Imperial College London

reporter

Issue 301 ▸ 16 March 2017

Sharing stories of Imperial's community

Generation Enterprise

As the inaugural Enterprise Week approaches, see how Imperial is helping students realise their ideas

PAGES 8-10, BACK PAGE

GIFT OF CHANGE

Imperial global health charity gets $13m donation

PAGE 3

STAFF CELEBRATION

Showcasing Women@ Imperial week

PAGES 3, 12

GET INVOLVED!

Call for volunteers for May's Imperial Festival

PAGE 14

EDITOR'S CORNER

Space to grow

This issue is about enterprising students and early career researchers. But it's not just about high flying start-ups. When I spoke with Oscar Ces and Nick Jones about Imperial's Advanced Hackspace (p10) – they said they thought of it as a **'library of the future'**. I wasn't exactly sure what that meant at first, but on reflection I think it emphasises that *all* students should feel they can delve into the Hackspace facilities and tap into the acquired knowledge of that extensive network – even if they don't have a viable commercial idea or see themselves as entrepreneurs. The Enterprise Lab also espouses those principles and is as much a **community space** for like-minded people to gather as it is an ideas factory. It's really important we equip students with the broad skills to face a future jobs market which is constantly changing in response to the rise of automation and artificial intelligence (p6).

ANDREW CZYZEWSKI, EDITOR

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New Excellence Fund projects announced

In her March 2016 President's Address, Professor Alice Gast highlighted the importance of excellence in teaching and research. She dedicated £1 million per year to reward excellence while promoting courageous and innovative ideas in research and teaching.

This is part of Imperial's strategic commitment to invest new funds to pursue new and risky ideas. The Excellence Fund for Learning and Teaching Innovation and Excellence Fund for Frontier Research are both outcomes of this strategic aim.

This year's teaching funding is being given to projects supporting innovation in the use of technology enhanced learning and innovation in assessment and feedback.

Professor Buitendijk, Vice-Provost (Education) said: "This funding will give our most innovative teachers the time and space to be bold, to test new methods and to learn together with students.

"As we develop and start to implement our new Learning and Teaching Strategy over the coming months and years these kinds of teaching innovations and evidence-based approaches are going to become central to what we do at the College."

> "This funding will give our most innovative teachers the time and space to be bold, to test new methods and to learn together with students."

The six successful projects (see box) will each receive up to £50,000 a year for the next two years.

Meanwhile, the Excellence Fund for Frontier Research has been established by Imperial to support research ideas that are potential breakthrough programmes, which could put the College in a leadership position. Three teams have been selected to receive £250,000 each to kick-start their research projects (see box).

Professor Nick Jennings, chair of the selection panel and Vice Provost (Research), said: "This scheme is an excellent example of the College acting courageously and funding high-quality frontier science. These projects may be real game-changers and I look forward to seeing their progress in the coming months and years."

—JON NARCROSS AND COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS

Teaching projects

CHEMTRACK aims to create a programme of chemistry education, placing students at the centre of the design and implementation of the laboratory activities.

THE IMPERIAL COLLEGE CONCEPT COLLABORATORY (ICCC) will act as a repository for concept-based education at Imperial.

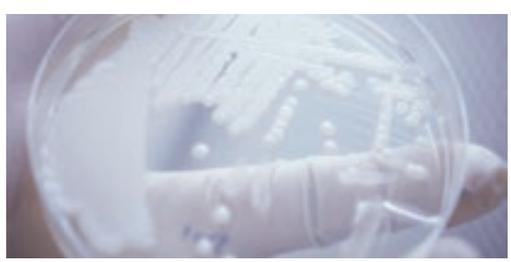
IMPLEMnT is a digital platform incorporating a toolkit to empower teachers to create original resources that support blended learning.

DATA ANALYSIS OF ONLINE LEARNING brings together existing data analysis expertise and technologies in Mathematics and Chemistry with data created through the Business School's online learning platforms.

MAKING TOMORROW'S DOCTORS TODAY'S TEACHERS enlists third year medical students in the process of course and curriculum design.

ONLINE INTERACTIVE VISUALISATION creates a suite of online interactive visualisations for explaining key concepts within Physics and other STEM subjects.

More information: bit.ly/ex-ed



Research projects

CREATING 3D MATERIALS USING BIOLOGY combines 3D printing and synthetic biology to create new types of materials in made-to-order shapes, sizes, biological functions and chemical properties.

ADAPTING OIL AND GAS IMAGING FOR HEALTHCARE could lead to cheaper, faster and more accurate clinical diagnoses.

