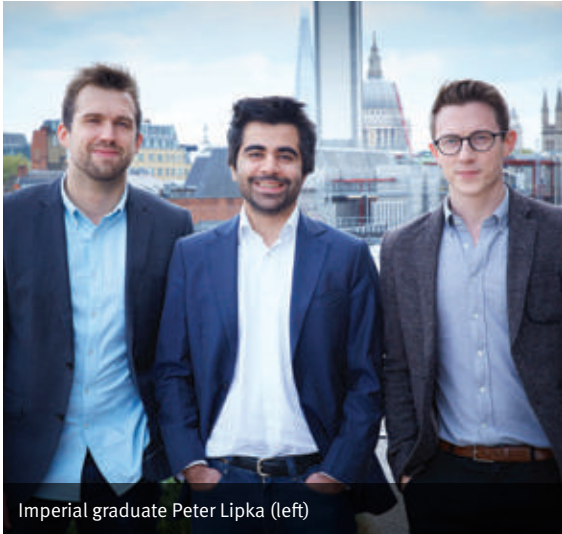
Fellowships are given to distinguished scientists by the Royal Society in recognition of "contributions to science, both in

fundamental research resulting in greater understanding, and also in leading and directing scientific and technological progress in industry and research establishments."

Imperial's Provost Professor James Stirling said: "I'd like to offer my congratulations to the members of our community elected to the Fellowship of the Royal Society this year. It is a fantastic and richly deserved honour for Imperial scientists who have pushed the boundaries of knowledge in their respective fields – across chemistry, physics and medicine. We are proud of them all."

—HAYLEY DUNNING, COMMUNICATIONS AND PUBLIC AFFAIRS





Imperial graduate Peter Lipka (left)



Imperial graduate's start-up valued at \$1 billion

Virtual reality firm **Improbable** has raised \$502 million just five years after being co-founded by Imperial computing graduate Peter Lipka.

The investment from SoftBank values the London-based technology startup at more than \$1 billion.

Improbable uses cloud-based distributed computing to enable the creation of virtual worlds for use in games and massive-scale simulations of the real world.

Improbable was co-founded by Imperial graduate Peter Lipka, 28, along with Cambridge classmates Herman Narula, 29, and Rob Whitehead, 26. Narula serves as CEO, Whitehead is CTO and Lipka is COO.

Peter Lipka graduated with a 1st class honours MEng in Computing from Imperial in 2011 before working at Goldman Sachs. He co-founded Improbable in 2012.

Professor Andrew Davison, Head of the Dyson Robotics Lab, said: "Peter was one of the brightest students I've supervised. In his individual final year project he developed an

AI software program that could automatically understand a video game and learn how to play it from only seeing pixels on the screen. He was always remarkably self-driven and I am not surprised to see him go on to such great success."

Other Imperial Computing graduates to experience startup success include Zehan Wang and Rob Bishop, who co-founded machine learning and image recognition firm Magic Pony, which sold to Twitter last year for a reported \$150 million.

Daniel Rueckert, Head of the Department of Computing, said: "The Department's success is firmly based in the research-based education we emphasise. This means that we not only focus on theoretical foundations and practical programming skills, but that we also enable students to engage in cutting edge research during their projects as well as sending them to industrial placements where they get unique insights into how computing is shaping the world around us."

—ANDREW SCHEUBER, COMMUNICATIONS AND PUBLIC AFFAIRS

Multi-million EU funding boost for Imperial researchers

The European Research Council has invested more than €15 million in a series of new grants across all four Imperial faculties.

The prestigious awards will support cutting-edge research via starting, consolidator, advanced and proof of concept grants.

They include work to develop wearable devices to tackle epilepsy, nanoscale sensors, new approaches to understanding obesity, and behavioural research into entrepreneurial clusters.

Since the Brexit vote last June, Imperial researchers have continued to apply for and win new grants from the European Union.

UK researchers remain eligible to apply for new European grants while the UK is a member of the EU. For projects that continue beyond the date when Britain leaves, the UK government will underwrite the payments of those awards.

It is currently unclear what relationship the UK will have with the ERC after Brexit, but Imperial is campaigning for continued access to EU research networks

and the College has set out its firm commitment to future European collaborations.

Professor Nick Jennings, Vice-Provost (Research), said: "This latest success from our researchers shows Imperial's excellence and international competitiveness across all faculties.

"We are determined to maintain and grow our European ties. That is why we will keep applying for and winning European grants, and forging new connections across the continent.

—ANDREW SCHEUBER, COMMUNICATIONS AND PUBLIC AFFAIRS

"We are determined to maintain and grow our European ties."

in brief

Imperial responds

Imperial has responded to the government's consultation on their Building our Industrial Strategy Green Paper. Following consultation across the College, the response highlights its investment in world-class talent and research that drives productivity and growth across the whole of the UK. The consultation response emphasises that investing in high-level skills for a broader cross-section of the population will supply our science, research and innovation pipeline for years to come. Read the full consultation here: bit.ly/strat

Surviving or thriving?

This month saw staff across the College's campuses finding out more about promoting good mental health. The theme of the national week this year was "Surviving or thriving?" Aimed at staff, a series of talks, workshops and classes held throughout the week looked at the steps staff can take to look after their mental health and build resilience to cope with the demands of life. Short courses and sessions were held on topics ranging from managing change and stress awareness, to a meditation session. Dr Tim Lomas, from the University of East London, delivered a guest lecture

on Masculinity and Mental Health. The week's events at the College also included a special Mental Health First Aider course with a focus on male mental health.

Reader's comment Kevin Hodson

"My wife and I Ann (IC Maths 1970) were impressed by the enthusiasm of the PhD students for their projects. And also the stand promoting the Children's Intelligence Agency for 8+ year old potential coders. We have two such 8 year old grandchildren and bought the packs - hoping they might plant a seed. Looking forward to next year's Festival."

ERC 10th anniversary event: On 16 June Imperial will hold a special event with ERC President Jean-Pierre Bourguignon showcasing the College's past and present ERC-funded research.

Excellence in health and safety



Imperial's Provost presented the College's 2017 Health and Safety awards to staff at a ceremony last week.

The Provost's Awards for Excellence in Health and Safety were established to honour staff at the College whose endeavours have resulted in significant improvements in health and safety over the last year.

Introducing the award presentation, Provost Professor James Stirling said: "The College strategy states that we will achieve the highest standards of safety and promote a culture where all who show a commitment to excellence are recognised, whatever their role or field. These awards are part of that effort, and reward colleagues who have worked over and above their normal role to embody excellence in health and safety practice."

The awards are presented in individual and team categories. Dr Mel Bottrill, Scientific Programmes Manager in Student Recruitment and Outreach, won the individual award for her work creating the health and safety protocols for the Wohl Reach Out Lab and for all centrally run outreach activities.

Mel said: "The Wohl Reach Out Lab is a unique space at the College. It's completely multidisciplinary and focused on school students, so from a safety perspective there is a lot to cover."

The team award this year went to Caroline Detchenique and Dr Peter Petrov from the Department of Materials for their work changing the culture around safety in the department, through combining the creation and revision of safety policies and codes of practice with a communications campaign.

Caroline Detchenique, Senior Marketing and Communications Officer in the department, added: "I'm not in a health and safety role and I'm not a researcher. Health and safety is everyone's responsibility, and that's what I'm trying to demonstrate. You don't need to be a health and safety specialist to get involved."

— ELIZABETH NIXON, COMMUNICATIONS AND PUBLIC AFFAIRS

Postgraduate Graduation Ceremonies

Imperial marked the achievements of more than 3000 new engineers, doctors, scientists and future business leaders at Postgraduate Graduation Day.

Watched by a record 9400 guests, this year's new graduates took to the stage in the Royal Albert Hall to receive their awards in the largest Graduation in Imperial's history.

