Strong foundations
I loved reading the Winter 2015-16 issue of Imperial magazine. The things our students and academics are doing inspire me and get my adrenaline flowing, as do the impressive work and accomplishments of our alumni. When I think of what is happening at Imperial, I think not only of what is happening here in London, but of all the great things Imperial academics, students and alumni are doing around the world.

In addition to the panoply of current discoveries, innovations, programmes and projects in these pages, there are harbinger’s of a great future. As the Imperial White City Campus takes form, we can start to see into the future more clearly than our time-travelling alumnus H.G. Wells could have ever imagined. We are defining the 21st-century academic campus through new partnerships, new areas of research and new experiences for students.

The near future is laid out in our Strategy 2015–2020. We will build on existing strengths, yet have the courage to explore new and uncharted areas. We begin with our twin foundations. We have world-class core disciplines in science, engineering, medicine and business that provide the fundamentals for great discovery. The Dyson School of Design Engineering (see page 7) has added a new core discipline to our roster. Our academics like Professor Chris Tsonis (see page 8) leverage our strength across disciplines to pursue multidisciplinary research and to deliver a vibrant research-led education.

Great discoveries begin with talented, confident academics, who are adept at collaborating and working on challenging problems. Talented support staff put their energy and passion into making those exciting things happen. Our bright and energetic students learn from these discoveries, both in the classroom and as active participants in our research.

Students like Clementine Chambon (see page 16), are integral to our mission. We enhance their experiences by embedding their education in cutting-edge research and providing increasing opportunities for them to use their talents in entrepreneurial, creative and practical ways. You can see from these pages just how entrepreneurial they are. De Andreas Mogensen’s mission to the International Space Station (see page 12) has energised the College community. The knowledge, expertise and experiences of alumni like Andreas is a great asset that adds to our environment of excellence. We want our alumni and friends to be even more active participants in defining our future.

We also recognise the power of partnership and we seek relationships throughout the world with peers in other universities, institutions, industries, governments and service organisations. The visit of President Xi Jinping of the People’s Republic of China (see page 15) demonstrated the depth of our collaborations with China. The work of Imperial scientists at CERN (see page 10) shows the power of the table, and the great things we accomplish when we collaborate.

Addressing global challenges is at the heart of our strategy. An article in this issue highlights one such challenge: superbugs (see page 30). The Supergun Zone at the 2015 Imperial Festival illustrated the way we work to educate the public and decisions makers, while rallying over 100 of our academics into the Antimicrobial Research Collaborative (ARC) to find solutions to this global crisis.

I hope that you will enjoy these inspiring stories from today and the ambitious plans for the future. Please let me know what you think by contacting me at president@imperial.ac.uk.
FROM THE EDITOR

Building blocks

This issue of Imperial is crammed full of stories that show how the College is building strong foundations for its future.

Our first report on the emerging White City Campus (formerly described as the Imperial West — the change brings it in line with other historical names of the other campuses) is on page 24.

Alondige Lucy Tobi’s insightful words on its place in London, the illustrator Nicolas Rapp provides us with a clear view of what is planned and being built on the north site, and for context, on the south site, what remains to be discovered.

To set the ambition for White City in context, it was wonderful to be able to bring together our President Professor Alice P. Gast with eminent science writer and Imperial alumnus Dr Anjana Ahuja (Physics 1990, Space and Atmospheric Physics PhD 1993), for a conversation about the future of the College (page 20) and its impact and place in the world.

We welcome another new writer, our new Director of Alumni Relations, Nicola Pogson, with her first letter to Alumni on page 48. She highlights, there are now many ways for you to make connections and join conversations with the College and your fellow alumni, and you can enjoy a flavour of these in the latter pages of the magazine.

And if Imperial magazine leaves you wanting to hear more from the College, then please try our new daily email offering Imperial Today. We hope it’s almost like being back on campus!

Wishing you all the best for the festive season and we look forward to your letters and comments as ever.

TOM MILLER
(Biology 1995)

ONLINE EXTRA: To receive a daily email covering Imperial’s activities online and in the digital age, visit: www.imperial.ac.uk/news/imperial-today

SHARE A STORY, GET A FREE T-SHIRT

From spicy curry to rap music, we want to hear about your life outside of work and study (be photos and videos too) and we’ll send you a limited edition t-shirt as a reward! Like us on Facebook (visit: www.fb.com/imperialmagazine) or follow us on Twitter (@imperialmagazine)

3D PRINTING

I was pleased to see that a small piece of work of mine was featured on page 12 of the Summer 2014 issue. I was the researcher who led the team of undergraduate students to combine theoretical complexity models (such as the forest fire model) and 3D printing. So much has happened since this publication and I wanted to share some of our recent successes and advancements.

After publishing a paper, Sculpability: Sculptures of complexity using 3D printing in European Physics Letters, another pair of students and myself found new ways to use 3D printing to represent another popular model in complexity, namely Diffusion Limited Aggregation models. I plan to ask next year’s students to adopt some advanced visualization libraries to produce yet more sophisticated representations. My goal is to use ideas from complexity to produce something as appealing as WertelOberfell’s Fractal.MGx table (a coffee table that changes from one pattern to the fractal growth patterns of trees), which is displayed at the V&A museum and is the original inspiration for this work. Luckily our students always seem to rise to challenges even when they are tangential to their previous experience.

DR TIM EVANS
(Sculpture and Computer for Complete Science, and Theoretical Physics group, Department of Physics)

WYE COLLEGE

In 2015, Imperial announced the sale of the central former Wye College site to Tarsier Trillium, one of the UK’s largest property companies. To find out more about the sale, turn to page 9.

YOUR RESPONSES

We read the news about Wye College with mixed feelings. A good positive development for the land and buildings that have not been used for some time, but sad that I will never come back to the same Wye College again. I have great memories of the place where I did my Master’s degree. I will always be an alumnus because of Wye College.

PATRICK MUTHITWA SIMBA-MASOLE
(Physics Wye College 1994, MSc 1997)

It was sad to hear about the closures of Wye College. The curriculum for the post-graduate programme was highly regarded for being particularly suited to developing countries; it undoubtedly contributed immensely in strengthening ties between the UK and its former colonies.

LANGSTON MUWEREREA
(Wye Wye College 1994)

A WEEKEND TO REMEMBER

I just wanted to drop you a line to let you know how much we enjoyed the Alumni Weekend and visiting the Festival as part of our trip. My wife is a linguist and wasn’t too interested in coming along to see a load of science exhibits, and nor were my kids. But all of us were totally blown away by how amazing it was. There was so much to see and do, and all of it was science based. The dancing and music added to the feeling of celebration, as did the choice of food for the weekend. We had a splendid time meeting each other again and visiting old haunts.

BRANDON HAGGER
(Chemical Engineering 1975)

SHARE YOUR THOUGHTS

By post to Alumni Office, Level 4a Faculty Building, South Kensington Campus, London SW7 2AZ, UK

By email to imperialsalumni@imperial.ac.uk

By online comment • www.imperial.ac.uk/

imperialmagazine

BYO BYO!

We all had a great day. We mainly stayed in the Alumni Hub and talked, then went to the Department tour, which went down very well. Finally we went to the Union bar, which has not changed at all. I met up with my friends from Electrical Engineering too. Thanks to the Alumni team for helping us make it happen and to all those who helped make our day.

JEREMY NAGGER
(Chemical Engineering 1975)

We should clearly invite Prince to the next Imperial graduation @imperialcollege @imperialalumni @imperialalumniuk

@carpe_diem12

JOIN IN THE CONVERSATION about all things Imperial, find the networks that match your career or social interests, and take part!

Imperialalumni@london

alumni@imperialcollege.ac.uk

@imperialcollege and @imperialSPark

@imperialalumni

bit.ly/imperialalumni-linkedin-group

OUTLOOK

Byte out of history

IMPERIAL HAS CHOSEN A NEW NAME FOR ITS SUPERCOMPUTER: HELIOS. The name was selected from entries from students, alumni and staff, including some comical ones such as Magnificent Imperial (Michael McFarlane), Mr Floppy, Steve and Megatron 3000. The name was chosen in recognition of Helen Kemper Porter – the first female Professor at Imperial. Professor Porter was a botanist, biogeochemist and biochemist.

Professor Porter was an early adopter of the latest technologies, using two of the innovations today that she used to study the chemical reactions that keep plants alive. What’s that high-performance computing provides today: innovative technology that enables discoveries in science and engineering across all disciplines.

JULY 2014

THEO O’GORMAN
(Science 1978)

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IMPERIAL

WINTER 2015–16

5

IMPERIAL

WINTER 2015–16

4
Prostate cancer is the second most commonly diagnosed cancer in men, with 1.1 million cases identified globally every year.

By investigating the possible links between diet and the disease, Imperial researchers like Oliver Graham hope to find new ways to combat prostate cancer. Oliver was able to come to Imperial thanks to a PhD scholarship, partly funded by a legacy gift from generous supporters of our vital work.

“The scholarship has been very important, as it has given me an opportunity to contribute to cancer research. We have to stop prostate cancer from being such a prevalent killer.”

Last year, legacy gifts contributed over £1.5 million of funding for research and scholarships at Imperial. These gifts, large and small, create new opportunities for talented young scientists and make ground-breaking discoveries possible. For over a century, Imperial has relied on the support of alumni and friends to advance education and research. With your help we can continue to make scientific breakthroughs for generations to come.

To find out how you can play your part in supporting outstanding research at Imperial, please contact Anna Wall:
+44 (0)20 7594 3801 • a.wall@imperial.ac.uk

HELP BRING IMPERIAL DISCOVERIES TO LIFE WITH A LEGACY GIFT

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Grub’s up

Earthworms may have a humble appearance, but they have strong stomachs. They digest fallen leaves and other plant material down from the surface and eat them, enriching the soil, and they do this in spite of toxic chemicals produced by plants to deter herbivores. Drs Luke Bundy and Manuel Liebke (Surgery and Cancer) have identified molecules called defensins in the earthworm gut that enable the worms to digest otherwise inedible plant material. "Without defensins," said Dr Bundy, "our countryside would be unpunishable, and the whole system of carbon cycling would be disrupted."