SEARCHING FOR QUADRUPLEXES hopes to determine the existence of a form of DNA that has four strands instead of the usual two and may have a unique ability to protect the ends of chromosomes.

More information: bit.ly/ex-res

Life changing gift

A recent $13.5m donation will support an Imperial initiative working to improve the health of some of the world's poorest populations.

The gift, one of the most generous in the College's history, comes from Good Ventures – a philanthropic foundation whose mission is to help humanity thrive.

This support will help the Schistosomiasis Control initiative (SCI), which is based in the School of Public Health the College, to treat up to 27 million people with schistosomiasis and intestinal worms across East, West and Central Africa.

Schistosomiasis is one of the most prevalent parasitic infections – second only to malaria in terms of impact. It can cause severe pain and life-long disability, and left untreated can lead to the development of life-threatening conditions such as bladder cancer or liver damage.

However, these illnesses can be prevented and eliminated through the administration of inexpensive or donated medicines. Treatment costs as little as 30 pence per person.

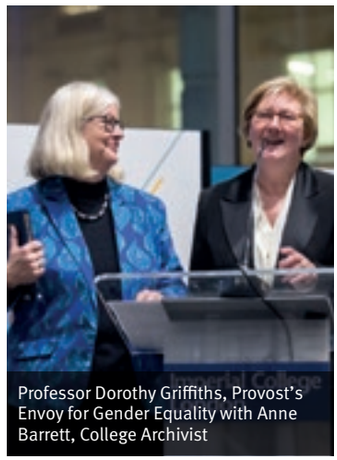
Imperial's President Professor Alice Gast said: "A gift of this magnitude has enormous impact on Imperial's ability to address the world's great challenges. We are incredibly grateful to Good Ventures for their generosity, which will greatly enhance our work with international partners to turn cutting-edge research into life-saving solutions for the world's poorest communities."

Wendy Harrison, Executive Director of the SCI, said: "We are incredibly grateful to Good Ventures for their generosity and support. This is a testament to our strong track-record, the effectiveness of our programme and the importance of our mission. With this additional funding, SCI will be able to expand coverage further to reach an even larger number of affected communities"

—DEBORAH EVANSON, COMMUNICATIONS AND PUBLIC AFFAIRS

Imperial celebrates its female staff and students

This month saw the College celebrate Women@Imperial Week with two special events, a panel discussion on challenges for gender equality, and a celebratory reception.



Professor Dorothy Griffiths, Provost's Envoy for Gender Equality with Anne Barrett, College Archivist

Chaired by alumnus Anjana Ahuja, journalist for the *Financial Times*, the panel took questions and shared their experiences and offered advice to individuals and organisations wishing to do more to support women.

After the panel discussion, staff and students gathered in the College Main Entrance for a celebratory reception, with the chance to take in the exhibition of photographs and archive material highlighting the achievements of women at the College (see page 12).

The reception also provided the opportunity to launch a new book from the College's Archivist, Anne Barrett, a celebration of women past, present and future at Imperial.

Addressing the reception, Imperial's Provost, Professor James Stirling, said: "Looking back, it's been a good year. Over the last 12 months we have renewed our institutional Athena SWAN Silver Award, embedded the 'Know Your Pool' search committee initiative to increase the number of female applicants for jobs, and shared our family friendly policies and support more widely. Indeed we were recognised last year as one of the Top 30 Employers for Working Families.

"So, much to celebrate indeed, but still so much to do."

Rachel Blythe, Deputy President of Finance and Services at Imperial College Union, said: "Women@Imperial Week provides us with an enormous opportunity to celebrate and acknowledge our phenomenal female staff and students leading in their fields of academia, excelling in sports, representing in media and the arts and coordinating social enterprises. There really is no limit to what women at Imperial can achieve."

—ELIZABETH NIXON, COMMUNICATIONS AND PUBLIC AFFAIRS

in brief

New Business School Dean

Imperial has named internationally renowned innovation scholar Professor Francisco Veloso the new Dean of its Business School. Professor Veloso joins Imperial from the Católica Lisbon School of Business and Economics, Portugal's leading business school, where he has served as Dean since 2012. Professor Veloso is a leading authority in Innovation and Entrepreneurship, whose research has focussed on how firms and regions develop and leverage science and technology for economic growth. Professor Veloso said: "I am truly honoured with this appointment and delighted to join such a world class institution. The growing importance of technology-driven innovation and entrepreneurship across all business areas and fields is creating opportunities that fall squarely into the School and College strengths."