Addressing the audience of new graduates and their guests, Imperial's President, Professor Alice Gast commended the achievements and potential of this year's graduating cohort.

"You have the potential to accomplish great things. I hope that you will use your intelligence and education to solve the problems of today and the problems that will arise in the future," she said.

During the ceremonies Imperial also honoured others who have made



contributions to the College, research and wider society with honorary degrees and Imperial College medals.

This year Imperial presented an honorary degree to Professor Sir Leszek Borysiewicz, Vice-Chancellor of the University of Cambridge and Chairman of Cancer Research UK. Sir Leszek is an alumnus of Imperial and former Deputy Rector.

Outstanding student achievement was celebrated with awards for Ms Clementine Chambon, a fourth year PhD student in Chemical Engineering. Clementine is the co-founder of social enterprise Oorja.

— JON NARCROSS, COMMUNICATIONS AND PUBLIC AFFAIRS

Imperial students collaborate on drug discovery for neglected diseases

Chemistry students are making compounds that may help treat diseases thanks to an open collaboration with the Drugs for Neglected Diseases initiative (DNDi).

The Open Synthesis Network (OSN) involves both undergraduate and Masters students at Imperial designing and synthesising potential anti-parasite compounds that the DNDi is interested in testing.

In its first year, the students have been working on compounds targeting the neglected disease visceral leishmaniasis – an illness that kills up to 30,000 people yearly. The disease is caused by parasites transmitted by sandflies, and is characterised by prolonged fever, enlarged spleen and liver, substantial weight loss, and progressive anemia, eventually leading to death if untreated.

All work generated by OSN will be published in the public domain in real time and remain free of intellectual property, allowing faster development.

Professor Ed Tate, Course Director for the MRes Drug Discovery and Development said: "Our students get the opportunity to



work with a global organisation doing the best science for the most neglected tropical diseases, contributing to international development and networking with their peers across three continents.

"In return, the students provide the DNDi with the opportunity to investigate aspects of potential drug molecules that they would not have the resource to look at in detail themselves. We could open up a new avenue of collaborative discovery if we find something of interest, which they could then quickly move into preclinical development.

"This is the first open, ongoing project of its type, and could provide an interesting template for future collaboration with the pharmaceutical industry."

— HAYLEY DUNNING, COMMUNICATIONS AND PUBLIC AFFAIRS

media mentions

The pros and cons of working into your 90s

CNN ▶ 04.05.2017

Society often suggests that we should slow down in later life. With retirement, we can reflect on what we have achieved, get out to see the world and spend time with family. But most research suggests that slowing down may not be the best option for your health. "People who stay active socially, physically and intellectually have less chance of developing dementia," Dr James Warner (Medicine), an old-age psychiatrist, told CNN. He added that "the biggest single risk factor for becoming depressed in the elderly is social isolation." Both can be staved off, to some extent, in some people by continuing to work, he said.

30 seconds was all it took to doom the dinosaurs

THE SUNDAY TIMES ▶ 14.05.2017

For the dinosaurs it was the unluckiest strike. The minor asteroid that destroyed them pulverised a massive lode of rock rich in

sulphur that plunged Earth into a global winter, scientists have found. Professor Joanna Morgan (Earth Science & Engineering) helped to organise a multimillion-pound drilling expedition to dig deep into the Chicxulub crater about 24 miles from the coast of Mexico. "The samples suggest more than 100bn tons of sulphates were thrown into the atmosphere, plus soot from the fires that followed," Morgan told the *Sunday Times*. "That would be enough to cool the planet for a decade and wipe out most life."

May's challenge to reward effort more than inheritance

FINANCIAL TIMES ▶ 12.05.2017

Theresa May styles her appeal to the electorate as the strong and stable champion of ordinary working British families, the *FT* writes. There is little doubt that the gap between the haves and have-nots will widen as people die and their offspring inherit, so long as house prices remain so far detached from income levels. In a sobering public lecture last week, Professor David Miles (Business School) demonstrated that there is no natural upper limit on house

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prices relative to incomes if certain conditions hold. House prices can rise forever if people prefer to bequeath housing equity rather than spend it in retirement; if people are unwilling to build more homes on existing land; if people prefer not to economise much on housing as prices rise; and if the available land for new building is constrained."

Role models: engineering is not just a man's world

THE TELEGRAPH ▶ 06.04.2017

The Telegraph meets four women who are using their engineering skills to change the world we live in: Roma Agrawal is a structural engineer working for construction company Interserve in London. "My projects have been very varied – I helped design the Shard at London Bridge, but I've also worked on bridges, skyscrapers, railway stations and even sculptures. I studied physics at Oxford University and completed a master's in structural engineering at Imperial College London."

awards and honours



BUSINESS

Healthy business

Professor Carol Propper (Business School) has received a prestigious award for her work examining reform in health economics. Alongside two US collaborators, she received the International Health Economics

Association's (iHEA) 25th Arrow Award, which recognises excellence in the field of health economics. The researchers were awarded the prize for a paper demonstrating that allowing for competition and also permitting patients to choose where they are treated substantially increased hospitals' incentives to improve quality of healthcare.

MEDICINE

Forward-thinking Fellows

Eight Imperial researchers have been elected to the Fellowship of the Academy of Medical Sciences. The Academy honours elected Fellows for their contribution to biomedical and health research and its benefits to society. Imperial Professors Jane Apperley, Phillip Bennett, Azra Ghani, Alison Holmes, Michael Seckl, Robin Shattock, Robert Wilkinson,

and Tom Williams are among 46 new Fellows elected this year. Their expertise spans women's health, immunology, public health and infectious disease, among many other fields.

COLLEGE

Sustainable success

The Royal Geographical Society has awarded one of its Royal Medals to Professor Sir Gordon Conway for his work in agricultural development. Professor Conway (Centre for Environmental Policy) is awarded the Founder's Medal. The Royal Medals have been approved by Her Majesty the Queen, and are among the highest honours of their kind in the world.



NATURAL SCIENCES

Chemistry champions

Scientists working on environmental chemistry, membranes and biomedical diagnostics have been honoured with Royal Society of Chemistry's prizes. Professor Tony Cass is awarded the Sir George Stokes Award and Dr Mark Crimmin will receive the Harrison-Meldola Memorial Prize. The Membrane Biophysics Platform team have also been recognised with the Rita & John Cornforth Award.

Artist's impression of *Vouivria damparisensis*

Gentle giants

Scientists have re-examined an overlooked museum fossil and discovered that it is the earliest member of the titanosauriform family of dinosaurs.

New analysis of the fossil indicates it is a brachiosaurid sauropod dinosaur, which lived around 160 million years ago, died at an early age, weighed around 15,000 kilograms and was over 15 metres long. It had a long neck held at around a 45 degree angle, a long tail, and four legs of equal length.

The researchers from Imperial and France named the species *Vouivria damparisensis* (see below).

Lead author Dr Philip Mannion, (Earth Science and Engineering) said: “*Vouivria* would have been a herbivore, eating all kinds of vegetation, such as ferns and conifers. This creature lived in the Late Jurassic, around 160 million years ago, at a time when Europe was a series of islands. We don’t know what this creature died from, but millions of years later it is providing important evidence to help us understand in more detail the evolution of brachiosaurid sauropods and a much bigger group of dinosaurs that they belonged to, called titanosauriforms.”

Titanosauriforms were a diverse group of sauropod dinosaurs and some of the largest creatures to have ever lived on land. They lived from at least the Late Jurassic, right to the end-

Cretaceous mass extinction, when an asteroid wiped out most life on Earth.

A lack of fossil records means that it has been difficult for scientists to understand the early evolution of titanosauriforms and how they spread out across the planet. The re-classification of *Vouivria* as an early titanosauriform will help scientists to understand the spread of these creatures during the Early Cretaceous period around 145 – 100 million years ago.

—COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS



Digging into the past

The *Vouivria* fossil was originally discovered by palaeontologists in the village of Damparis, in eastern France, in 1934. Ever since, it has been stored in the Museum National d’Histoire Naturelle, Paris. It was briefly mentioned by scientists in studies in the 1930s and 1940s, but never recognised as a distinct species. The genus name of *Vouivria* is derived from the old French word ‘vouivre’, itself from the Latin ‘vipera’, meaning ‘viper’. In French-Comte, the region in which the specimen was originally discovered, ‘la vouivre’ is a legendary winged reptile. The species name *damparisensis* refers to the village Damparis, from which the fossil was originally found.

Daddy time

Fathers who interact more with their children in their first few months of life could have a positive impact on their baby’s cognitive development.

Researchers from Imperial, King’s College London and Oxford University looked at how fathers interacted with their babies at three months of age and measured the infants’ cognitive development more than a year later.

Study lead Professor Paul Ramchandani (Medicine), said: “Even as early as three months, these father-child interactions can positively predict cognitive development almost two years later, so there’s something probably quite meaningful for later development, and that really hasn’t been shown much before.”

In the study, researchers recorded videos of parents interacting with their children, with mothers and fathers playing with their babies without toys, at three months, and then during a book-reading session at two years of age.

After analysing data for 128 fathers, and accounting for factors such as their income and age, they found a positive correlation between the degree to which dads engaged with their babies and how the children scored on the tests.

Professor Ramchandani concluded: “For those fathers who are more engaged it may be that there is a lot more positive stuff going on in their lives generally. That might be the reason for the link, but we can’t be sure of that. All we can say is that there is a signal here, and it seems to be an important one.

“The clear message for new fathers here is to get stuck in and play with your baby. Even when they’re really young playing and interacting with them can have a positive effect.”

—RYAN O’HARE, COMMUNICATIONS AND PUBLIC AFFAIRS



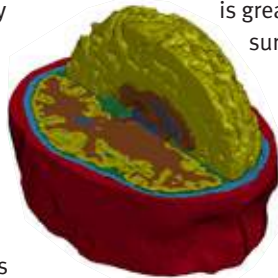
Brain strain

Scientists have modelled what happens to the brain of an American footballer when he collides forcefully with another player.

The results also bolster the link between traumatic brain injury (TBI) – sustained for example in motorcycle accidents or sports events – and the development chronic traumatic encephalopathy (CTE), a form of dementia associated with long-term build-up of proteins called tau.

The researchers modelled how brain tissue deforms during an impact between two American football players on the field. They have also modelled what happens to a person's brain when they have a ground level fall and the initial impact to the brain in a motorcycle accident.

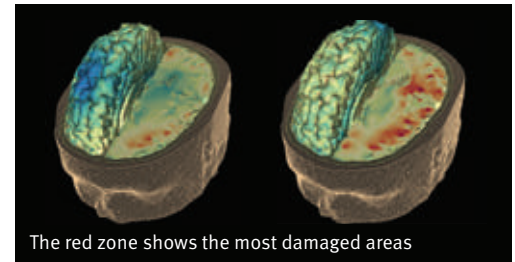
They compared their 3D high-fidelity models to MRI data on a cohort of 97 patients with TBI,



and studies on post-mortem data of the brains of footballers from America's National Football Association (NFL) with CTE, previously donated to science institutes in America for analysis. They observed tau deposition in the brains, which was then diagnosed as CTE.

The Imperial team showed in all their 3D models that the damage created from a TBI is greatest in the depths of the folds on the surface of the brain called sulci. Previous studies on CTE have shown that tau also accumulates in sulci. In addition, the team discovered that the location and severity of the blow to the head on impact can have a significant influence on the magnitude and pattern of the injury later on when CTE develops.

Study co-lead Dr Mazdak Ghajari (Dyson School of Design Engineering) said: "In TBI, the force of the blow shakes the brain, which is similar in texture to jelly. This shaking process deforms the brain tissue and can cause ruptured

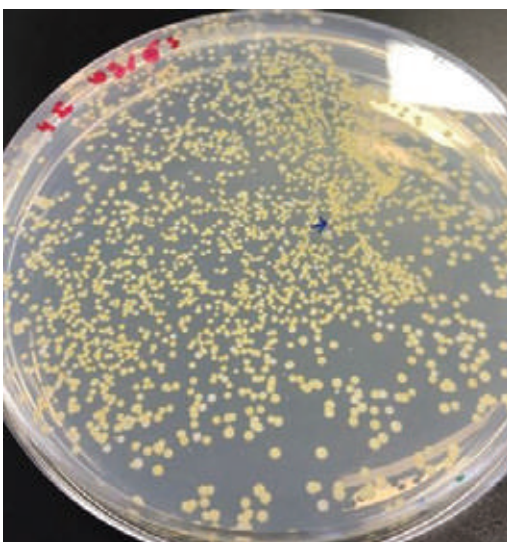


The red zone shows the most damaged areas

blood vessels and damaged nerve cells, and more severe complications later on. We've been able to replicate those initial moments when the 'jelly' brain is first deformed on impact, by combining engineering principles and medical knowledge. This is providing us with new insights."

The researchers say further clarification of these links in future studies will be the key to analysing the long-term effects of head impacts. This could lead to new improvements in protective strategies, including new types of helmet designs.

—COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS



Making mini drug factories

Synthetic biologists from Imperial have re-engineered yeast cells to manufacture penicillin, raising the possibility of developing new forms of antibiotics and anti-inflammatory drugs.

Penicillin is a member of a family of biological compounds called nonribosomal peptides, which are normally produced by bacteria and fungi and form the basis of most antibiotics today.

The rise of antimicrobial resistance means there is a need use genetic engineering techniques to find a new range of antibiotics from bacteria and fungi. Pharmaceutical companies have long experimented with nonribosomal peptides to make antibiotics, however, genetically engineering the exotic fungi and bacteria likely to have antibacterial properties is extremely challenging.

Baker's yeast, on the other hand, is easy to genetically engineer. Scientists can simply insert DNA sequences and experiment with different gene combinations making yeast mini factories for antibiotic production research.

Study lead Dr Tom Ellis (Bioengineering) explains: "Humans have been experimenting with yeast for thousands of years. From brewing beer to getting our bread to rise, yeast is the microscopic workhorse behind many processes."

In their experiments, the team used genes from the filamentous fungus which naturally

produces penicillin. These genes allowed the yeast cells to produce the nonribosomal peptide penicillin via a two-step biochemical reaction process.

The yeast cells then expelled the penicillin directly into the solution it was in, which was then added to a petri-dish containing streptococcus bacteria to observe its effectiveness.

"The rise of drug-resistant superbugs has brought a real urgency to our search for new antibiotics. Our experiments show that yeast can be engineered to produce a well-known antibiotic. This opens up the possibility of using yeast to explore the largely untapped treasure trove of compounds in the nonribosomal peptide family to develop a new generation of antibiotics and anti-inflammatories."

—COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS



Lasting Legacy

Penicillin was first discovered in 1928 by Sir Alexander Fleming at St Mary's Hospital Medical School, which is now part of Imperial. He also predicted the rise of antibiotic resistance soon after making his discovery. "We hope, in some small way, to build on his legacy, collaborating with industry and academia to develop the next generation of antibiotics using synthetic biology techniques," Dr Tom Ellis said.

Creating new spaces for collaboration and community



One of the wonderful things about science and technology is that it's difficult to predict where avenues of experimentation might ultimately lead. One of the most famous examples is that of Imperial's own Alexander Fleming, who whilst working on the properties of staphylococci bacteria at St Mary's, returned after a holiday to find penicillin mould had infiltrated one of his petri dishes and destroyed some of the bacteria. Thus was born the era of antibiotics and modern medicine.

Now at the White City Campus, we could be on the cusp of designing new drugs from scratch using techniques such as synthetic biology and dial-a-molecule chemistry (see page 7).