Biting data

Shark attacks are often big news stories, but fatal crocodile attacks are far more common and for some people, especially in Africa, they are a daily hazard. Dr Simon Pooley (Life Sciences) investigated nearly 5,000 incidents of crocodile attacks in southern Africa and found patterns that could help people avoid being bitten. For example, crocodiles hunt by learning the routines of their prey, so it is best to avoid predictable activities near the water’s edge; and their main habitat is shallow water, so wading should be avoided. Dr Pooley also produced a booklet of helpful tips, which is being distributed for free in southern Africa.

Doomsday for carbon dating

Imperial researchers predict that by 2050 fossil fuel emissions could spell the end of radiocarbon dating as an accurate way to determine the age of organic artefacts. Radiocarbon dating works by measuring how much the fraction of carbon-14 versus non-radioactive carbon in an object has changed over the years, but when fossil fuel emissions mix with the modern atmosphere, they flood it with non-radioactive carbon. In carbon dating terms, this makes the atmosphere appear older, which is reflected in the tissues of organic artefacts. A paper by Dr Heather Graven (Physics) suggests that, at the rate fossil fuel emissions are currently increasing, by 2050 a new calf would have the same radiocarbon date as a robe worn by William the Conqueror, 1,000 years earlier.

New chapter for the Wye College site

Imperial’s Wye College site has new owners, following its sale to property company Taleral Trillion in July this year. Wye College became part of Imperial College London in 1999, and throughout its history played an important role in agricultural research and education. However, largely due to declining numbers studying agriculture and agricultural-related courses in the UK, academic activity ceased in 2009. The site has been dormant since then. Central to the new owners’ emerging plans will be finalising proposals for the long-term consolidation and growth of the Wye Free School. The other buildings could accommodate a mixture of residential, business and community uses. The proceeds of the sale will be used to support activity in the College’s Centre for Environmental Policy, the Grantham Institute, the Porter Institute, the Institute of Systems and Synthetic Biology and the Department of Life Sciences (including at Silwood Park Campus – see page 38 for an insight into one Silwood Park researcher’s ecological work).

In the spotlight: top bods talk global finance

The Brevan Howard Centre for Financial Analysis at Imperial College Business School has hosted several high-profile speakers since launching in 2014, on hot topics from zero lower bound interest rates to sovereign debt restructuring and high frequency trading. Led by two of the world’s leading experts on financial contagion, the mission of the centre is to increase understanding of global financial issues to prevent future crises. A recent highlight was a talk by economist Dr Ben Bernanke, former Chairman of the Federal Reserve under Presidents George W. Bush and Barack Obama, with an introduction by the Governor of the Bank of England, Mark Carney. It was Dr Bernanke’s first event outside of the United States since the publication of his new book, The Courage to Act, a memoir of the financial crisis and its aftermath.

FROM THE FIELD

Spotted in the September 2015 edition of Imperial Magazine

Professor Toumazou’s invention – a penetrating new approach by researchers from Imperial and Houston Methodist Research Institute in the USA – has successfully prompted parts of the body to generate new blood vessels, in a trial in mice. The team has developed tiny biodegradable nanoneedles that can pierce a cell without harming it, in order to deliver nucleic acids – the building blocks of life. Ultimately they hope their technique could help damaged organs and nerves to repair themselves and transplanted organs to thrive.

The invention should enable doctors to quickly spend upwards of half a million US dollars on conventional DNA-sequencing machines. DNAe is now working on a blood test for serious illnesses that can intervene before sepsis sets in. The award is a silicon microchip in a USB. It can rapidly analyse saliva or a swab from inside the mouth. When plugged into a computer, the portable, low-power device can analyse data on the spot within around 30 minutes. The chip can detect genetic differences in the mouth. When plugged into a computer, the portable, low-power device can analyse data on the spot within around 30 minutes. The chip can detect genetic differences in

AWARD-WINNER: Professor Toumazou was winner of the European Inventor Award 2014 in the category of research for the ‘lab on a chip’ and of the 2014 Faraday Medal of The Institution of Engineering and Technology.
Light speed

Imperial physicists have designed a record-breaking laser that accelerates the interaction between light and matter by ten times. It turns on and off in less than a picosecond – one million-millionths of a second. Designed in collaboration with researchers at Friedrich-Schiller-Universität Jena, the laser is not only ultra-fast, but also stable and effective at room temperature. It was created by using an incredibly thin wire just 120 nanometres wide – around a thousandth of the diameter of a human hair – and the concept of ‘plasmons’, which allowed the team to shrink a laser into a much more tightly focused beam than usual. This tighter focus made the beam interact with the wire more strongly, which accelerated the rate at which the laser could be turned on and off. Lead author Themis Sidiropoulos (Physics) explained that one of the uses of this technology could be to improve communication technology: “Turning a laser on and off quicker means more information carrying 1s and 0s per second, allowing much faster data communications.”

![Image: A worker at CERN operates the Large Hadron Collider.](image)

**LEFT-HANDED COSMOS**

Only around ten per cent of us are left-handed – including Angelina Jolie, John McEernoe and Chewbacca the Wookie – but the universe itself has a left-handed bias, say researchers.

Scientists working at CERN’s Large Hadron Collider looked at the direction in which a particle called the lambda b baryon spins as it decays via one of four fundamental forces in the universe, known as weak nuclear force. Within the lambda b are smaller elements called quarks and the researchers analysed how one particular quark, called the beauty quark, decayed into another type of quark, called an up quark. The team’s measurements demonstrated that the decay only takes place when the beauty quark has a ‘left-handed’ spin.

“*Our results show that the decay does indeed, contrary to earlier indications, behave in a left-handed way. The ‘handedness’ of the universe is, in combination with differences between matter and antimatter, fundamental for how our universe evolved.***” said study author Professor Ulrik Egede (Physics).

“Because the weak force is the only one of the fundamental forces to distinguish between right and left, we can also say that the universe has a left-handed bias.”

![Image: The Stormtroopers in Star Wars are all lefties. No Imperial Stormtroopers were harmed in this research (probably).](image)

**Turbo charged**

An Imperial-led team is developing a gene therapy to boost the immune system, after discovering a protein that turbo charges the production of immune cells that kill cancer cells and cells infected with viruses.

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**PITCH PERFECT** Help is at hand if you have a fear of public speaking, thanks to a virtual audience simulator that Imperial College Business School is using to help business executives improve their skills. Part of the School’s Impact Lab, the Performance Simulator features an on-stage and back-stage area and a virtual reality audience. Beate Baldwin (Business School) said: “The simulator allows people to improve their confidence by taking risks in a safe environment.”

![Image: The Stormtroopers in Star Wars are all lefties. No Imperial Stormtroopers were harmed in this research (probably).](image)

**Targeting hope**

Gene therapy for cystic fibrosis shows encouraging results in major UK trial

A new type of inhaled gene therapy – that sends packets of DNA wrapped in fat into the lungs – could give hope to people with cystic fibrosis. The condition, caused by an inherited genetic mutation, affects 50,000 people in the UK and causes the lungs to become clogged with mucus. The new therapy aims to deliver healthy copies of the affected gene into the lungs. Patients inhale the gene, which is wrapped in globules of fat, and it can then be absorbed by cells in the lining of the lungs.

In a trial of 96 patients, those who took the therapy had an improvement in lung function compared to those who took a placebo. The trial is the first to show that repeated doses of gene therapy can have a meaningful effect on the disease, and change the lung function of patients. Professor Eric Alton (Medicine), the coordinator of the UK Cystic Fibrosis Gene Therapy Consortium that developed the therapy, said: “Patients who received the therapy showed a significant, if modest, benefit. Whilst the effect was inconsistent, with some patients responding better than others, the results are encouraging, laying the groundwork for further trials.”
**No-limits innovation**

Now in its fifth year, the Sports Innovation Challenge is a project that asks students from the Faculty of Engineering to design, build and implement Paralympic sporting equipment. Student teams have created a range of innovative equipment. Student teams have re-righted wheelchair, a rowing boat for use on ice and a piece of equipment for a new type of sport: ice rowing, in which teams of athletes race against each other on an ice track. The team were initially inspired by visually impaired Paralympic skier Millie Knight, who competes with the assistance of a guide. They decided to create a self-guided and social sport. Taking inspiration from the biomechanics of rowing, ice rowing leverages a full body stroke, allowing athletes of varying ability levels to compete in teams as equals.

**SEEING RED**

Many people living with disabilities struggle to correctly assess the severity of their injuries. Internal injuries often don’t give athletes visible warning signs such as swelling or marks on the skin. The ‘bruise trousers’ consist of breathable lycra trousers and reactive film, and enable people paralysed from the waist down to quickly identify sections of their lower body that may be injured from high impacts following a sports game.

**ICE, ICE BABY**

The student team created a piece of equipment for a new type of sport: ice rowing, in which teams of athletes race against each other on an ice track. The team were initially inspired by visually impaired Paralympic skier Millie Knight, who competes with the assistance of a guide. They decided to create a self-guided and social sport. Taking inspiration from the biomechanics of rowing, ice rowing leverages a full body stroke, allowing athletes of varying ability levels to compete in teams as equals.

**RIGHT ON TRACK**

In wheelchair basketball, players can crash into one another and sometimes tip over onto the floor, which means games have to be stopped mid-play. The re-righting wheelchair is an augmented sports wheelchair featuring a metal wheel with rubber casing and a clutch mechanism which provides a lockable pivot point between the wheelchair’s bumper and the floor so that players can push themselves up from the floor, re-right the chair and resume play.

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**Blast off**

Exploration has been a dominant theme in Dr Andreas Mogensen’s (MEng Aeronautical Engineering) life ever since his days as an student at Imperial — when the College’s Exploration Board supported two trips to South America, including a pioneering expedition to the Amazon to document butterfly biodiversity. But even he never imagined his love of adventure would take him into orbit. However, this September, after years of training at the European Space Agency, Andreas blasted off on a ten-day mission to restock the International Space Station and carry out zero-gravity science experiments. With so much of space still left to visit, Andreass isn’t resting on his laurels. “I would very much like to be part of future space exploration missions... There are so many exciting places in our solar system to explore in more detail.”