Professor Veloso (right) helped the Católica Lisbon School rank among Europe's top 25 Business Schools

Grand Designs

Improving construction materials to make infrastructure more sustainable and durable will be the focus of research at a new £5.4 million lab. The Advanced Infrastructure Materials Laboratory (AIM) will be the centrepiece of a new Imperial Centre for Infrastructure Materials where researchers will develop a new generation of construction materials that are more durable and robust, able to withstand ever heavier loads, and more cost effective to manufacture and maintain.

Microscope magic

A facility for cryo-electron microscopy is being established by a consortium of London institutions. Cryo-EM is a technique that allows scientists to image biological molecules in their natural state (see also page 5). The facility, funded by the Wellcome Trust, is planned to be situated at the Francis Crick Institute and led by Imperial researchers, alongside colleagues from The Institute of Cancer Research, King's College London, and Queen Mary University of London.

Cool down

Imperial is to invest in air conditioning for the Central Library, representing a substantial commitment to the College's academic and student experience.

Student feedback has highlighted problems with temperature control and poor ventilation in the Central Library, and this project seeks to address these issues and improve the working environment.

The capital funding investment from the College will see new cooling and ventilation systems installed in order to improve environmental conditions.

Chris Banks, Director of Library Services and Assistant Provost (Space), said: "We know that the library continues to be an essential component of student experience, and I'm delighted the College has given the go-ahead for this project. We have carefully planned the project so as to minimise disruption to students as much as possible. Works currently underway are an essential component of this and those will stop entirely in April for the revision and exam period."

The College's Estates Development and Projects team are managing the delivery of the construction works. Enabling works commenced in January 2017, and the project is expected to be completed in autumn 2018.

Nas Andriopoulos, President of the Imperial College Union, said: "For several years the Union has been representing students' views on the library environment to College, and it has been through working with College that the opportunity to improve conditions has come about. It is great to witness the College listening to its students, really understanding their needs and investing in their experience."

—ELIZABETH NIXON, COMMUNICATIONS AND STUDENT AFFAIRS

Imperial recognises education research at prize giving celebration

The annual event celebrates the achievement of the latest cohort of teaching staff at the College who have undertaken one of the Educational Development Unit's (EDU) PG Cert, PG Dip or MEd university learning and teaching (ULT) programmes.

Prizes were handed out during the event to celebrate specific achievement on each of the programmes as well as a number of presentations from staff who had undertaken the courses on their research and findings.

Presenting the awards, Professor Simone Buitendijk, Vice-Provost (Education), said: "One of the things that I've enjoyed since I started here back in August was meeting the many wonderful and dedicated staff at Imperial focussed on education.

"Not only are so many of our staff dedicated to doing good teaching but also actually research their teaching practice, including on our EDU programmes that we're celebrating here tonight."

Each year the most outstanding candidate on each programme is selected to receive an award in recognition of their performance on the programme.

This year's prize winners are: Pete Fitch (PG Cert, Earth Science and Engineering), Emma Passmore (PG Dip, Earth Science and Engineering), Elizabeth Hauke (MEd, Centre for Languages, Culture and Communication).

Emma said: "Receiving the award felt great. It was a real validation that I'd produced something meaningful, and engaged with the course. Education development is so important as it underpins everything we're trying to achieve as teachers. It provides a richer, more well-rounded learning environment for our students."

Emma Passmore

—JON NARCROSS, COMMUNICATIONS AND PUBLIC AFFAIRS

Applications are now open for the ULT entry level PG Cert. If you are interested in any of the Education Development Unit's programmes you can find out more on their website: **bit.ly/Imperial-EDU**

Music to our ears

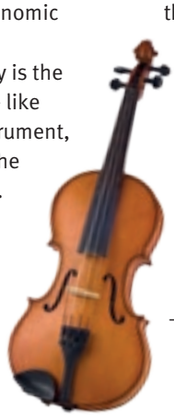
A joint venture between the Royal College of Music and Imperial was awarded £1 million for a new research project on the arts and health.

The Imperial-RCM Centre for Performance Science will explore the impact of the arts and culture on health and wellbeing, from individual, social, and economic perspectives.

One area the team will study is the link between cultural pursuits – like joining a choir, learning an instrument, or attending art classes – and the health and wellbeing of society. The work will be funded by the Arts and Humanities Research Council (AHRC).

Smaller arts intervention studies have previously found links between cultural participation, good health, and lower mortality. However, to date there have been few larger-scale studies involving the arts across the UK. This study will gather new empirical and qualitative data from people over three years

Co-investigator of the study Professor Robert Perneczky (Public Health) said: "We are interested in what hidden benefits the arts and culture may have in terms of improving health. If there are tangible benefits, there may be a case to be made for integrating them more fully within social and health services. It be will interesting to see if arts and culture can increase our resilience against age-associated changes of wellbeing and cognitive performance, a phenomenon known as cognitive reserve."