Planning for the future needs of scientists can be particularly difficult, but one of the key aims of White City has always been to provide the flexibility and room to accommodate whatever new advances lie ahead in the next 30–40 years. As science and technology continue to push the boundaries of what is possible, it is also important that we involve wider society in that journey and look for new ways to engage and inform.





CGI of the ReachOut Makerspace at The Invention Rooms

“Our new campus will provide space to expand our work and offer new collaborations with business and academia, as well as the local community and other partners.”

Shaping up

For the past five years, Wood Lane Studios has provided accommodation for some 600 postgraduates; but it won't be long before the north part of White City is bustling with Imperial staff and collaborators going about their day-to-day work of research and innovation.

The now complete Translation and Innovation Hub (I-HUB), which provides space for start-ups and international corporations, is attracting a growing list of tenants. Imperial's ThinkSpace, which runs the I-HUB, recently signed an agreement with workspace provider Central Working. The first tenant at Central Working will be OGCi Climate Investments – a start-up with \$1bn of funding to invest in technology to accelerate the development of emission reduction technology.

In the coming months, the Invention Rooms on Wood Lane will open its doors, allowing people from the local community to collaborate with our staff, students and partners in turning creative ideas into reality. Inside the building, there will be a Reach Out Makerspace where young people living in the local area can get hands-on experience of prototype development. There will also be an Advanced Hackspace with workshop facilities for our staff, students and partners to turn research ideas into breakthrough prototype products. Lastly, there will be an interaction zone where local people and College partners can connect with Imperial's research.

Next year, the Molecular Sciences Research Hub (MSRH) will open as a new home for research from the Department of Chemistry – marking the latest step in an journey that began with the creation of the Royal College of Chemistry at Hanover Square in 1845. The MSRH will provide a new way of working for up to 800 molecular scientists, clinicians, engineers and commercial partners. Research areas will include understanding disease, prevention and cure on

the molecular level; harnessing molecular science for clean sources of energy; and creating materials for the twenty-first century. Also, by creating a new facility dedicated to molecular research, the College can explore opportunities to improve and expand teaching at South Kensington.

In 2019, the Michael Uren Biomedical Engineering Research Hub will open, pioneering a new approach to biomedical research and bringing together over 500 engineers, clinicians and scientists to develop new and affordable medical technology. The first and largest facility to be located within the building will be the biomedical engineering hub. This will be led by co-directors Professor Anthony Bull, Head of the Department of Bioengineering; and Professor Justin Cobb (Surgery and Cancer), Chair in Orthopaedic Surgery.

Next phase

While construction on the north site continues apace, the masterplan for the larger south site of Imperial's White City campus is starting to take shape (see also page 10). This site presents some unique challenges and opportunities, with major dual carriageway roads immediately to the north and east of the site (A40 Westway and A3220) and rail lines immediately to the east and west. It means that connectivity – with the north site, to Hammersmith Campus as well to the rest of the White City area – is crucial. It's a key principle of the south site masterplan to provide common spaces to support community and collaboration, with cafes, restaurants, shops, exhibition space and other cultural facilities where people can meet and share ideas.

Professor Neil Alford, Imperial's Associate Provost (Academic Planning), said: “We are making a long-term commitment to create a world-leading research and innovation campus in White City. Our new campus will provide space to expand our work and offer new collaborations with business and academia, as well as the local community and other partners. We want to gather input to feed into our proposals for the southern part of the campus, involving our community at an early stage and long into the future.”

Timeline of White City

1838

The railway comes to Shepherd's Bush

1908

Franco-British Exhibition and Olympic Games

1912

Hammersmith Hospital opens as a workhouse-infirmary ▶



1960

BBC Television Centre opens

2008

Westfield London opens, kick-starting the latest transformation of White City

2009

Imperial purchases former BBC Woodlands site

2012

GradPad Woodlane Studios Gradpad Opens

2013

The College purchases the south site of the campus, extending its land holding to 23 acres

2016

The I-HUB opens ▶



2017

The Invention Rooms due to open

2018

Molecular Sciences Research Hub due to open ▶



2019

Michael Uren Biomedical Engineering Research Hub due to open ▶



2020

South site begins to take shape



Professor Neil Alford speaks at the launch of the I-HUB in 2016

Designs on White City

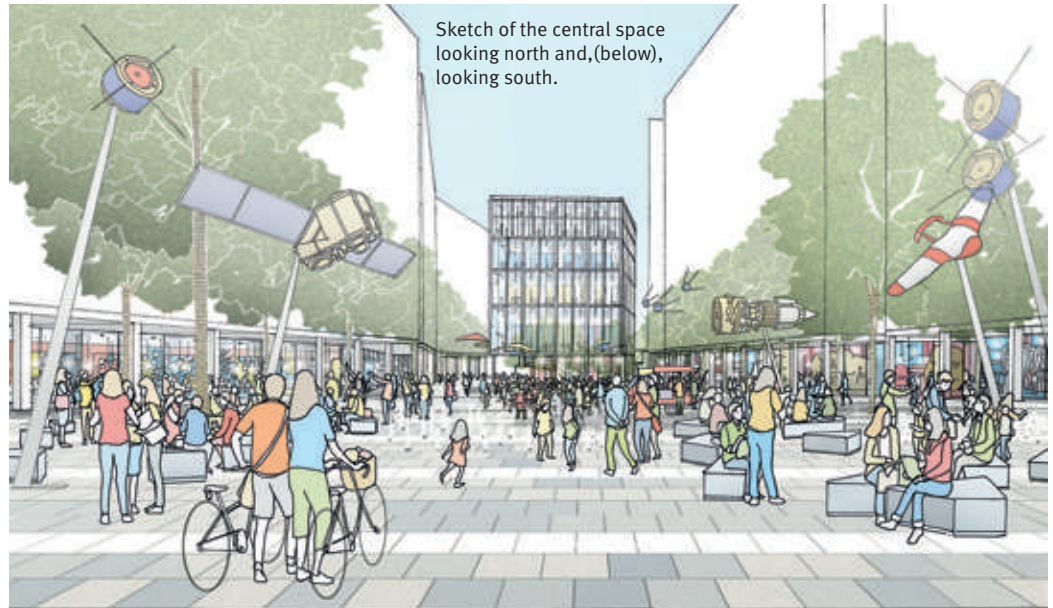
Allies and Morrison is the award-winning architecture and urban planning practice that has been appointed to work on the masterplan for the White City Campus south site. Here we speak with Practice Partner and project lead Paul Eaton.

Tell us a little about Allies and Morrison?

As architects, our work spans a range of different projects across different scales. Rather than focusing solely on one type of project, in a way, we like to specialise in being generalists. A good portion of our work is also masterplanning. What we do bring is an understanding of how to create places, the importance of the public realm and, importantly, the way in which buildings relate to the public spaces they face. We don't believe in holding dogmatic positions on anything; you don't come in with all the answers, rather you come in with the ability to listen and learn and shape the answers with people.

How do you work with Imperial?

Part of the process is for everybody to somehow be involved in the masterplan. We've been onboard for nine months now and the first few months were spent in extensive consultation with a number of groups around the College – including the senior academic leadership



and White City Working Group, but also the Energy Futures Lab, Imperial College Union, non-executive members of the College Council, White City Syndicate, Estates Facilities and the CFO's team.

Everybody has different perspectives, and that really colours how they think about White City. Some people can't wait to go over there because they are the people who crave new things and new ways of working. But everyone at the College has been open to ideas – because that's the currency of the College.

What did you take from the consultation?

A pillar of the masterplan is to allow the College to do what it does best – but even better. It's about bringing people together and allowing them to exchange ideas. You can think about the masterplan as a kind of serendipity machine – a way of orchestrating the space to facilitate the all-important interactions. What's really interesting is that this happens at South Kensington almost by accident; everybody is jammed in together – to some extent that's part of the secret sauce of the place. White City is a chance to do that in a slightly more structured way and in a way that's more inviting to the local community.