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**Doctor’s note**

You might want to pause before phoning in sick with flu. If you’re over the age of 30 — imperial scientists have found that people over 30 only catch flu a couple of times a decade. They found that while children get flu on average every other year, flu infections become less frequent through early adulthood. The team analysed blood samples for antibodies against nine strains of flu that circulated between 1968 and 2009. The results showed that from the age of 30 onwards, flu infections tend to occur at a steady rate of about two per decade.

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**Presidential visit**

President Xi Jinping of China visited Imperial as part of his historic UK state visit in October.

The President and First Lady Madame Peng Liyuan were joined by His Royal Highness The Duke of York Prince Andrew, the Chancellor of the Exchequer George Osborne, Commercial Secretary to the Treasury Lord O’Neill, and several senior Chinese ministers.

They were welcomed to Imperial, the UK’s number one research partner with China, by Professor Alice P. Gast, Imperial’s President, and Professor James Stirling, its Provost.

In a speech, Professor Gast told President Xi and guests: “Imperial’s exceptional academics and talented students are working with outstanding Chinese partners. Together we are addressing some of the world’s greatest challenges.”

Imperial has intensified its research collaborations with China significantly over the last decade. In 2005, 3 per cent of Science and Nature papers authored by Imperial academics had a co-author from a Chinese institution. In 2015, that figure stands at 22 per cent.

While on campus, President Xi toured some of the world’s most advanced labs specialising in big data research and medical robotics. He also met a group of imperial students, including two from the College’s 2,000-strong Chinese student community.

Coinciding with President Xi’s visit, Imperial announced a series of new UK-China education and research collaborations, including a £3 million gift from China UCF Group, scores of new UK-China education and research collaborations, and Professor Guo said:

“Imperial’s exceptional academics and talented students are working with outstanding Chinese partners. Together we are addressing some of the world’s greatest challenges.”

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**Health trends**

It looks as though we may all have bit longer on the clock than we thought, according to Imperial scientists who have forecasted how life expectancy will change in England and Wales. The research, published in The Lancet, also suggests that the life expectancy gap is closing between men and women. The scientists predict that by 2030, life expectancy for men will increase to 85.7 years and to 87.4 for women. This is 2.4 years more for men than official estimates, and one year more for women.
A STONE’S THROW AWAY

1. Discreet monitor

AcuPebble is a wearable wireless device, approximately the size of a pound coin, which sticks on the patient’s neck or chest, discreetly underneath clothing. The device continuously monitors sounds from the heart and respiratory system in real time, and has the ability to wirelessly transmit data to the patient’s doctor.

2. Multi-purpose

Based on their research and development over the past five years, the Imperial team believe that AcuPebble can be used as a diagnostic tool, a health monitor and an early warning device. It is equipped with advanced algorithms to sift through a range of sounds, detecting only those that may indicate deteriorating health or illness.

3. Breathe easy

Patients with respiratory and cardiac conditions could benefit the most from AcuPebble. These include people living with chronic obstructive pulmonary disease (COPD), sleep apnoea, whooping cough and congestive heart failure.

4. Testing times

A small pilot clinical study was conducted with academics from the UK’s National Hospital for Neurology and Neurosurgery, on patients with sleep apnoea. The device detected at least nine out of ten individual apnoea episodes in patients, picking up a range of sounds associated with sleep apnoea, such as turbulence in airways, depth and duration of breathing, and other vital signs such as heart rhythm.

5. International acclaim

The Imperial team, led by Dr Esther Rodriguez-Villegas, along with her research assistants Guanigwi Chen and Syed Anas Imtiaz, was one of the major winners in the global XPRIZE Nokia Sensing CHALLENGE for the AcuPebble device. They were the only UK entrants to win an award in the competition, which rewards researchers developing high-impact medical sensing technologies.

Next steps

The researchers are currently in discussion with potential partners, including pharmaceutical manufacturers and mobile phone operators. They are aiming for AcuPebble to be in the marketplace within a year. To find out more visit: www.acupebble.com

BOLT OF LIGHTNING

“In films, trying to fix world events, introduce technology early, or build a sports car often goes wrong, so I’d rather be an observer of moments than a changer of them. I would travel to Budapest, 1882, when Nikola Tesla invented the idea of the alternating current motor. Using a stick as a walking partner while Tesla pondered the inefficiencies of the direct current generator, legend says he plotted a stanza from his favourite play, Faust, in which a scientist trades his soul for knowledge. Then, Tesla’s prodigious brain conjured up the design for an alternating current motor. Using a stick to sketch in the dirt, Tesla conveyed his plans directly to his friend. So, I would have witnessed a moment of great human advancement, and been lectured by one of the world’s greatest ever minds.”

RICHARD LAMBE (Executive MBA 2016)

FLIGHTS OF FANCY

“I’d like to go back to 1515 to meet Leonardo da Vinci when he was designing his famous flying machine, the ‘complex ornithopter’. It was a human-powered machine, based on the flapping wings of a bird or bat; a principle now used successfully, for the first time, in small aerial drones. We still don’t know whether he ever actually built it, so I’d love to find out. After that, I’d bring Da Vinci home with me to the 21st century. Da Vinci studied anatomy and served as Cesare Borgia’s military engineer; I’d like to invite him to dinner for a truly fascinating evening, discussing all his life sciences and engineering concepts. Then, I’d take him on a tour of the 21st century to show him the influence that his ideas continue to have on modern life.”

JENNIFER BYRAN (MEng Electrical and Electronic Engineering 2002)

ALTERNATE UNIVERSE

If time travel were possible, what would you do?

Imperial alumnus H.G. Wells’ famous novel, The Time Traveller, conjured up a fantasy of time travel, but Einstein’s theory of general relativity made it a possibility. General relativity tells us about the relationships between gravity, light and time. The closer to the speed of light you travel, the slower time passes for you; the same effect is seen when you move further away from large objects with great gravitational pull. To mark the 100th anniversary of Einstein’s theory, we asked academics and alumni: If you had a time machine, what would you do with it?

YOU’RE SO SPECIAL

“Let’s set a ground rule that I’m not allowed to influence history. With that in place, I’m a physicist so I’d like to meet some pioneering physicists. Talking to Isaac Newton would be fascinating but at that time everyone was so paranoid about someone else taking credit for their discovery that he probably wouldn’t speak to me. I think Newton would have worried that I might go back a bit further in time and claim his discoveries.

I’d really like to go back to the mid-nineteenth century and see James Clerk Maxwell just how beautiful his theory of electromagnetism is, in the context of special relativity. He was working with classical Newtonian physics but he came up with something that would prove central to special relativity. In fact, without James Clerk Maxwell, my time travel device wouldn’t make much sense!”

PROFESSOR ALAN HEAVENS is Chair in Astrostatistics in the Department of Physics

BUTTERFLY EFFECT

“I tend to look forward rather than back but I’m also intrigued by how the past can influence the future. So I’d like to go back and make a small change and see if it would have a big effect in the present or the future.

For example, how do we encourage more women into science? Perhaps we could experiment a little to find the most effective approach to creating a more equal society.

The beauty of this is that you’d never be doing it for real because you could always go back and try something different. This would get around the fact that it can take generations to make cultural shifts. Using the time machine, we could try one change at a time and see if, by the end, we have a more equal society.”

SUSAN WATTS is Head of Communications and Public Engagement at Imperial’s MRC Clinical Sciences Centre

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If you had access to H.G. Wells’ time travelling machine, what would you do?

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Expected 45% increase in medical technology industry sales 2013–2020.

£3 million deaths from COPD occurred worldwide in 2012.

1 in 10 adults is over the age of 60 affected by COPD in the UK.
A bright idea can take you across the globe, says Imperial College PhD Scholar and winner of the first Althea-Imperial prize, Clementine Chambon.

It has taken time to get accustomed to the notion of myself as a full-fledged entrepreneur. The past 12 months have been incredibly exciting and challenging as I have grown from being a PhD scholar to co-founder and Chief Technology Officer of a social enterprise, Oorja.

Last October, I submitted our seed business plan to the inaugural Althea-Imperial Prize, which aims to encourage and support female-led social entrepreneurs. My business partner, Amit Saraogi, and I came up with the idea at the EU-funded Climate-KIC entrepreneurship workshop in 2014, and since then it’s been a rollercoaster journey that has taken us all the way to New York City via the rural low-income household members, particularly women, about their domestic practices. I learned some very basic Hindi and was thrilled to get such a close insight into the daily lives of the women we talked to. It was amazing how much we could learn from communities who get by with very few resources. We’re currently analysing data from the survey and we’ll use it to inform the construction of a full-scale pilot plant in an Indian village next year.

Almost immediately after India, Amit and I travelled to New York to pitch for a prestigious fellowship from Echoing Green – an organisation that invests in early-stage social entrepreneurs. Going from a place where there was one light bulb between 12 people to Times Square was something of a culture shock!

Out of 3,629 applicants we were one of 72 businesses who successfully secured a fellowship. Oorja will receive $30,000 in funding for two years and we’ll also participate in a programme of leadership development events.

I’m now back at Imperial, focusing on my PhD, which is investigating the process of making biofuels from waste, and has helped me develop the technical skills needed to support Oorja. My supervisors are hugely supportive and have helped me find the resources to meet the demands of my PhD and Oorja.

I am very thankful to the Althea Foundation for their generous support of this project and I’m excited about helping to encourage and support more female-led social entrepreneurs. Every day, I feel so incredibly fortunate to be finally meeting them!

Do you face great hardships in your day-to-day life as a result of being a woman in India? Do you have access to electricity? I don’t face great hardships in my day-to-day life as a result of being a woman in rural Uttar Pradesh, northern India, who have no access to electricity – an organisation that invests in early-stage social entrepreneurs. Going from a place where there was one light bulb between 12 people to Times Square was something of a culture shock!

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What motivates you as a space scientist? A lifelong Trekkie, I can’t see myself sitting quietly. I would have to be running around investigating things. I’d try and find out what happened to Mars – it used to have a thick atmosphere and lots of running water. People think it might have had a magnetic pole, but the core solidified. I’d look for the evidence of what happened, for traces of life and magnetic pointers in the rock. I would like to take my husband and five-year-old daughter with me, so I will definitely have to wait until she is grown up.