—CAROLINE BROGAN, COMMUNICATIONS AND PUBLIC AFFAIRS

media mentions

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Digital degrees come of age

FINANCIAL TIMES ▸ 05.03.2017

Most people completing an MBA from a leading institution still take a career break in order to study on campus, the *FT* writes. There are signs, however, that the online MBA could become the most popular option eventually. Imperial College Business School launched its fully online global MBA (GMBA) in January 2015. Now, with 220 students enrolled, it is the London school's biggest course. Most GMBA students would not consider a conventional MBA, says David Lefevre (Business School), director of Imperial's Edtech Lab. "There is a growing proportion of MBA students who routinely work and collaborate online and across time zones," he said.

We're going to need a bigger bowl

THE TIMES ▸ 23.02.2017

If you find hitting the five-a-day target tricky, look away now. Scientists have concluded that ten portions of fruit and vegetables is the real goal. Anyone wanting the maximum protection against heart disease, cancer and early death should eat 800 grams of fruit and vegetables a day, double the government's advice, a large study has shown. Dr Dagfinn Aune (School of Public Health), told the *Times*: "Our results suggest that although five portions of fruit and vegetables is good, ten a day is even better."

We are slowly gassing ourselves to death

EVENING STANDARD ▸ 17.02.2017

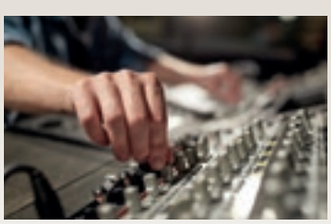
Professor Ara Darzi, Director of the Institute of Global Health Innovation, writes in the *Evening Standard*: "The air we breathe is critical to life. But we are slowly gassing ourselves to death. London breached the annual air pollution limit for the whole of 2017 in the first five days of the year. It is also about improving the quality of all our lives. That much we owe our children."

Beatles had virtually no influence on pop

DAILY MAIL ▸ 25.02.2017

They are the biggest band in pop music history and usually credited with being the most influential. But in reality The Beatles were an average group who did little to change the musical landscape – at least according to one academic, who claims to have the science to back it up, the *Daily Mail* reports. Professor Armand Leroi (Life Sciences) used computer algorithms to analyse singles from every major band between 1960 and 2010 to see how they deviated from the musical norm. And he plotted each on a vastly complex network diagram, with each band linked to who they influenced and colour-coded by genre. After crunching the data, Dr Leroi concluded that the creators of Yesterday, Eleanor Rigby and I Am The Walrus, 'musically weren't that important'. Instead, he said it was The Kinks, The Who and The Rolling Stones who had the most influence, paving the way for punk.

awards and honours



ENGINEERING

Grammy for alumnus

One of Imperial's most distinguished alumni, Alan Dower Blumlein, has been awarded a posthumous Grammy Award for technical services to music. Born in 1903, Blumlein was one of the most prolific inventors of the 20th century, whose work transformed telecommunications, television and radar. Arguably the most notable of his many achievements is his invention of stereo recording, which has transformed the way we listen to sound. He grew up in London, graduating from Imperial with a first class degree and beginning work at International Western Electric in 1924. While there, he performed important work on the reduction of cross-talk, and developed measuring equipment that helped establish standards for long-distance telephony.

COLLEGE

French honour

Professor Alice Gast has been appointed a fellow of the prestigious Académie des Technologies. The Académie des Technologies, founded in 2000, is the newest of the French academies. Its focus is on emerging technologies and their impact on society, the environment and economic growth. Professor Gast was one of 12 new fellows be honoured at a ceremony held at the Grand Palais des Champs-Élysées on Tuesday 7 February. It is one of the highest accolades in French academia. Imperial is the UK's most international university and has especially strong ties with France. Over the past ten years, more than 8,000 papers have been published in collaboration between Imperial and researchers based at French institutions.

ENGINEERING

Revolutionary biologist

Imperial's Professor Marin van Heel has been awarded the Wiley Prize in Biomedical Sciences for the development of a key imaging technology that revolutionised biology. Emeritus Professor van Heel (Life Sciences) shares the $50,000 prize for his part in developing cryo electron microscopy (cryo-EM), a technique that allows scientists to image biological molecules in unprecedented detail. He shares the prize with Dr Joachim Frank from Columbia University and Dr Richard Henderson from the MRC Laboratory of Molecular Biology in Cambridge (also, see page 3).