What are some of the challenges of applying these principles to a world-leading university? The wonderful thing about science is that it's at the vanguard of knowledge, therefore you

don't know what the future holds. I talk about the masterplan being a flexible chassis – with fixed elements such as the thoroughfares but where you can plug in buildings as required, in any order. Ultimately, the College needs this flexibility so it can continue to be agile. You don't need to know exactly what the buildings will be. Of course, it's likely that there'll be multi-disciplinary research hubs, but equally the masterplan is there to accommodate commercial partners who have different needs. Also, you have to expect the unexpected. For example if the latest focus of a particular branch of research needs a particular type of space or labs, you need to be able to cater for that.

How does that approach differ from science and research parks in say Cambridge or Surrey?

I think London is the big difference; it's a good thing to be embedded in London. Instead of building a science park-like campus, you're forced into a buzzy, urban condition. Theoretically, that makes it harder, but if you get the chassis right, you can accommodate those opportunities and produce places with more intensity – this is a whole new way of doing things. Working with all of the adjacent landowners and the local community, the momentum is building, it is feeling more and more like the most exciting part of London to be in.

Have your say

All members of College are invited to give their input by Friday 16 June 2017. To give your feedback on the draft proposals for the south site visit: www.imperial.ac.uk/white-city-planning

Find out more about the campus at: www.imperial.ac.uk/white-city-campus





Fab festival attracts record numbers

Around 20,000 visitors flocked to South Kensington for Imperial Festival earlier this month for a weekend of exciting science, new technology and live music – which was also for the first time broadcast live to the world through YouTube.

The Festival opened at 12pm on Saturday 6 May with the IC Big Band, one of Imperial's student societies, welcoming visitors to the sixth Imperial Festival with some jazz.

Sarah Porter Waterbury, Imperial's Vice-President (Advancement), greeted visitors, saying the Festival is an opportunity for the College to open its doors and share some of Imperial's exciting research and the impact it is having in the world.

This year's Festival comprised ten different zones, all focusing on research and innovation across the spectrum of science, engineering, health and business. Visitors learned to tell good bacteria from bad in the Superbugs Zone, operate next generation drones in the Robot Zone, and much more.

Commenting on her experience, visitor Cathy Green said: "We had a brilliant day – saw lots of exciting science and all the presenters were a credit to the university. Lots of time to answer my 12 year old's questions. Professor Michelle

Dougherty's talk on the Cassini mission was particularly fascinating. There just wasn't enough time to fit everything in! We'll be back next year."

Festival Manager Sarah Umar (Advancement) said: "Imperial Festival is a wonderful example of what happens when people come together for a common goal; it's an event that everyone in the Imperial community can be proud of and I feel really privileged that I had the chance to work with the Festival Team, to make the event come to life."

"If you had the chance to visit then please do tell us what you think, we're currently gathering feedback and you can find the link below." imperial.ac.uk/festival/feedback

Food for thought

New for this year was the Food Zone, where festival-goers tried out technology that uses electronic currents to create virtual flavours in the mouth, discovered how microwaveable cutlery could help combat childhood obesity, and learnt how to make cheese creamier through physics.

Scientists at the Zone explained how research is revealing which types of foods provide the greatest protection against disease.

Engine of discovery

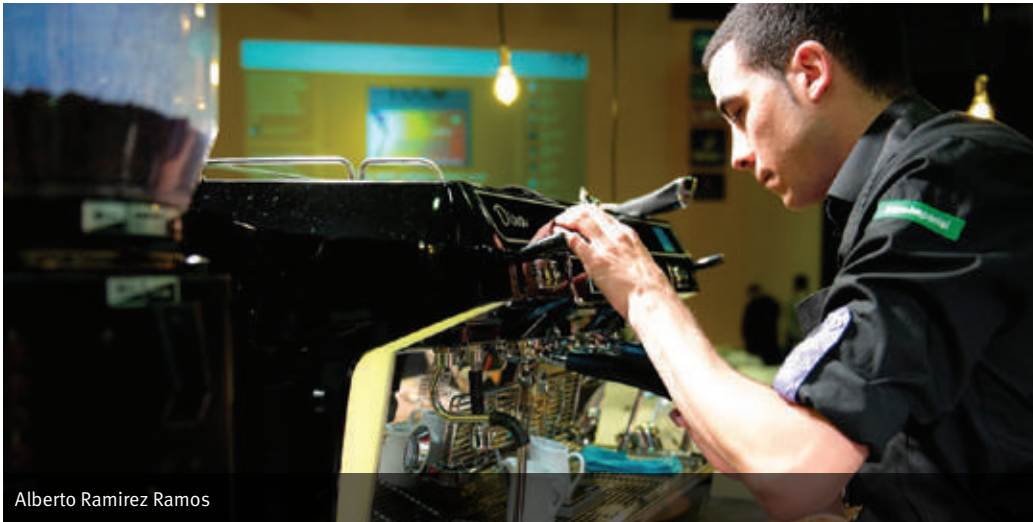
All inventions and innovations start with ideas, and this year's Festival took people on an immersive journey through the creative process

Proving particularly popular was Continuum, presented by the Imperial College Advanced Hackspace and the Dyson School of Design Engineering, which allowed people to put their ideas through the train of creative thought in the form of a huge set of interconnected machines and tubes.

Once an idea is polished off it heads to prototyping stage, and that's where the Enterprise Lab came in, showcasing some top Imperial student innovations in the Future Zone.

Oasis of calm

For those looking to escape the hustle and bustle of this year's festival frenzy, there was the Contemplation Zone, curated by students from Imperial's MSc in Science Communication course. It offered chance to reflect on the relevance of science in society and how it is represented in the media, with science documentaries, podcasts and magazines, providing a space for festival goers to think about science critically.



Alberto Ramirez Ramos



Culinary excellence

An Imperial chef has secured first place in a national contest for his exquisitely decorated cake.

The University Caterers Organisation (TUCO) annual skills competitions were held at Warwick University in April, with 150 delegates from over 50 universities competing in a range of activities.

Stefan Miles was awarded Gold and Best in Class in the pre-prepared cake category for his Alice in Wonderland creation; while another member of Imperial catering staff, Alberto Ramirez Ramos came home with Silver in the barista skills competition, wowing judges with his signature Anisete coffee.

Stefan, who has worked at Imperial for nine years, revealed that he has only been making cakes for a few years and that his first attempt was for the birthday of his young daughter, who suffers from allergies.

“We simply couldn’t find any suitable allergen-free cakes, so I decided to have a go myself. She requested that it be themed around ‘Mr Tumble’ – who, unbeknown to me, is a clown-like children’s TV character. I thought the resulting effort was sub-standard, and frankly Mr Tumble looked a little worse for wear, but she absolutely loved it and so did her party guests and their parents.

“Gradually, I started making more cakes, improving and learning new skills and techniques and word got around I guess. It’s really spiralled lately, I’m incredibly busy.”

Smell the coffee

Imperial’s other TUCO medal-winner, Alberto Ramirez Ramos, started working as a porter in the College kitchen

just over two years ago having moved from Spain. Last October he transferred to front of house, and after undergoing barista training, found he had a natural talent for it.

After winning Imperial’s internal barista competition, Alberto was persuaded to enter TUCO. There he had to make two espressos, two cappuccinos, and two signatures for a panel of industry judges who were looking for taste, presentation and calmness under pressure.

For his signature coffee, called Anisete, Alberto explains that he drew upon influences from his native country.

“In Spain a lot of people, particularly the elderly, drink coffee with anise seeds, so I wanted to bring a more contemporary edge to that. I started experimenting at home making various syrups with star anise from the local supermarket, but it just didn’t work, so I ended up bringing the right anise back from Spain!