What is so compelling is just how little we know, our understanding of the universe just keeps on evolving. First we thought the Earth was the centre of the universe and then we thought it was the Sun. Now we know we live in a galaxy of 200 billion stars, and that there are billions of galaxies out there. It’s all mind-expanding stuff.

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ADERIN-POCOCK: Yuri Gagarin. He was born seven years ago. As a science communicator, I’ve developed an animation that explores cosmology for four to seven year olds. As a science communicator, animation that explores cosmology for four to seven year olds. As a science communicator, I’ve involved in a new project that explores cosmology for four to seven year olds.

IMPERIAL: Tell us about a current project that’s been your hero and one day I’d like to follow in his footsteps. He’s been my hero and one day I’d like to follow in his footsteps. When he was going up, they’d just a kid from the countryside who was sent up into space.

To find out later that he had co-discovered the Higgs boson was crazy because he just didn’t what was going to happen – he could have blown up on the launch pad. He’s always been my hero and one day I’d like to follow in his footsteps.

**Healthy foundations**

**DR LESLEY DRAKE** (PhD Epidemiology/Parasitology 1993) is the Executive Director of the Partnership for Child Development (PCD) based at Imperial’s School of Public Health.

**Pivotal moment** Sitting in a biology lesson, aged 10, when my teacher showed us some pictures of microbes. I was fascinated and totally hooked. From then on I wanted to be in the world of bugs, worms, and diseases.

**Career journey** I completed my PhD at Imperial and, after a series of posts at other institutions, the College’s ethos led me back to London. I completed my PhD at Imperial and, after a series of posts at other institutions, the College’s ethos led me back to London.

**Inspiration** The children I’ve met along the way who have absolutely nothing – no power, no money, no food or even shoes. The kids who go to such enormous lengths to get into the education system and try to break out of the poverty cycle. I sometimes question whether I would have the same inner strength to try and do this.

**Disruptive finance**

**KARL HARDER (MBA 2009)** is Managing Director of Abundance NRG Ltd, the UK’s first regulated crowdfunding platform, which allows individuals to invest in renewable energy products through debentures (long-term unsecured bonds issued by a company). Abundance NRG Ltd, the UK’s first regulated crowdfunding platform, which allows individuals to invest in renewable energy products through debentures (long-term unsecured bonds issued by a company).

**Biggest challenge** Being the first company of its kind has been challenging as we had to work with the UK financial services regulator to create regulatory space for us to exist. Being the first company of its kind has been challenging as we had to work with the UK financial services regulator to create regulatory space for us to exist.

In the pipeline We are working with the UK Treasury to get ISA status for crowdfunding investments and we hope that from April 2016 we will be able to offer an Abundance ISA for ISA status for crowdfunding investments and we hope that from April 2016 we will be able to offer an Abundance ISA for ISA status for crowdfunding investments.

**Personal inspiration** Anita Roddick, founder of The Body Shop and investor in my first business. She taught me you could run a profitable business but do good at the same time.

**At the helm**

**DR ELEANOR SCHOFIELD** (MEng Aerospace Materials 2002, PhD Materials Research 2005) is the Conservation Manager at the Mary Rose Trust. The Mary Rose is a Tudor ship, which sank in 1545 and was discovered in 1982.

**Biggest challenge** Getting people interested in science, and not scared of it inspires me. I like that get to break down barriers and stereotypes of people who work in science. It’s great talking to people about the Mary Rose, and seeing them realise that it’s science and it’s exciting!
“It’s probably the biggest thing to happen to Imperial since Prince Albert acquired some land in South Kensington.” So says Alice Gast, the President of Imperial College London, of the purchase of a 25-acre brownfield site in White City in the west of London, currently being transformed into a substantial new interdisciplinary campus boasting academic departments, laboratories, residential halls and business space.

The same might one day be said of Gast, a distinguished chemical engineer, admired university administrator and a former science envoy for the US Department of State. Hers is an historic appointment: Gast, who succeeded Sir Keith O’Nions in 2014, is the first woman and first non-Briton to lead Imperial in the university’s 108-year history. It also marks a break with tradition: while her predecessors were called Rector, the College has adopted the American model of having a President and Provost. Gast became President, overseeing the strategic development of this great global university; Professor James Stirling CBE, the former head of the Cavendish Laboratory at Cambridge University, was named Provost. He is in charge of academic affairs but is ultimately accountable to the President.

One year into her presidency at Imperial, Professor Alice P. Gast talks to Dr Anjana Ahuja about her experiences of leadership, the new college strategy, and the role of a university in the 21st century.
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a gentle American accent. “We have many potential friends, including alumni who haven’t yet built a relationship with us and haven't understood what an impact their donations can have.

WE NEED TO MAKE CLEAR THE IMPORTANCE OF WHAT WE DO, AND INVITE PEOPLE TO BECOME PART OF WHAT WE DO.”

We need to make clear the importance of what we do, and invite people to become part of what we do. We need to situate our corporate and foundation, trust and philanthropists. All universities have a tendency to look inward at their own matters and put their heads down and move forward. But UK universities have a tendency to become more externally focused.

In practice, this has meant Gast marching out into the world on Imperial’s behalf. She has already collected a hefty number of names: in the past three years, Gast has met with the Prime Minister of China and the US; appearances at the World Economic Forum (WEF) in Davos and Dalian; trips to India, Malaysia, Singapore, Qatar and Saudi Arabia. The gruelling schedule is paying dividends: Imperial academics are being invited to WEF collaborations and are growing in China and she has brokered a joint MIT-Imperial fund targeted at riskier technology research. Gast, it seems, is starting to place her bets.

WHILE IMPERIAL HAS ALWAYS BEEN A PRESTIGIOUS INSTITUTION, with corridors stalked by Nobel Prize winners, it is instructive to persuade the company it keeps in the global university rankings. The Times Higher Education University Rankings put the California Institute of Technology in first place, on measures of teaching, research and international outlook. Imperial ranks behind, and offers competition to Harvard (third) and our corporate and foundation, trust and part of what we do. We need to enhance their donations can have.

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Imperial researchers who haven't previously been able to work London's international eminence. At the same time, it will givepreneurs, investors, tech-experts and creatives who are driving Imperial’s £3 billion, 25-acre White City Campus.

with a wide range of diverse and interesting companies and individuals will lead to more success for all of them.

And it’s a concept that it could be said is at the very heart of Imperial’s £3 billion, 25-acre White City Campus.

The College’s aim for its new development is to give academics and students a place to collaborate with the entrepre-neurs, investors, tech-experts and creatives who are driving London's international eminence. At the same time, it will give Imperial researchers who haven’t previously been able to work together the space to collaborate and to major interdisciplinary experiments that could change lives.

While further science and technology research to improve lives is at the core of the project, there’s also a strong element of commercialisation. The White City site — which is three miles from Imperial’s South Kensington home and adja-cent to its Hammersmith Campus — is divided into two zones. The north campus, where construction is well underway and where 600 postgraduates have already moved into sleek new studio apartments, is just a few minutes’ walk from Hammer-smith Hospital, Imperial’s focal point for translational medicine. It’s also close to another major Imperial research hub, St Mary’s, as well as the Francis Crick Insti-tute, further to the east.

Focused on health and wellbeing, the north part of the campus will house the site’s flagship building – the 24,000m² Translation & Innovation Hub, where scientists and researchers are going to be sharing space with tech giants and fledgling start-ups. The building — part funded by a £35 million government grant – will provide facilities for 1,000 scientists and engineers, and will house more than 50 start-ups and innovation hubs for several large technology companies. Some 140 spin-out companies have been founded or funded by Imperial Innovations (a commercialisation company founded by Imperial) over the past decade; the new campus is set to bring ideas to market on an even greater scale.

"The Innovation Hub will see us bring in companies, incubate brilli-ant new spin-outs, and help us to focus on the health and wellbeing parts of our strategy," says Professor David Gann CBE, Imperial’s Vice President (Development and Innovation). He hopes the campus will help London compete with the American powerhouses of Silicon Valley for digital technology and Boston for bio-medical research and innova-tion, pointing out that White City Campus is a key part of the London-Oxford-Cambridge ‘golden triangle’ which, says Gann, has "more science and tech workers and faster industry growth than Silicon Valley."

Indeed, on a third of the space at White City Campus will be devoted to diversifying Impe-rial’s income. That commercial nous was reflected in the project’s inception: it began just as Britain fell into recession. Whilst the College knew it needed to expand to fulfill its research potential, falling land values helped Imperial to initially buy a 7-acre brownfield site from the BBC in 2009 and break ground on the first building in its new site a year later. The purchase of another 17 acres of adjacent land from insurer Aviva took place in 2013.

The scale and ambition of Imperial’s White City plans were hard to imagine a decade or so ago. ‘That was before Australian small giant WeWork completed its huge first London shopping centre, down the road. The mostly commercial area consisted of warehouses, struggling workshops, and train tracks; its major attraction then was the A40 Westway.

But the area boasts a prestigious pedigree: more than a century before Uxain Bolt and company descended on Stratford for the London 2012 Olym-pics, the area that is now being transformed hosted the 1908 Summer Olympics. One year after that, it held the Imperial International Exhibition, carry-ing on the tradition of the Great Exhibition of 1851 which was held in South Kensington and led to the university’s creation.

Today, planning works for Imperial’s White City Campus continue apace. Next door to the Translation & Innovation Hub will be the 26,000m² Molecular Science Research Hub, with the new Department of Chemistry research facilities at its core, bringing together synthetic biology, data sciences, technol-ogy and health research, and due for completion in 2017. Two years later, the Michael Uren Biomedical Engineering Research Hub (see overview), a cutting-edge 19,000m² building, will open its doors and draw together scientists, engineers, and medical professionals to pursue life-changing research into new medical technology. Nearby will be a residential tower block, with some apart-ments earmarked for Imperial key workers at below-market rents, whilst the last major building on the north part of the campus will be Imperial’s School of Public Health. This will give the department which last year helped the College be recognised for having the greatest concentration of high-impact research of any major UK university (accord-ing to the Research Excellence Framework) a more spacious, purpose-designed building, to accommodate work on improv-ing the health of the population.