Rise of the 'automatic neuroscientist'

Neuroscientists at Imperial have highlighted the benefits of using machine learning techniques in real-time brain imaging studies.

They argue that using artificial intelligence (AI) to automatically design the best possible experiment, could improve the results from functional magnetic resonance imaging (fMRI) studies, which create images of activity levels in different brain regions.

The complexity of the brain means that imaging produces vast amounts of data. Researchers must therefore decide on a small number of variables for testing before the actual brain scanning starts, even though they might later realise that other conditions would have been more appropriate. This leaves a relatively narrow scope of potential research questions per study, and limits how far the findings can be applied to various patients.

Researchers can also unintentionally introduce human errors to their work while looking for meaning and patterns in data.

Final year PhD student and lead author Romy Lorenz (Medicine) said: "These issues could be causing the reproducibility crisis in cognitive science today, where researchers find they cannot reproduce the same results as previous studies despite following the same methods."

Lorenz and team argue that applying Bayesian optimisation, the statistical technique that forms the basis of their machine learning approach, to neuroscience studies could greatly increase the efficiency of data analysis in the field.

"Using AI techniques while collecting brain data at the same time will greatly improve the reliability of the findings," Lorenz said.

—CAROLINE BROGAN, COMMUNICATIONS AND PUBLIC AFFAIRS

Better than human

Machine learning enables computers to learn from data to make predictions, which are used to inform and improve subsequent decisions. The technique is central to technology such as smartphone personal assistants like 'Siri', self-driving cars, and speech recognition systems. The researcher creates and programs rules which let the computer identify patterns in a dataset, and then focus on those patterns without the need for further human instruction. In doing so, the computer can learn from and make decisions based on this data. Dr Robert Leech (Medicine), said: "Much like a human, machines programmed this way can use past experiences to improve their performance in future. The big difference, however, is that the machine will be able to do this much faster in the lab; we know it as 'the automatic neuroscientist'."

Created in Imperial's Robot Intelligence Lab under the direction of Dr Petar Kormushev, Robot DI NIRO is learning how to interact with the physical world

Shining a spotlight on the dark, unexplored regions of the genome

Researchers at Imperial have found that so-called 'junk DNA' could play a role in diabetes.

The human genome is enormous, containing billions of 'letters' of genetic code. But among the thousands of genes which code for vital proteins, hidden in plain sight are much vaster chunks of non-coding junk DNA, previously thought to have no function.

Now an international team has found that some of this junk DNA has an important function in the pancreas, regulating key genes in the insulin-producing beta cells, which help to balance blood sugar in the body.

"There's only a tiny proportion of the genome that codes for proteins. The rest of it was largely uncharted until a few years ago," explained study lead Professor Jorge Ferrer (Medicine). "But this non-coding DNA is now known to harbour many functional elements which regulate other genes."

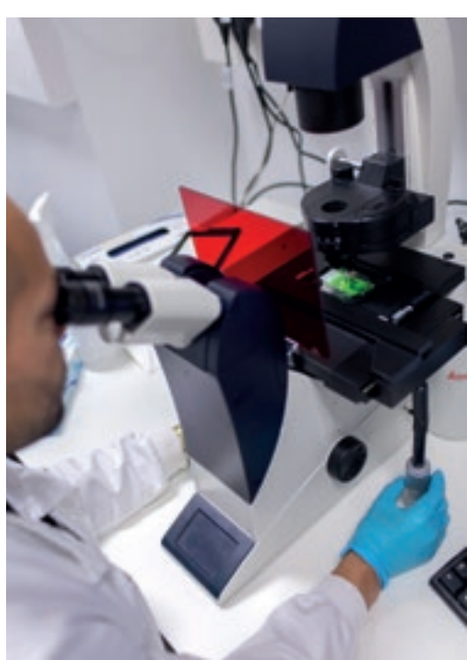
Using cell cultures and tissue samples from patients with type 2 diabetes, the team analysed the activity of genes within beta cells.