The finished article also

contains orange zest, cinnamon and iced milk. To secure a medal though, required Alberto to go the extra mile.

“You have to treat the judges as you would a customer, talk to them and be charming. I gave them a pair of sunglasses, sprayed a little orange essence around and said: ‘just imagine for a moment that you are in Spain’. It seemed to work! I’m really motivated to go one better next year and win.”

Also competing at TUCO were Steven Robertson and Andy Crook in the Chef’s Challenge, in which a team of two chefs cook a three course meal from a list of ingredients provided prior to the event. Andrea Galanska competed alongside Alberto in the barista skills challenge.

Imperial’s Head of Catering and Events Campus Services, Jemma Morris, said: “We are extremely proud of all the competitors who represented Imperial and absolutely delighted for Stefan and Alberto for impressing the judges and receiving this recognition.

“They are all a credit to the College and glowing examples of the hard work and dedication of our team.”

—JON NARCROSS,
COMMUNICATIONS AND
PUBLIC AFFAIRS



Touchy feely

A recent workshop at Chelsea & Westminster Hospital saw Dr Alejandro Granados from Imperial's Centre for Engagement and Simulation Science collaborate with sculptor Johann Arens to explore the use and limitations of the sense of touch in both art and medical training.

Johann created a replica of the first known piece of sculpture that was intended to be touched, which was featured at the workshop alongside the Centre's haptic Digital Rectal Examination (DRE) trainer. The workshop was part of Johann's art residency at Hackney-based SPACE Studios.

Johann gave a presentation on how tactility is underused in the art world and his interest in haptic technologies that enable medical students to develop their palpation skills without the need for a real patient. Dr Granados, who has developed the DRE trainer, then spoke about the



Workshop participant explores sensory sculpture (credit: Lou MacNamara)

importance of the sense of touch in medicine and whether clinicians are becoming more dependent on vision, given the ever-increasing quality of imaging technology.

The fifteen workshop participants had the opportunity to perform a simulated rectal examination using the haptic device. Then, whilst wearing virtual

reality headsets and sensors on their fingers, they explored Johann's sculpture with their hands. Whilst the surface certainly felt hard, the images they were seeing through the headset showed the sculpture deforming in response to their manipulation – a clash of perceptions that many of the

participants found very strange.

Following the activities, a group discussion explored the limitations of the sense of touch in both art and medicine, to end what participants found to be an engaging and interesting experience.

—DUNCAN BOAK, DEPARTMENT OF SURGERY & CANCER

Audience raptures captured

The Data Science Institute hosted a one hour classical music concert in a collaboration with the Guildhall School of Music as part of a pilot experiment to gain neurological insights into audience response.

The audience was a mixture drawn from Imperial members of staff, with varied levels of experience with music and skills. During the concert, data was recorded on how musicians and audience members engage through the music playing at a brain level.

Hosted in the DSI's Data Observatory, both audience members and musicians were given an EEG brain monitoring cap which recorded brain waves. Other participants

who were not connected to an EEG, were given a questionnaire to fill out regarding their reactions. Hosted by Dr. Miguel Molina-Solana, his research partners and he will be processing these data in the upcoming months.

The Guildhall School of Music & Drama is one of the world's leading conservatoires and drama schools, as well as a global leader of creative and professional practice and promotes innovation, experiment and research.

The KPMG Data Observatory (DO), the largest of its kind in Europe, features an enveloping circular wall of 64 monitors powered by 32 computers facilitating 313 degrees of surround vision.

—CERY S MORGAN, DEPARTMENT OF COMPUTING



obituaries

TIM SHAW

Tim Shaw, Emeritus Professor of Mining Engineering, died on Friday 21 April at the age of 82. His college in the Department, Emeritus Professor Dennis Buchanan, pays tribute.

“Tim was born into a mining family and spent part of his school days at the Consolidated Murchison gold and antimony mine in South Africa, where his father was general manager. Tim was educated at Bishops Diocesan College in Cape Town before going on to study mining engineering at the University of the Witwatersrand. He then joined Johannesburg Consolidated Investment.

Tim’s rapid rise within JCI gave him eventual overall technical responsibility for their large gold, platinum, coal and antimony operations as Chief Consulting Engineer. It was from this elevated appointment and poised to reach the top position in JCI that he and his wife decided that their young family would have a brighter future outside South Africa.

Following an academic appointment as Professor at Virginia Polytechnic Institute,

Tim became Chair in Mining Engineering at the Royal School of Mines at Imperial in 1980. Tim went on to act as a bastion of traditional mining engineering training at the College. He also served a period as Dean of the Royal School of Mines.

He launched the European Mining degree with several institutions on the Continent including in Delft and Aachen. This legacy continues as the Joint Master European Mining, Minerals and Environmental Program. He contributed to the teaching of the MSc in Metals and Energy Finance together with College’s related continuing professional development programme. Right up to last month we were delivering team teaching to postgraduate students and he was scheduled to deliver a continuing professional development course with me in July.

While I consciously attempted to capture Tim’s fund of knowledge and experience in a new e-Learning course we have only just launched on EduMine, there will be no substitute for having him present in the lecture room. He will be sorely missed but his legacy will continue through the many students he taught.”



LAWRENCE SOUNG YEE

Lawrence Soung Yee, Instrumentation Engineer in the Department of Physics, died on Sunday 19 March 2017 aged 38 years. His colleague in the Department, Helen O’Brien pays tribute.

“Lawrence joined Imperial College in November 2012 as the Assembly, Integration and Test Manager for the Solar Orbiter Magnetometer being built here in the Physics Department. Solar Orbiter is a European Space Agency (ESA) satellite, and the magnetometer is one of the ten scientific instruments that will be flown on the spacecraft in its orbit close to the sun to study how the Sun influences interplanetary space. The flight model of the instrument has recently been accepted by ESA to fly on the spacecraft.

Lawrence was absolutely key to the successful build of the instrument. He meticulously checked and documented all the parts and materials procured for

our instrument, to make sure they were qualified to survive the rigours of the mission. He was a key player in solving many of the technical problems we have encountered during the design and build phases, providing calm, sound and sensible advice even in the most stressful situations. Even after being diagnosed with cancer, Lawrence continued to contribute, coming into college around his chemotherapy appointments. His quiet and calm fight against the disease that ultimately claimed him was inspiring and humbling for his co-workers to observe.

Lawrence was a talented engineer and also a very warm and calm individual, he was a much valued member of the team and central to our overall success. The Solar Orbiter magnetometer will take Lawrence’s name with it out into space, both figuratively through all the work he did to make it a reality, and literally as his name is written into the flight software.

He is and will be much missed.”

Welcome moving in

Ms Jitka Aldhoun, Surgery & Cancer
 Dr Nick Andreas, Surgery & Cancer
 Mr Mohamad Asad, Estates Division
 Miss Lara Bailey, Residential Services
 Mrs Hannah Bannister, Education Office
 Dr Antoine Barbot, Faculty of Engineering
 Miss Asta Beisyte, Residential Services
 Miss Rita Ben, Faculty of Medicine Centre
 Dr James Bennett, Public Health
 Mr Matt Bentley, Faculty of Engineering
 Miss Fay Blake, Student Recruitment & Outreach
 Mr Joshua Blight, Life Sciences
 Mr Thomas Boyce, Residential Services
 Mr Tom Boyce, Residential Services
 Mr Rowan Brackston, Life Sciences
 Miss Michelle Buckman, Faculty of Medicine Centre
 Miss Charlotte Butler, Grantham Institute
 Miss Sheena Cardoso, HR
 Ms Frances Carroll, Medicine
 Mr Carmine Colicino, Computing
 Ms Giulia Comini, Faculty of Natural Sciences
 Dr Matthew Crosby, Computing
 Miss Zulma Cucunuba Perez, Public Health
 Ms Anna Cupani, Enterprise
 Dr Oscar Dahlsten, Physics
 Mrs Pranati Dandi, ICT
 Miss Anne Dooley, Residential Services
 Dr Emanuele D'Ossualdo, Computing
 Ms Elizabeth Euell, Residential Services
 Dr Ana Fernandes Neves Soares, Surgery & Cancer
 Miss Stase Gailiunaite, Faculty of Natural Sciences
 Dr Juan Garcia De La Cruz Lopez, Civil and Environmental Engineering
 Mr Samuel Giltrap, Physics
 Dr Caroline Golden, EEE
 Mr Pablo Gonzalez de Aledo Marugan, Computing
 Dr Louis Grandjean, Medicine
 Mr Luis Granja Louro, Business School
 Ms Lorenza Grechy, Aeronautics
 Miss Laura Griffin, Medicine
 Mr Till Hackler, Design Engineering
 Dr Yacine Haddad, Physics
 Dr Astrid Hoermann, Life Sciences