Little wonder Imperial’s President Professor Alice P. Gast sees the White City develop-ment as playing “a central role in cementing Imperial’s position as one of the world’s top universi-ties.” She adds that the campus “offers the opportunity to fulfil our ambitions. Our ambition to do things differently: develop new partnerships, diversify revenue streams and provide students with entrepreneurial experiences. Our ambition to start new areas of research.”

More of that ambition will eventually be fulfilled across the A40, on the south site of Imperial’s contiguous campus. Still in the planning stages, the addition will vastly increase the College’s capacity for deliver-ing its strategy on translation activities. As the land awaits its transformation, Imperial has already converted old buildings for new uses. DNA Electronics, Professor Christopher Touns-er’s spin-out company which is known for technology like its ‘lab on a chip’ that allows DNA data to be analysed within minutes and outside of tradi-tional laboratories, has already moved in. So too has Autolus, an auto-immune company run by researchers from UCL.

Imperial’s regenerative vision aims to support local organisations, communities groups and residents. Another south campus building, Studiom House, will host community engagement events and local meetings. Nearby, developers are transforming the iconic former BBC Television Centre into 950 new high-end homes and a new Soho House hotel. The hip hostelier – whose other locations include New York, Mayfair and Hollywood – is, like Imperial, betting on White City becoming an intellectual and creative powerhouse in west London.

LUCY TOBIN is a Evening Standard journalist and author of six books, including her latest The Book of Jobs (Heron Books, £9.99). She tweets @lucytobin.

DISCOVER MORE: To find out more about White City Campus, including the story so far and the latest developments at the site, visit: www.imperial.ac.uk/ white-city-campus
**The next Albertopolis**

Imagined in a future time, when White City Campus is a bustling hub, home to world-class researchers, entrepreneurs and students from around the world. Explore the plans for...

**Chapter In**

Explore the plans so far…

College’s major new campus, White City Campus is the natural place to co-locate world class researchers, and wellbeing – one of the four initial global activity focused on health.

**Construction is progressing on the seven-acre**

Albertopolis space offering networking for collaborative working, and temporary housing for start-up companies in currently vacant space on the campus site.

**The Michael Uren Biomedical Engineering Research Hub**

The architectural plans and computer-generated models of the glistening Michael Uren Biomedical Engineering Research Hub will be furthering work that academics, engineers, scientists and clinicians at The Royal British Legion support collaborative working and temporary housing for start-up companies in currently vacant space on the campus site.

**TIMELINE**

- October 2012
- September 2012
- September 2009

**The Molecular Science Research Hub**

To be completed 2017

**Reckon to White City, bringing some of its successful firms to the new campus.**

**The Translation & Innovation Hub**

New and affordable medical technology.

**The City Campus, providing new start-ups and fast-growth technology.**

**The School of Public Health (TBC)**

An opportunity for new partnerships, diversify revenue streams and provide students with entrepreneurial experiences. Our ambitions to start new areas of research.

**Michael Uren Biomedical Research Hub**

The Biomedical Engineering Research Hub (BmE Research Hub) might appear futuristic, but the research work that will shortly take place inside the building promises to make some of the biggest financial centre in the world.

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**Engineered T-cell**

To pursue life-changing research into cancer.

**Biomedical Engineering Research Hub (BmE Research Hub)**

The BmE Research Hub is designed to help collabo-

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students with entrepreneurial experiences. Our ambitions to start new areas of research. **2017**

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An opportunity for new partnerships, diversify revenue streams and provide students with entrepreneurial experiences. Our ambitions to start new areas of research.
It’s minutes before we open the doors of the Superbug Zone at the Imperial Festival. The room is buzzing with anticipation. I am one of 200 Imperial scientists who have helped design a series of interactive exhibits to encourage debate about our research.

On a normal day, I’d be working away in the lab. But I spend today frantically tweeting, favouriting and hashtagging conversations taking place in the Zone, in order to encourage further debate on social media.

A soft ping attracts my attention to the first tweet of the day, from Haringey Sixth Form Centre. It’s a simple question, but it reflects hours of work from my colleagues. I am thrilled by these 120 characters (see left).

Let’s go back a couple of months. My colleague Dr Joana Moscoso, an Imperial microbiologist, called together PhD and postdoctoral scientists from the MRC Centre for Molecular Bacteriology and Infection (CMRB). Joana is deeply committed to engaging lay audiences with science, and she had the idea of organising an event that pulled together research into antimicrobial resistance (AMR) from across the College for the upcoming Imperial Festival. Over the next few months, we worked with Imperial Festival staff and researchers from medicine, life sciences, public health, engineering and environmental sciences, to design ways to spark conversations about this major threat to public health. Because communication is the best weapon we’ve got.

Antimicrobial-resistant microorganisms, commonly known as superbugs, are microbes that have become less susceptible to the drugs we use to block them. Bacteria that can resist antibiotics are becoming increasingly common, and threaten to jeopardise our entire health system – a phenomenon described as a “ticking time bomb” by the UK’s Chief Medical Officer, Professor Dame Sally Davies.

In the past few years, AMR has featured heavily in the media, and governments have started to recognise how dangerous it can be. They are now implementing new tactical strategies and actively redirecting resources to win the war on superbugs. Of course, a considerable effort is being put towards encouraging research.

For example, in June 2015, Imperial launched the Antimicrobial Research Collaborative – an innovative, multidisciplinary approach to consolidating Imperial’s research in this area. The initiative adopts a ‘one-health’ approach, focusing on healthcare collaboration and communication across the College, and with Imperial College Healthcare NHS Trust and other academic, industrial and healthcare partners. It aims not only to develop new antibiotics and identify novel targets, but also to consider how society can better use antibiotics, prevent infection and minimise transmission and emergence of resistance.

More than one in ten courses of antibiotics now fail to clear the infection being targeted.

Superbug Zone

© Imperial College

Illustration: Joyce Hesselberth

Do superbugs and bacteria smell? If yes, why do they smell? Haringey Sixth Form @Haringey6thform

Haringey Sixth Form Centre

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#SUPERBUG ZONE

In the battle against ‘superbugs’, public awareness is as critical as cutting-edge research. The 2015 Imperial Festival provided an opportunity for Imperial researchers working on antimicrobial resistance to spark a conversation far beyond the borders of the South Kensington Campus. Dr Marianne Guenot explains more.

In the battle against ‘superbugs’, public awareness is as critical as cutting-edge research. The 2015 Imperial Festival provided an opportunity for Imperial researchers working on antimicrobial resistance to spark a conversation far beyond the borders of the South Kensington Campus. Dr Marianne Guenot explains more.
This approach reflects a big part of government and health agency plans – simply to talk about AMR. Raising awareness of the issue through public engagement is a key point in the published action strategies from the UK and the World Health Organisation. This is because making people aware and generating conversation around the issue will help us combat it.

Antibiotics were discovered in 1928 by Sir Alexander Fleming at Imperial’s St Mary’s Campus. Since then, they have become seen as a miracle drug – a cure for every infectious disease – even though they do not work on viral, parasitic or fungal infections. Even today, patients request antibiotics for many ailments, and will go as far as faking symptoms or refusing to leave the doctor’s office until they are prescribed. This has led to an estimated 10 million inappropriate prescriptions a year in the UK alone, imposing unnecessary evolutionary pressure on bacteria, which respond by becoming resistant.

Much of this stems from a basic misunderstanding of AMR. A recent Wellcome Trust study showed that while people are aware of AMR, they do not understand it or do not see it as a personal threat. Instead, they put it down to media scaremongering. “These misinterpretations about antibiotics are because people don’t understand the basics,” says Joana. “It’s not their fault. Even scientists didn’t understand them 20 years ago.”

“We designed the Superbug Zone as a journey into microbiology, to give people the tools they need to understand different aspects of this complicated issue,” says Joana. “We provided a strong focus on antibiotic resistance, but we also went beyond that. We compared bacteria and fungi. And we explained what bacteria are, where they live, how they live, how they become resistant, if they are good or bad and so on.”

Fifteen interactive research stands led visitors through a narrative, starting with the basic biology of antimicrobial resistant microorganisms, followed by an opportunity to see Fleming’s microscope and meet the curator of the Sir Alexander Fleming Museum. Researchers then talk with researchers and clinicians about their research. For example, Dr Luke Moon talked about how he has developed a phone app to help doctors prescribe antimicrobials more efficiently.

The Superbug Zone also provided an opportunity for people to challenge their sometimes stereotyped image of scientists. Several visitors confessed that the researchers they met looked very different from the clichéd image of the lab-coat wearing, bespectacled, famous nerd. Instead, they talked about microbes, communicating, friendly scientists, keen to present their work, and open about discussing controversial issues, such as DNA manipulation and animal research.

Events like these create direct lines of communication between public audiences and researchers. The transition from one million of the internet from one-way information provider to a platform for user-generated content also provides researchers with a way to propagate their science and to go where the audiences are. Not everyone lives in a university city, but they still deserve access to this kind of engagement, so social media is a great way to interact with them.

Microbiologist Dr Ronan McCarthy has been using Twitter for some time to reach broader audiences: “Twitter is a fantastic resource, which enables communication between fellow scientists and the general public on a truly international level,” he says. Ronan and I decided to use social media to publicise the Superbug Zone, and to use this project to learn about social media campaigning.

During the month before the Festival, we constructed a Twitter presence for the CMBI Postdoctoral Association, which we used to promote the Superbug Zone. With our new found experience, we then organised departmental workshop days to train other scientists. “The workshops generated a lot of interest in social media,” Ronan explains.

By posting science facts, teaser pictures and scientists profiles, we engaged with those who were curious about science, and got a brilliant response to our efforts. “The lastest outcomes include establishing a Twitter page for the CMBI Postdoctoral Association which now has almost 200 followers and is a fantastic tool to promote research done in the CMBI,” attests Ronan.

The Superbug Zone social media campaign has subsequently inspired us to kick off an initiative for all researchers to use Twitter to promote their science. “We provided a strong focus on antibiotic resistance, which is a microscopic subject, that it’s sometimes easy to lose sight of the bigger picture.”

The experience in management also provides a way for researchers to challenge theories with real-world perspectives. For example, I had a fascinating discussion with an experienced lawyer about the science and politics of drug development in the UK – a conversation I would probably have never had otherwise. Each encounter has the potential to bring some perspective to my research project.