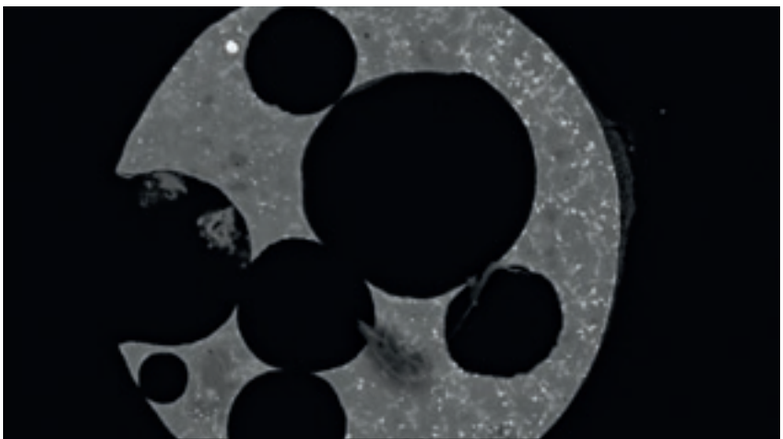
One junk region in particular, called PLUTO (PDX1 Locus Upstream Transcript), was found next door to an important controlling gene (or transcription factor) called PDX1, which helps beta cells to mature and produce insulin.

The researchers found that PLUTO changed how the DNA around it folded. These structural changes include the region around PDX1, so enhancing the activity of this key controlling gene and having knock-on effects for the beta cells.

"PDX1 is essential to countering the body's growing resistance to insulin, so these genes are really important in terms of human diabetes – both inherited and acquired," said Professor Ferrer.

—RYAN O'HARE, COMMUNICATIONS AND PUBLIC AFFAIRS





Microscopic view of a cosmic dust particle. The black circles are air filled pockets called vesicles

Space particles deploy parachutes on fiery descent

Some cosmic dust particles are able to fall to Earth without burning up in the atmosphere by effectively changing shape to act like parachutes – according to Imperial research.

Cosmic dust particles originate from comets and collisions between asteroids; they can hit the Earth's atmosphere at speeds of nearly 40,000 kilometres per hour. Many of these particles are vaporized, yet, some make it through to Earth's surface, providing microscopic records of some of the earliest events in our solar system.

Study author Dr Matthew Genge, (Earth Science and Engineering) found that cosmic dust particles containing water-rich minerals survive atmospheric entry more easily than water-free cosmic dust. He then developed a mathematical model to understand the conditions experienced by both water-rich and water-free particles during their atmospheric entry to see what happens when particles suddenly expand.

During the descent through the Earth's atmosphere, the dust turns into little droplets of molten rock, known as magma, and water inside it boils. This turns the dust into a magma foam bubble, which expands and becomes lighter and cooler, acting like a parachute.

Dr Matthew Genge said: "Think of microscopic rice bubbles made of molten rock and you get the picture about what this cosmic dust looks like. The results were surprising.

Dust to dust

Around 4,000 tonnes of dust from space lands on Earth every year. Cosmic dust can come from different sources. For example, they may have been left over since the formation of our solar system or created when asteroids smash together in space. These particles are tiny, roughly around 0.01 millimetres in size, and have been falling to Earth since it was formed billions of years ago. Analysing their chemical and mineral content can tell scientists about how the early solar system has evolved. Dr Genge and his team previously discovered that cosmic dust can be found in urban places such as on rooftops in major cities, and not just in isolated pristine environments such as Antarctica. Dr Genge also discovered that much of the cosmic dust in our solar system originates from an asteroid belt located between Jupiter and Mars.

The sudden swelling of particles and decrease in density acts like a parachute slowing them quickly and decreasing their temperatures by 100 degrees Celsius."

He added: "Cosmic dust provides us with direct evidence of events that may have happened in our solar system billions of years ago. However, our study is showing us that water rich particles may be more likely to survive entry compared to dry ones. Scientists now need to take this into consideration when they are re-constructing ancient cosmic events."

—COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS

Formula for success

Technology used in Formula One racing to recover energy from braking will be installed in trucks as part of a pilot project.

The aim is for the technology to make heavy goods vehicles – which account for 30 per cent of UK road carbon dioxide emissions – more fuel efficient and environmentally friendly by reducing pollution and noise levels.

Project lead Dr Marc Stettler (Civil and Environmental Engineering) said: "There has been a rising awareness and growing number of drivers switching to hybrid and all-electric vehicles. However, the freight industry still relies heavily on diesel combustion engines. It's vital that we find commercially viable options for the industry that are affordable and have the potential to dramatically reduce the amount of carbon dioxide and air pollutants emitted on our roads."

> "It's vital that we find commercially viable options for the industry that are affordable and have the potential to reduce the amount of air pollutants emitted on our roads"

The newly formed £2.2 million consortium includes Imperial, Howdens Joinery Co, Sainsbury's Supermarkets and Alternatech and Adgero. The trial will involve the installation of a Kinetic Energy Recovery System (KERS) on 20 heavy goods vehicles used by Sainsbury's and Howdens to deliver their goods to their stores across the UK.