Dr Jan Huckelheim, ESE
 Mr Jacopo Iacovacci, Surgery & Cancer
 Mr Dan Iorga, Computing
 Miss Rosie Jenkins, Public Health
 Ms Claudina Jensen, ICU
 Dr Michael Jones, Medicine
 Mr Matthew Jones, Life Sciences (Silwood Park)
 Dr Satwik Kar, Medicine
 Mr Sal Khan, Security Services
 Dr Daook Kim, Chemical Engineering
 Dr Sunghyun Kim, Materials
 Mr George Kkelis, EEE
 Ms Marketa Kubankova, Chemistry
 Miss Virginie Lambertucci, Surgery & Cancer
 Dr Kirsty Lawrence, Surgery & Cancer
 Dr Helen Laycock, Surgery & Cancer
 Mr Nicholas Letchford, Public Health
 Professor Michael Levin, Medicine
 Dr Polina Levontin, Centre for Environmental Policy
 Dr Huai-Ti Lin, Bioengineering
 Dr Zhigang Liu, Surgery & Cancer
 Miss Cheyne Lulham, Business School
 Mr David MacIver, Computing
 Mr Dimitris Mandiliotis, Business School
 Dr Stefano Mariani, Mechanical Engineering
 Dr Lachlan Mason, Chemical Engineering
 Miss Sumi Mathew, Public Health
 Dr Cillian McPolin, Physics
 Mr Gianfrancesco Melina, Aeronautics
 Dr Lilian Mendoza Mathison, Medicine
 Mr Shay Meshulam, ICT
 Mr Piers Milner, Mechanical Engineering
 Mr Ciarán Moynihan, International Relations Office
 Mr Giancarlo Napolitano, Residential Services
 Ms Emma Neave, Research Office
 Miss Lauren Necati, Communications and Public Affairs
 Ms Martine Nurek, Surgery & Cancer
 Dr Samir Nuseibeh, NHLI
 Miss Elizabeth Osei, Faculty of Medicine Centre
 Mr Ade Oyewumi, Finance
 Ms Ewa Pacuszka, Medicine
 Miss Amrita Padan, Residential Services
 Jenny Kamlesh Patel, Registry
 Mr Bo Peng, Mechanical Engineering
 Dr Olitin Pop, Public Health
 Mr Debashis Puhane, Mechanical Engineering
 Mr Iain Pullar, ICU
 Mr Stephen Reece, Medicine

Ms Mary Reynolds, Advancement
 Dr Fernando Rosas De Andraca, Mathematics
 Miss Jenelle Rutherford, Faculty of Medicine Centre
 Dr Agata Sadza, Faculty of Medicine Centre
 Mr Oscar Sanderson, Medicine
 Mrs Sneha Saunders, Chemical Engineering
 Dr Volker Schlue, Mathematics
 Mr Giorgio Sernicola, Materials
 Dr Nita Shah, Life Sciences
 Dr Margaret Shi, NHLI
 Mrs Shaadi Shidfar, Public Health
 Ms Kinga Suba, Medicine
 Dr Oluwadamilola Taiwo, ESE
 Mr Kevin Tang, Faculty of Medicine Centre
 Miss Shenzhen Tempest-Roe, Medicine
 Professor Simon Thom, NHLI
 Ms Hafwen Thomas, NHLI
 Ms Claire Turner, Surgery & Cancer
 Dr Petr Vikhorev, NHLI
 Mr Chaitanya Vuppusetty, NHLI
 Mr Lee Webber, Surgery & Cancer
 Miss Hannah Whittaker, NHLI
 Dr Harry Whitwell, Chemical Engineering
 Dr Krzysztof Wildner, EEE
 Miss Jenny Willis, Security Services
 Miss Men-Yeut Wong, Registry
 Ms Kim Woodruff, Public Health
 Dr Huw Woodward, Centre for Environmental Policy
 Dr Liang Yang, ESE
 Ms Maria Zarcone, NHLI
 Dr Chengxiang Zhuge, Centre for Environmental Policy

Farewell

death in service

Professor Martin Allday, Medicine

retirement

Ms Margaret Brown, Reactor Centre (26 years)
 Mr Kevin Cope, Estates Division (41 years)
 Mr Thomas Gamble, Estates Division (15 years)
 Ms Melanie Landymore, Research Office (9 years)
 Miss Karen Linfield, Medicine (28 years)
 Mr Shashikant Patel, Finance (42 years)
 Miss Meilin Sancho, Physics (40 years)
 Ms Barbara Sanger, Library (11 years)

moving on

Miss Lucy Ahfong, Public Health
 Dr Reza Anbari Attar, Mechanical Engineering
 Miss Sara Asenjo Sanz, Catering Services
 Ms Maeve Bartlett, Medicine
 Mrs Lavina Bellaramani, Medicine
 Miss Hazel Blythe, Surgery & Cancer
 Mr Martin Boddy, Sport and Leisure
 Dr Stuart Bogatko, Materials
 Dr Louise Breuer, Public Health
 Mr Daniel Brooke, HR (9 years)
 Miss Leanne Brooks, Sport and Leisure
 Professor David Brooks, Medicine
 Mr Nic Brown-Trenchfield, Campus Services
 Dr Dorothy Buck, Mathematics (12 years)
 Mr Andrew Burton, ISST (8 years)
 Ms Beatriz Caballero Martin, Library
 Mr Mikhail Caga-Anan, NHLI
 Dr Stefano Casasso, Physics
 Dr Michelle Clements, Public Health
 Mr O'Neal Copeland, NHLI (22 years)
 Mr Josh Cornish, ICT
 Dr Paolo Costa, Computing
 Mr Colin Cottle, Estates Division
 Dr Hutokshi Crouch, Public Health
 Dr Oscar Dahlsten, Physics
 Ms Franca Davenport, Communications and Public Affairs
 Mr Keith Davies, Mechanical Engineering
 Mr Nicholas Dawe, Communications and Public Affairs
 Dr Baptiste Depalle, Materials
 Mrs Lynette Dunford, Business School
 Miss Tinuke Durotolu, Public Health
 Dr Laetitia Duval, Public Health
 Dr Benjamin Evans, EEE
 Miss Andreea Flueraşu, ICU (5 years)
 Ms Jessica Geldart, Business School (5 years)
 Dr Simon Good, Physics
 Miss Ishwori Gurung, Medicine
 Mrs Gintare Hall, Medicine
 Dr Joachim Hamm, Physics (6 years)
 Ms Stephanie Harris, Faculty of Medicine Centre
 Dr Elizabeth Haythorne, Medicine
 Mr Stephen Heeks, Reactor Centre (8 years)
 Mr Robert Horton, ICT
 Mr Ian Hunt, Mechanical Engineering