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The use of animals in research is a vital part of the College’s work to improve human and animal health and welfare. It also deepens our understanding of biological systems.

We put considerable effort and thought into ways to reduce, refine and replace animal experimentation. We only work with animals where no other alternatives exist. The welfare of our animals is very important to us, and the College employs more than 60 staff to care for them.

We are also committed to explaining why animal research is still necessary and talking about the benefits it brings, and what we do to minimise suffering. Take a look at some of the design features in one of our research facilities aimed at keeping rats as healthy as possible, and protecting the staff who care for and work with them.

**LIGHTING**

Ambient lighting is programmed to dawn, day, dusk and night settings. Cages on the top row are shaded so they receive the same light levels as cages lower down.

**CAGE LABEL**

Each cage is labelled with the name of the lead researcher, project details, and the number of animals it contains. The label is barcoded with a unique ID, which is stored on a central computer system.

**VENTILATION**

Filtered air is ducted into the individually ventilated cages and is diluted as it is extracted, before being vented directly out of the building through the white ducts in the centre of the ceiling.

**CAGE STACKS**

Cage stacks are wheeled to this individually ventilated change station, where animals are transferred to the clean cages waiting on the left.

**PROTECTIVE CLOTHING**

Everyone entering an animal room must put on a cap, lab coat, disposable overshoes, gloves and face mask to protect both the animals and the handlers.

**FLOORS, WALLS AND CEILINGS**

These are made from impermeable surfaces for regular washing and sanitising.
Sir Charles Vernon Boys, FRSS (Royal School of Mines 1890) was an experimental physicist and prolific inventor. Like many inventors, Sir Charles relied on a healthy dose of serendipity and a little eccentricity. Whilst trying to measure the density of the Earth, he hit upon a different bullseye: the creation of fine silica fibre—a scientific breakthrough that has since reverberated across our everyday lives and led to the development of new technologies.

**How it all began**

Boys began his career in the 1880s, lecturing on thermodynamics at the Royal College of Science (now Imperial), but struggled to win the approval of one famous pupil.

And we quote...

“One of the worst teachers who has ever turned his back upon a restless audience... galloped through an hour of talk and bolted back to the apparatus in his private room.”

—H.G. Wells

Boys published a paper in 1887 in which he described “the method of electrical spinning” to produce nano-fibres. Sadly, his fibres did not have the mechanical properties desired so his quest continued.

And we quote...

“I was driven to the necessity of trying by experiment to find some new material. The result of these experiments was the development of a process of almost ridiculous simplicity.”

—C.V. Boys

**Calling usain Bolt...**

Boys melted rods of various minerals while making a hapless laboratory boy run away with the red-hot glowing end as fast as possible. Verdict? Thin, but not thin enough.

**Arrow dynamics**

So he constructed tiny arrows made of straw and a needle which he dipped into molten quartz (silica) before firing a miniature crossbow across two long rooms. He could tell the fibre was still there by attaching a piece of postage stamp to the end he could see, and pulling it across the laboratory from the arrow.

**How thin is thin?**

1/250,000 centimetres in diameter

So theoretically, a piece of quartz the size of one grain of sand could be stretched to form a fibre 1,600 kilometres long.

**The lasting impact**

Silica fibre has proven pivotal to the aerospace, automotive, telecommunication, and medical industries.

**Bending the rules**

In 1954, Narinder Kapany (PhD Physics 1955) demonstrated that light can travel in bent glass fibres leading to advances in endoscopic surgery.

And we quote...

“I was just a precocious kid taking a college physics course when one day the professor told us that light ‘always travels in a straight line.’ But that can’t be true, I thought — it must be bent sometime.”

—NARINDER KAPANY

**Smoke hot**

Space shuttle tiles are made of high-purity amorphous silica fibres which protect the orbiter (and crew) from extreme temperatures during re-entry into the atmosphere.

**1,260°C maximum temperature of shuttle on re-entry**

In 1984, Marc Garneau (Electrical Engineering PhD, 1973) became the first Canadian in space, aboard Space Shuttle Challenger mission STS-41G.

And we quote...

“It didn’t mean a desk job. The idea of space was just too big to resist.”

—MARC GARENAU

**Can you hear me now?**

Today, fibre-optic cables carry phenomenal quantities of data around the globe. In the future, Imperial researchers predict fibre optics could be used to create holographic communication devices.

And we quote...

“The future cannot be predicted, but futures can be invented.”

—DIYNOW OF THE-MOLLAHA, KOBELCO AEROSPACE AND IMPERIAL PROFESSOR, BRIAN GIBBARD

7.1 billion people in the world

6.8 billion mobile phone subscriptions
Q&A

SAFE or is it?

DR ROBERT EWERS of the Faculty of Natural Sciences is an ecologist investigating the impact of deforestation on local biodiversity in Borneo. His work is part of the Stability of Altered Forest Ecosystems (SAFE) Project, one of the world’s largest ecological experiments. He works in an area where 8,000 hectares of natural forest are being cleared to make way for a palm oil plantation. SAFE aims to develop approaches that minimise the ecological impact of such changes to the rainforest. Life in a tropical rainforest is quite different to Rob’s Silwood Park office, where Imperial caught up with him. We spoke about the sounds, sights, and experiences of doing field work 5,000 kilometres from home.

IMPERIAL: What is daily life like at the research station? Ewers: Camp is growing over the years; to begin with it was a tarpaulin roof and when that broke, you put another one on top! Now there are 60-70 people living on site, including local research assistants and visiting researchers, and we’re using materials made from local sawmill waste to build solid structures. We still mostly sleep in rows of hammocks, though. We have a kitchen and a cook and we’re using materials made from local sawmill waste to build solid structures. We still mostly sleep in rows of hammocks, though. We have a kitchen and a cook who prepares typical Malaysian meals – it’s mainly rice with some veggies and either chicken or fish. I think the food is great, but my wife prepares typical Malaysian meals – it’s mainly rice with some veggies and either chicken or fish. I think the food is great, but my wife makes the best rice.

IMPERIAL: Is it hard being away from home? Ewers: Obviously I miss my wife when I’m away, but since becoming a parent, it feels like a physical wrench to leave my son.

IMPERIAL: How much time do you spend in Borneo? Ewers: Some of my colleagues spend up to six months at the research station, but I’m usually there for about a month, two or three times a year.

IMPERIAL: Is there anything that really scares you? Ewers: The most dangerous animal we encounter is the elephant; research teams have been stranded in the forest for several hours because their route was blocked by a herd. It’s not a problem when we’re working on steep terrain because elephants can’t climb, but they do wander onto the road and through the flatter parts of the forest. People don’t realise that elephants will charge on humans – I’m not sure of the figure for Borneo, but in India around 100 people a year are killed by elephants. Our camp also gets quite a lot of miniature zombie apocalypse! We also have land leeches and they attract snakes. There are 160 different species of snake in Borneo, 24 of which are highly poisonous. We’ve seen king cobra and black cobras in our camp, which are both deadly. They usually get chased out with the aid of a big stick!

IMPERIAL: What experience do you like to recount to friends? Ewers: In the early days when we were cutting trails, being completely naive to the environment, I was walking behind the research assistants who were cutting through the brush. Suddenly they all started running in different directions, giggling, and I was just standing there dumbfounded and wondering what had happened. It turned out one of them had put on his pants inside out (a Malaysian machete) through a wasp’s nest! I was really lucky not to get stung that day!

IMPERIAL: What have you learned? Ewers: We’re monitoring all aspects of life (vegetation, small mammals, fish and insects) in the rainforest before, during and after the deforestation of the area. By measuring basic population parameters, like abundance and movement, we can track the true impact of the changes being made to the landscape.

IMPERIAL: When you’re home, what do you miss about Borneo? Ewers: Probably the sound of the forest – it’s like nothing else on earth. Cicadas create a din of white noise in the background, and the range of bird calls is extraordinary. The most unusual sound comes from gibbons – they call to each other over long distances, it’s a sort of whooping sound and it really travels!

IMPERIAL: Would you recommend working in the rainforest? Ewers: I really love it. I grew up being outside, hiking and camping in New Zealand and I’m glad I can continue to explore the outdoors as part of my job. All the stories the ecologists have come from being outside in the environment they study. Most of them will have an anecdote or two to share over a meal. One of my PhD students told me about an encounter with some wild monkeys. They were called something like ‘monkey mafias’ and were causing physical and mental agony as well as great suffering to the monkeys. In Summer 2015 they undertook a journey along the historic Silk Road, supported by Imperial’s Exploration Board, which has been sending intrepid students on unique and daring expeditions for nearly 60 years. In temperatures that threatened to rise above 50 degrees Celsius, the team faced climbing hills, climbing trees, trying to converse with our very limited Russian. At first we mistakenly thought we was telling us to be mistaken, until it became clear he was inviting us to stay for dinner and shelter,” said Chris. There were great challenges too, including being bitten by a huge tiger, coming across a group of leopards, and trying to converse with our very limited Russian. At first we mistakenly thought we was telling us to be mistaken, until it became clear he was inviting us to stay for dinner and shelter,” said Chris. There were great challenges too, including being bitten by a huge tiger, coming across a group of leopards, and trying to converse with our very limited Russian. At first we mistakenly thought we was telling us to be mistaken, until it became clear he was inviting us to stay for dinner and shelter,” said Chris. There were great challenges too, including being bitten by a huge tiger, coming across a group of leopards, and trying to converse with our very limited Russian. At first we mistakenly thought we was telling us to be mistaken, until it became clear he was inviting us to stay for dinner and shelter,” said Chris.

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Riding a small lift to one of the surgical wards at St Mary’s Hospital in London, I felt a bit like Alice falling down the rabbit hole – I wasn’t entirely sure what I was going to find when the doors opened. Surgical pioneer Professor the Lord Darzi of Imperial’s Faculty of Medicine had graciously agreed to be photographed operating in theatre. But I hadn’t been told what procedure he would be performing, so I was more than a little curious.

When the lift doors parted, I met the patient, a man in his 30s, looking remarkably cheerful on the trolley. After introducing myself and the photographer, I explained that we were there to document the surgery for the College’s photo library, and asked if he had any objections. Once consent forms had been signed, we had some time to spare and began to chat.