In congested urban environments vehicles frequently stop and start as they move in traffic. This takes a significant amount of energy to accelerate a vehicle each time, especially heavy trucks. With KERS, the energy from a moving vehicle is converted into electricity during the braking phase and stored. It is then used to help the diesel engine accelerate the next time the vehicle moves forward – using less fuel overall and potentially reducing noise emissions.

—COLIN SMITH, COMMUNICATIONS AND PUBLIC AFFAIRS

Generation Enterprise

Supporting Imperial students and early career researchers to realise their ideas

Some of the world's most famous entrepreneurs were university students who never finished their degrees and dropped out to follow their business destinies – Bill Gates, Steve Jobs, Mark Zuckerberg.

While few would criticise their epoch-making decisions, students today needn't leave university to pursue a business idea or social enterprise – and indeed research intensive universities like Imperial provide the perfect environment in which to develop innovative ideas and new ways of thinking and problem solving.

Over the past few years, Imperial has been building its support for entrepreneurially-minded students and early career researchers with several schemes and initiatives – including the Venture Catalyst Challenge, the Althea-Imperial Programme, Imperial College Advanced Hackspace (see page 10) and the Imperial Enterprise Lab.

In the innovative spirit of repurposing and hacking, the slick and modern Enterprise Lab was built from storage space in the basement of the College Library – creating our very own slice of Silicon Valley here in South Kensington.

It offers state-of-the- art digital tools, techniques and training to help students build better business plans and improve their performance at pitching to potential clients, partners or investors. But it also gives students the knowledge, skills and experience to compete for the best jobs and make a real impact in companies that hire them.

Bruno Cotta, the Lab's founding Director (and Engineering and Business School alumnus), said: "Our aim is to support students and others to maximize the impact of translating ideas into practice – whether it's through innovation in organizations they join, or entrepreneurship in organizations they create themselves."

Now that the Lab has been up and running for several months, *Reporter* went along to meet some of the regulars, who are using the space to develop their ideas and skills – and help others do the same.

GetTrik

DIRECTOR/FOUNDER:
Pae Utoomprurkporn Natwilai
(MSc Global Innovation Design, 2013–2015)

"I originally trained as a mechanical engineer at Chulalongkorn University – a research-intensive university in Thailand – then enrolled at Imperial and the Royal College of Art on the Global Innovation Design Masters course. Whilst at Imperial I got involved in the Althea-Imperial programme for aspiring female entrepreneurs, and although my idea for controlling drones wasn't shortlisted, it really got me thinking about innovation more. I won a place with Entrepreneur First, a highly technical accelerator in London and started to develop my ideas more. I'm now really progressing with my start-up GetTrik, which utilises drones to scan structures and create digital maps of surfaces for inspection purposes. Manual inspection using traditional scaffolding or rope access takes days or weeks to complete, and can cost thousands of pounds. I am hugely proud to have recently won the Innovate UK's £50,000 Women in Innovation Awards.

The Enterprise Lab at Imperial has been hugely beneficial for me as an alumnus as it provides a focal point and I can still network with some of the world leading expertise at the College in drones and software development. I can also see how beneficial it is for the next generation of entrepreneurs at Imperial – it's used as a training based for the Althea-Imperial programme now."

MBA Connect

FOUNDER:
Byron McCaughey
(MBA, Business School)

"Imperial is in the unique position of having a Business School attached to a wider college famous for technical and scientific innovations – it is this reason that I chose Imperial College Business School to do my full-time MBA. However, the challenge for Imperial is to connect the many entrepreneurial minded people across the entire campus and to foster relationships between different departments to help develop more successful Imperial born start-ups. The Enterprise Lab is an amazing example of a solution to this challenge, being a place that encourages and develops many of the exciting ideas born every day across the college.

From a personal point of view, the Enterprise Lab has helped an initiative I started in 2016 called MBA Connect. I approached staff members from Lab, including Liz Choonara and Chris Corbishley, with an idea to form a group of Imperial MBA students from a variety of professional backgrounds and nationalities who would support and mentor start-ups across the College. The team at the Enterprise Lab were hugely supportive in helping MBA Connect become an established programme."