Mr Richard Husbands, Estates Division
 Mrs Elizabeth Jones, NHLI
 Mr Zak Kadrou, Faculty of Engineering
 Mr Juhan Kahk, Materials
 Ms Maja Kecman, Surgery & Cancer
 Ms Margaret Kennedy, EYEC (13 years)
 Professor Peter Kohl, NHLI (6 years)
 Dr Ermis Koutsos, EEE
 Mr Sven Kratochvil, Medicine
 Miss Millie Langton, Faculty of Medicine Centre
 Dr Zina Lechevallier, Public Health
 Mr Colin Lee, Chemical Engineering
 Dr Kevin Leong, NHLI
 Ms Chin-Hsuan Lin, Bioengineering
 Mr Michael Lynn, ICT
 Dr James Mackrill, Design Engineering
 Dr Andrzej Malinowski, Institute of Clinical Sciences
 Miss Camille Marijon, Materials
 Dr Nigel Marx, Mechanical Engineering
 Dr Salman Masoudi Soltani, Chemical Engineering
 Ms Pelagia Matalliotaki, Catering Services
 Miss Taneisha McFarlane, Surgery & Cancer
 Mr Malcolm McLean, School of Professional Development
 Dr Catherine Menon, Enterprise
 Miss Ines Meza Mitcher, Business School
 Dr Syafrina Mohd Sharif, Centre for Environmental Policy
 Mr Richard Monk, Registry
 Dr Julia Morales Sanfrutos, Chemistry
 Dr Alejandro Moreau Ortega, Chemical Engineering
 Dr Jui Namjoshi, School of Professional Development
 Mr Jack Nicholls, Faculty of Engineering
 Dr Edmund Noon, Mechanical Engineering
 Dr Chris Novakovic, Computing
 Mrs Charlotte O'Brien, Medicine
 Dr John O'Donoghue, Public Health
 Dr Sang Oh, Physics (6 years)
 Miss Natalia Olejniczak, Medicine
 Ms Mirela Oliver, Registry
 Miss Kike Olupona, Surgery & Cancer
 Mr Alessandro Orchini, Mechanical Engineering
 Dr Simon Parker, Civil and Environmental Engineering
 Ms Hannah Patel, Surgery & Cancer
 Dr James Pecover, Physics
 Mr Jonathan Picken, Registry
 Mr Morgan Pinfold, Estates Division

Dr Sophie Piper, NHLI
 Dr Yasmeen Rafiq, Computing
 Miss Sharlene Reid, Surgery & Cancer
 Miss Karollina Repel, ThinkSpace
 Ms Kelly Ribeiro Alves, Finance
 Dr Luciano Rigano, Medicine
 Ms Randalle Roberts, ESE
 Dr Valentina Ruffini, Mechanical Engineering
 Miss Asha Salah, Medicine
 Ms Emily Seymour, Faculty of Medicine Centre
 Mr Haydn Shaw, Estates Division
 Dr Kelly Sheehan-Rooney, Faculty of Medicine Centre
 Miss Darya Shirobokova, ICU
 Dr Urszula Siedlecka, NHLI (11 years)
 Dr Petros Siegkas, Design Engineering
 Dr Debabrata Sikdar, Chemistry
 Ms Marianne Simmonds, Faculty of Medicine Centre
 Mr Nick Snow, ICU
 Mr Eugene Statnikov, Medicine (8 years)
 Mr Patrick Stewart, Advancement
 Dr Janet Stowell, Medicine
 Dr Christian Thomas, Mathematics (5 years)
 Dr Stefan Truppe, Physics
 Dr Marijn van Cappelle, ESE
 Dr Maximilian Wdowski, Bioengineering
 Miss Sharon Weldon, Surgery & Cancer
 Dr Martin White, Chemical Engineering
 Ms Dana Winogron, Faculty of Medicine Centre (6 years)

This data is supplied by HR and covers staff joining the College during the period 25 April – 9 May. 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.

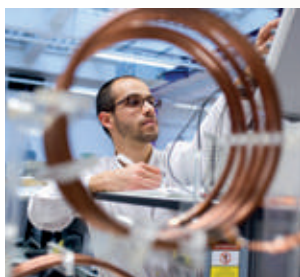


31 MAY, 17.30

Taking a Scientific Approach to Science and Engineering Education

Professor Carl Wieman, of the Graduate School of Education at Stanford University, will present current research that shows more effective ways to learn, teach, and evaluate learning than what is in use in the traditional college class. The combination of this research with

information technology is setting the stage for a new approach to teaching and learning that can provide the relevant and effective science and engineering education for all students that is needed for the 21st century. A drinks reception will follow the lecture.



14 JUNE, 12.30

Research showcase on whole energy systems

Energy Futures Lab and the Faculty of Engineering are jointly hosting this research showcase event on whole energy systems. Whole energy systems research includes looking at how to integrate renewables onto the grid, how to manage intermittency of supply using, for example, energy

storage and demand side response, and energy policy. Would you like to hear more about it from Imperial College researchers? This Research Showcase will explore different perspectives on whole energy systems research from the fields of policy, climate change, energy storage, and photovoltaics.



Staff Survey – results roadshows

All staff are invited to attend one of the Staff Survey roadshows to hear about the survey results and to ask any questions.

Hammersmith Campus:
Friday 9 June, 10.00–11.15

St Mary's Campus:
Friday 9 June, 15.00–16.15

South Kensington Campus:
Monday 19 June, 10.00–11.15

Silwood Park:
Monday 26 June, 10.00–11.15

Find out more and apply here:
bit.ly/SS17-results

31 MAY, 17.30

Data Science in Defence and Security

As part of the Distinguished Lecturer series, Mark Briers will be giving a talk on data science in defence and security.

06 JUNE, 14.30

Engineering Biology Showcase

This afternoon event showcasing work going on at Imperial in the area of Engineering Biology is hosted by the Synthetic Biology Hub and the Industrial Biotechnology Hub.



07 JUNE, 17.30

Choral Evensong with Imperial College Chamber Choir (Pentecost)

The service is collaboration between the Chamber Choir, the Chaplaincy Multi-Faith Team, and Holy Trinity Church.



13 JUNE, 12.00

Diversity in Engineering

Seminar celebrating diversity within engineering at Imperial College.

13 JUNE, 17.30

Releasing Friction's Potential

From emission reduction in planes to improving the success of brain surgery, Professor Daniele Dini's inaugural lecture will explore the explosion of applications of advances in Tribology



15 JUNE, 19.00

Antarctica: Terra Incognita – A Friends of Imperial College event

A hidden land of lakes, rivers, volcanoes, and even life is changing our image of Earth's seventh continent forever.

19 JUNE, 12.00

AHSC Seminar Series 2017: Imaging

Join two leading experts and hear how they are using different imaging techniques to investigate and help tackle cardiovascular disease.

21 JUNE, 17.30

Measuring the shape of the electron

In his inaugural lecture Professor Ben Sauer will talk about the precise experiments that aim to solve the mystery of missing antimatter.



22 JUNE, 17.30

The Bioengineering Lecture

Distinguished biological engineer Professor Sangeeta Bhatia presents the 2017 Department of Bioengineering annual lecture.

27 JUNE, 17.30

Memoirs of the Memoryless: A Markovian Meander from Disk Drives to Digital Money

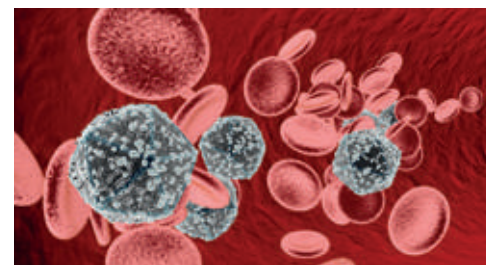
Could 100 year old mathematics provide a source of intelligent decision making in the uncertain new world of cryptocurrencies?



29 JUNE, 18.00

Living with HIV in 2017

In a special joint inaugural lecture, Professors Sarah Fidler and Alan Winston will discuss lifelong treatments for people living with HIV.



Stay in the loop

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