It was then that I enquired what sort of surgery the man was having. “Gastro-intestinal surgery” was his reply.

Politely asking the reason for the surgery, I was caught off guard by his response. “I swallowed a dessert spoon.”

“Excuse me? Did you say a dessert spoon?”

“Well yes. Rather, I swallowed two dessert spoons about ten years ago during my final week at university – after a bit of drinking to celebrate the end of my degree. One came out, and one never did. I decided it was probably time to get the other one out.”

BETH ELZER, Creative Director, Imperial

DAVE GUTTRIDGE, The Photographic Unit
More than 900 alumni and guests attended the Alumni Weekend in May, exploring the Imperial Festival in a special preview of the Research Zone, rediscovering Imperial landmarks on exclusive tours, and sharing their College with friends and family. Milestones alumni were the focus of reunion activities and alumni volunteers organised class reunions for eight different groups across the weekend.

ALUMNI WEEKEND

We had a splendid time meeting each other again and visiting old haunts.”
--- Drummond Modley (Civil Engineering 1985)

“So much science to choose from. The staff and students were all very easy to talk to. It helped ease some curiosity I had about other subjects than my own undergraduate course.”
--- Alumnus

IMPERIAL FESTIVAL

In May, 15,000 visitors descended on the South Kensington Campus to enjoy the livelier side of science at the annual Imperial Festival. The event combined exhibitions, talks and demonstrations of Imperial’s cutting-edge research, including a live impact experiment to show how craters have shaped the Moon’s surface and a visor that simulated a fly’s vision.

“Aside from Imperial’s academic record, we were attracted by its international community. My son can make friends with top students from all over the world – a fantastic opportunity for him to broaden his horizons.”
--- NaWeiyi Liu, whose son is studying for a BSc in Mathematics (2015 intake)

Students moved in to the new Woodward Building halls of residence.

“Students moved in to the new Woodward Building halls of residence.”
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COMMEMORATION DAY

Among the graduates, ICU President Lucinda Sandon-Allum was accompanied by her uncle, Dr Keith Bellamy, who is also an Imperial alumnus (Electrical Engineering 1965). Lucinda explained: “We had big celebrations for him that day as well, as he graduated exactly 50 years to the day. It was great that he could see me graduate at a milestone anniversary for him!”

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PRINCIPAL ADDRESS

Professor Alice P. Gast delivered her first address to Imperial staff, students, alumni and friends on 3 March. She explained her vision for the College and looked ahead to future opportunities, speaking of her admiration for Imperial’s “spirit of discovery, passion for research and education, and sense of purpose.”

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Recreating a memory

We’ve stayed in touch since leaving Imperial so when we discovered that we were both planning to return to South Kensington for the Alumni Weekend in 2015, we decided that in celebration of our reunion, we would recreate history by re-enacting our starting roles on the cover of a 1965 Imperial College Union (ICU – Desmond) and Royal College of Science Union (RCSU). We ourselves were President of the RCSU in 1965! Bar that we had after our first jump raised funds for the Notting Hill Carnival record, produced to help out-jump our 50-years-younger successors, and only wish that Yogi Bishop and Kish Sadjadvi could have participated as well. Of course, they may have feared that we would be too much competition for them! It was a relief to stumble over to the Celebratory Milestone Lunch for alumni celebrating 50, 60 and 70 year reunions and take a well-earned rest. The grand lunch was a little bit out of the pint at the Union Bar that we had after our first jump in 1965!

Alumni who graduated in a year ending in 1 or 6 are invited to reunite with their classmates to celebrate their milestone anniversary at the Alumni Weekend in May 2016. Alumni who graduated on either side of these years are also invited to participate in the gatherings. The Alumni Office can offer advice on formats, help classmates get in touch, connect alumni with their old department and help out with all the other things that can make the event special. Find out more by emailing alumni.weekend@imperial.ac.uk

CELEBRATE A MILESTONE REUNION AT THE ALUMNI WEEKEND 7–8 MAY 2016

40 years of reunions

Our group first met in 1975, when we were mostly residents in the Prince’s Gardens Halls – in particular Tizard Hall. Most of us graduated in 1978, but we range from 1977 to 1979. Tizard Hall had an active social scene, which our group helped to run, and we were invited to remain in residence during the 1978-79 academic year, to help continuity. In the following year, we all moved out to College-owned flats but continued our friendship.

Throughout our time at Imperial, anyone who was in our group was referred to as ‘Harry’. I confess I cannot remember now how this started – perhaps we had some difficulty originally in remembering everyone’s name! As a generic moniker, though, it actually proved to be a very useful device. For example, one could ask the group as a whole such questions as “What does Harry think?”

Before we graduated, we decided to set aside one weekend a year for a reunion, inevitably called Harry’s Reunion. We thought that it would not have much significance in the early years but might become more meaningful as the years went on.

And so it has – we have held this reunion every year since then. Over the years, it has grown to include spouses and families and is usually held in the UK – but we sometimes go abroad. This year, it coincided with the Imperial Festival and we were not far away, so we popped in to spend a very enjoyable afternoon back at the College.

Maybe we’ll have to come back again for our 40th – we’re very nearly there!

NEIL WINSCOM (ELECTRICAL ENGINEERING 1978)

Revisiting old haunts

The Physics Class of 1965 gathered in South Kensington in June 2015, almost 50 years to the day after finishing our final exam. Seventeen alumni made an early start to our reunion by meeting in the Eastside Bar on Friday, before 33 of us plus partners renewed our acquaintances in the Physics Building (now renamed the Blackett Laboratory).

The next day, we were welcomed by the Head of Department, Professor Jordan Nash, and were given a tour around some of the state-of-the-art research laboratories by Professors Leslie Cohen, Sergey Lobelev and Roland Smith, and Paul Brown, Mechanical Instrumentation Workshop Manager. Some of us remembered making screwdrivers in our first year, not all successfully and with no computers in sight!

Before lunch, we welcomed Emeritus Professor Sir Tom Kibble, then a young lecturer who probably had to endure paper dues from us, but now honoured for his work that helped to predict the Higgs boson. Meeting old friends and reminiscing followed, aided by some excellent catering. These few hours recreated the atmosphere of those three years in the early sixties when we were starting out.

On our way out, we called in at the Main Lecture Theatre. That was where all 120 or so of us first met for a lecture which was the first of a series on the Theory of Errors, given by Professor (subsequently Lord) Blackett.

Photographs were then taken outside with the surprise guest, famous machine Jesuit. A number of us went for a pint or a coffee at the nearby Queen’s Arms where we found an Electrical Engineering student. They were only celebrating 45 years or so.

EDWARD FORTUNE (PHYSICS 1965), MSC MECHANICAL ENGINEERING 1964, CARL JUUL-NIEMI/MADE (PHYSICS 1964), CHRISTINE BICKFORD/WILLIS (PHYSICS 1964), BC PHYSICS 1964) AND GORDON SELLES (PHYSICS 1963)
IN MEMORIAM

It is with regret that we announce the death of the following alumni of Imperial College and the constituent medical schools and Wye College. They are listed according to their year of graduation. When an alumni has obtained more than one degree from the College they are listed according to the graduation year of their first degree.

Obituaries are available online at www.imperial.ac.uk/alumni/obituaries. A dagger (†) indicates that the alumnus was also a member of staff. Printed copies of obituaries are also available on request from matters@imperial.ac.uk

1930s

Dr Ewing Johnston (DSc (Chem) Mechanical Engineering and Power 1935)
Dr Stanley Freeland (Chemistry 1935, PhD 1937)
Mr Alan S. Green (Civil Engineering and Surveying 1930, DSc 1936)
Mr Francis F. Bellingham (Chemical Engineering 1933)
Mr John R. Baume (Chemistry 1937, Chemical Technology 1939)
Mr George W. Holt (Civil Engineering and Surveying 1935)

1940s

Dr Derek A. Adams (Civil Engineering 1941)
Mr Herbert J. Anthony (MSc 1941)
Mr Willy U. Defeyter (MSc Engineering and Surveying 1940, DIC 1942)
Mr Warren S. Bishop (Physics 1941)
Dr Donald J. Brown (PhD Chemistry 1942)
Dr David B. Bovaird (PhD 1943, PhD 1945)
Dr Donald J. Brown (PhD Chemistry 1942)
Dr David B. Bovaird (PhD 1943, PhD 1945)

1950s

Prof Poul F. Abraham (PhD Metallurgy 1956)
Dr M. Ahmed Ali (Civil Engineering 1953)
Dr R. Parkins (Chemical Engineering Medical School 1955)
Dr Dennis Collatz (Chemistry 1957)
Dr Robert B. Bartholomew (Civil Engineering Medical School 1957)
Dr George W. Shillingford (Medical School 1957)
Dr David R. Smith (Civil Engineering 1957)
Prof H. Elton (Statistical Laboratory 1955, PhD 1959)
Dr George W. Shillingford (Medical School 1957)

1960s

Dr Frank E. Allen (Chemistry 1964, PhD 1967)
Mr Wim van Neste (Research (St Mary’s Hospital Medical School 1964)
Dr Manfred J. Bahr (Chemical Engineering 1965)
Dr David C. Hill (Chemical Engineering 1965)
Dr Richard L. Smith (Civil Engineering 1965)
Mr John C. Brown (Energy (St Mary’s Hospital Medical School 1965)
Dr Richard L. Smith (Civil Engineering 1965)
Mr John C. Brown (Energy (St Mary’s Hospital Medical School 1965)
Dr David C. Hill (Chemical Engineering 1965)
Dr David K. Harris (Civil Engineering and Chemical Technology 1965)
Dr David L. Smith (Chemical Engineering 1965)
Dr David C. Hill (Chemical Engineering 1965)

1970s

Mr Nicholas S. Astley-Buckland (Mining and Metallurgy 1970)
Mr Andrew F. Bull (Mechanical Engineering and Chemical Technology 1973)
Dr Kenneth Brown (Physics 1970)
Mr David T. Calvert (Chemical Engineering 1970, PhD 1973)
Dr William B. Cottrell (PhD Electrical Engineering 1970)
Mr David B. Cottrell (Chemical Engineering and Chemical Technology 1970)
Mr David B. Cottrell (Chemical Engineering and Chemical Technology 1970)
Mr David B. Cottrell (Chemical Engineering and Chemical Technology 1970)
Mr David B. Cottrell (Chemical Engineering and Chemical Technology 1970)
Mr David B. Cottrell (Chemical Engineering and Chemical Technology 1970)

1990s

Mr Mike Willmore (BSc (Civil Engineering 1993)
Mr Christopher J. Davis (Mechanical Engineering and Chemical Technology 1995)
Mr Stirling J. Walker (PhD Electrical Engineering 1995)
Mr William A. Robins (PhD Electrical Engineering 1995)
Mr William A. Robins (PhD Electrical Engineering 1995)
Mr William A. Robins (PhD Electrical Engineering 1995)
Mr William A. Robins (PhD Electrical Engineering 1995)
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2000s

Mr Wally J. Dobson (Biotechnology 2005)
Mr Patrick Carey (MSc Business School 2005)
Mr Robert E. Evans (Computing 2005)
Mr Thomas F. Allee (MSc Civil Engineering and Environmental Engineering 2005)
Miss Elizabeth Wrigley (MSc School of Public Health 2000)

2010s

Mr Tom A. Chen (Life Sciences 2010)

STAFF

Prof Robert D. Bryan (Emeritus Civil Engineering 1981)

Corrections

Imperial was incorrectly informed that Dr Sham D. Sreekumar (PhD Electronic Engineering 2009, Computing 2014) and Dr Hemant K. Inamdar (PhD Mechanical Engineering 1999, DIC 1997, DIC 1999) were deceased and they were listed in Memorial pages of issue 39. They are all in fact alive and well and we sincerely apologise for the errors caused by this error.

If you would like to discuss how to leave a gift to the College, we would love to hear from you. Please contact Imperial’s Head of Legacy Giving, Anna Wall at a.wall@imperial.ac.uk
A DEFINING MOMENT
In my attitude towards education came when I was 11 and living in Lagos, Nigeria. I knew a man there called Edward. He was 30. One day he said he had something he wanted to show me. He opened an exercise book and proudly showed me his work: he was learning to read and write. Edward taught me that access to education is something that can never be taken for granted. At Imperial, people not only have access to education, but are immersed in an atmosphere of excellence, and benefit from the highest standards of training.

From speaking at career events for students to inspiring a crowd of fellow alumni during the Alumni Weekend, there are so many different ways for you to make an impact on Imperial’s future and help us to build a vibrant alumni community.

Alumni volunteers are key to maintaining a global network of groups, associations and Professional Interest Networks that connect alumni to each other across the world. Alumni also bring friends and classmates back together. The annual Alumni Weekend in May is the focus for milestone celebrations and eight class reunions took place at the 2015 event. These gatherings would not be possible without dedicated alumni volunteers who work with us to bring together former classmates and re-live fond memories at reunions.

From answering a few questions by email to providing ongoing advice, alumni have been sharing their years of experience with current students, giving them insight into the working world and guiding them through their first steps as part of the Careers Service’s Ask an Alumnus and mentoring schemes.

We also offer our alumni the opportunity to tap into the best and brightest minds. We encourage alumni to consider getting in touch with Imperial when building their internship programmes or for their employment opportunities.

You know you have moved on but your memories of your cohorts are still as they were 30 plus years ago. Once you get over the initial shock, we were back to our old selves — laughing at old memories, sharing confessions and re-igniting friendships.

— Smadar Gabbay

Celebrating Milestone Reunions

On a Saturday afternoon in June, four separate reunions took place across South Kensington, from the Physics Class of 1965 who were celebrating their 50 year milestone, to the Chemical Engineering Class of 1995 who gathered with their families to mark 20 years since their graduation.

All four reunions were organised by alumni volunteers who reached out to current alumni so we can take steps to develop a more connected community. Do let us know if you don’t get our monthly e-bulletins. You may be in touch with classmates or alumni that we have lost contact with. If you don’t get our e-bulletins, please encourage them to contact us by emailing alumni@imperial.ac.uk.

Nicola Pogson

Share Expertise and Provide Career Advice

At Imperial, people not only have access to education, but are immersed in an atmosphere of excellence, and benefit from the highest standards of training.

We regularly contact our international groups and other alumni to ask them to talk to students at UK and international recruitment fairs. Alumni around the world also regularly attend pre-departure events to meet students and help them prepare for life at Imperial.

There is nothing more rewarding than talking to prospective students and taking them from a ‘maybe’ position to a 100 per cent yes, thus the case for the ‘position’.

— Suraj Bassi

Rima Sen-Mormont (BSc Chemistry and Management 1995) hosted a gathering of alumni in Paris to discuss contemporary challenges for sustainability.

Make the most of being an alumnus

As an Imperial alumnus, you are entitled to a range of benefits and discounts.

Register for a free online account to set up your exclusive alumni email address ending in @alumni.imperial.ac.uk, search our professional directory for friends and classmates, update your contact details and more. Imperial’s state-of-the-art sports centre based in South Kensington, and many more venues continue for the rest of your career.

Receive some discounts on further study, such as a 10% discount on short courses and evening classes at Imperial and up to 20% on some Business School postgraduate programmes.

Enjoy discounts on campus accommodation during the summer, membership of Tube, Imperial’s state-of-the-art sports centre based in South Kensington, and many more rates in the University’s conference facilities.

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“Are you coming to Standard? I’m an Imperial class of ‘11 grad doing my MBA at gub, would love to meet more alumni!”
— Constantinos Bikes (Medicine 2003) on Facebook

“Tidally-winking down Oxford Street. Peaceful.”
— Martin Babu (BEng Mechanical Engineering 1967) on LinkedIn

“Anyone remember the sponsored streak naked run around the Albert Hall? 1976 I think…”
— Jeremy Walker (Electrical Engineering 1976) on LinkedIn

“Student Ellie Johnstone and alumnus Jack Bednars just had their 20th anniversary abroad in the US. Congratulations, Jack!”
— Suprasan Thampoo (PhD, Anthropology 2012) on LinkedIn

“Alumni shared their best RAG Week memories on our LinkedIn pages. What is yours?”
— Christopher Ehrman (BSc Physics 1965, PhD 1969) on Twitter

“Can’t make it to campus? Don’t panic – many of our public events are now live-streamed or filmed so you can enjoy them anywhere.
www.youtube.com/user/imperialcollegevideo

STAY UP TO DATE
Stay up to date with Imperial news, find old friends, learn about events and make connections with our alumni social network groups.

alumni.imperialcollegelondon
bit.ly/imperial-alumni-LinkedIn-group
@imperialcollege

SHARING MEMORIES
Alumni shared their best RAG Week memories on our LinkedIn pages. What is yours?

“Alumni Dejan Mitrovic’s #Gradesign365 is one of projects on show at next week’s #impfringe”
— Lucas Breunig (BSc Environmental Technology 2012) on Facebook

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JOIN THE PRESIDENT
Hear about some of the exciting new initiatives happening at Imperial directly from President Alice P. Gast at one of our special local events. Connect with other alumni and expand your network.

San Francisco
9 December
Join President Alice P. Gast for an evening reception in San Francisco, hosted by alumnus Michael Birch (BSc Physics 1990) and his wife Xochi at their private residence in Pacific Heights.

Kuala Lumpur, Malaysia
7 January • TBC
Singapore
8 January • TBC

ALUMNI ON CAMPUS

Jezbel’s 100th Birthday
9 April
Imperial mascot Jezbel the fire engine celebrates her centenary in style with day-long events and a black tie dinner.

2016 Alumni Weekend
7–8 May
Celebrate milestones, meet old friends and catch up on the latest in Imperial research during this special weekend that runs alongside the Imperial Festival.

2016 Imperial Festival
7–8 May
Save the date for a packed weekend programme of hands-on activities, talks and performances for all ages.

SPECIAL EVENTS

Calgary, Canada
28th Schrödinger Lecture-47
Professor Sir Gordon A. W. Mitchell presents the 28th Schrödinger Lecture on achieving global food security.

South Kensington Campus
19 January
Can we feed the world sustainably?
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#impgrad
www.imperial.ac.uk/gradu16

Put Your Degree To Work With Imperial’s School of Continuing Education:

degree.imperial.ac.uk/career

GRADUATION

Postgraduate Awards Ceremonies
4 May
Royal Albert Hall
Postgraduate students return to South Kensington to celebrate completing their studies and joining the ranks of Imperial alumni.

Spring Ceremonies
9 April
Royal Albert Hall
May

Celebration for students completing their postgraduate degrees at Imperial College London.

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IMPERIAL FESTIVAL
Each year this celebration of the College’s research captures the imagination of public audiences, alumni, staff and students. Make a date with discovery in 2016 at this FREE event for all ages, including talks, hands-on research demos, workshops, and performances.

- Sharpen your thinking in spirited debate and intelligent discussion
- Talk with 500+ Imperial scientists and engineers
- Take part in experiments
- Inspire scientists-in-the-making with a programme of family-friendly activities
- Sign up for news and updates at festival@imperial.ac.uk

SAVE THE DATE
7 – 8 MAY
IMPERIAL FESTIVAL + ALUMNI WEEKEND 2016

ALUMNI WEEKEND
Discover a line-up of additional activities and a great base from which to explore the Festival for everyone who has studied at Imperial.

- Take advantage of this unique opportunity to catch up with recent advances in your degree subject, share your university with friends and family, and reconnect with your department, the College and classmates.

IT’S BEEN HOW LONG?
If you graduated in a year ending in 1 or 6, this is a great opportunity to reunite with your peers and celebrate your milestone anniversary during the Alumni Weekend. Alumni who graduated on either side of these years are also invited to participate.

- We can take some of the work off your hands and help you reach out to your friends and classmates, even those you’ve lost touch with, as well as help you to get the most from your reunion and reconnection with the College.

Contact us now: alumni.weekend@imperial.ac.uk
+44 (0)20 7594 6138

“ A great, fun day”
Tim Griggs (Materials 1974)

“ Fascinating event”
The Guardian

#impfest and #impalumni
www.imperial.ac.uk/festival ➔ www.imperial.ac.uk/alumni-weekend