BLINK

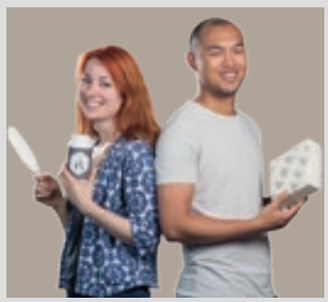
CO-FOUNDERS:
Raunaq Bose, Maya Pindeus and Leslie Nooteboom
(Innovation Design Engineering)

"We first visited the Imperial Enterprise Lab looking for advice on how to take our project 'BLINK: Humanising Autonomy' forward. Since then we have joined the VCC 2017 cohort and the Enterprise Lab is giving us support through business coaching, legal advice, and pitch training. Over the past few weeks our project has evolved from an idea with a working prototype towards building the foundation of a future business. Our vision is to build a communications device that redefines the relationship between pedestrians and self-driving vehicles. Current street level interactions are mainly between pedestrians and drivers through eye contact, gestures and sound. With self-driving vehicles we have to redesign these interactions. BLINK is a communication device that creates a two way communication between pedestrians and autonomous vehicles. It visualises the vehicles' intent and allows communication through machine learning of gestures."

START-UP SUCCESSES

An number of start-ups with Imperial involvement have attracted funding and recognition in the past 12 months

MARCH 2017
Music streaming giant Spotify acquires Sonalytic – a software start-up that can identify individual songs, mixed content and short audio clips with unparalleled robustness and speed. Sonalytic was founded at Imperial by post-doc Martin Gould and was a VCC finalist in 2016.



JANUARY 2017
Eight of Imperial's entrepreneurs are featured in the Forbes 30-under-30 Europe list, including the creators of LifeCradle, Buildrone, Freshcheck, Aeropowder (inset, above), Moya Power, Chrysalis Technologies and Desktop Genetics.

SEPTEMBER 2016
The mobile advertiser Avocarrot, founded by Information Systems Engineering alumus George Eracleous, was acquired by Glispa Global Group for $20M.

AUGUST 2016
Ocean data gathering service Saildrone raised $14m in a series of funding investments, including from Google pioneer Eric Schmidt. Founded by alumni Richard Jenkins and Sebastien de Halleux, Saildrone deploys fleets of unmanned, autonomous sailing drones to monitor weather, fish populations, ocean acidification and climate change.

JUNE 2016
Magic Pony, an AI start-up co-founded by Computing alumni Zehan Wang and Rob Bishop was acquired by Twitter for $150m. Using machine learning techniques, Magic Pony creates high-quality videos from grainy footage.

Rise of the makers

The Imperial College Advanced Hackspace has grown to become one of the largest networks of makers and innovators within any university in the world – we find out how.

Hacking is a term that has a history of ambiguity and appropriation by various groups – from cyber criminals to 'hacker moms' who devise tricks to make parenting easier. The key aspect though, is that hacking is a dynamic and evolving concept.

Imperial's Advanced Hackspace has changed the way students and early career researchers at the College think about innovation – and now it could pave the way for a new model of interaction with industry and the private sector. We spoke with members of the Hackspace management team, Professor Oscar Ces and Dr Nick Jones, to find out more.

What is a hackspace?

It is a large prototyping warehouse that brings together people from different backgrounds – for example machine learning, coding, metalwork, synthetic biology, robotics, diagnostics and woodwork. Engineers, medics, life scientists, mathematicians, physical scientists are all under one roof. There are now well over 100 hackspaces in the UK outside of the higher education sector, but we think that research intensive universities like Imperial have a great opportunity to take the hackspace concept to another level.

What's unique about Imperial's Advanced Hackspace?

Imperial is the unique thing! By heavily linking to Imperial's world leading resources we have made something very special. Most hackspaces use commercially available equipment and resources. Our kit is hot off the press from the Imperial ecosystem and includes for example technologies for manufacturing artificial cells, which you simply would not normally get in a public hackspace environment. Moreover, as it keeps evolving, the students and researchers draw in technologies from their local ecosystem. Also a regular hackspace might have a few technicians focussing on broad areas such as metalwork, but the expertise that feeds into the Advanced Hackspace is on a whole different level, with world-leading academics and scientists across the departments supported by our talented hackspace fellows.

BLOCKS is the world's first modular smart watch

You've now got a membership of over 2,000, with a few hundred new recruits each month. Why has it been so successful?

Partly because there was an unmet need. Historically, academic professors with a grant and a team have always been able to turn their ideas into reality. Yet if you were an undergraduate student, postgraduate, postdoctoral researcher or a lecturer without a grant, then it was very difficult to invent and innovate. Consequently many would leave College, then do the inventive step but with much less support. The Hackspace enables anyone with an idea to turn it into a working prototype. There are no barriers to them doing that and it's free at the point of entry; the only cost being consumables. In fact we even support people's ideas through small booster grants. The Hackspace members who came up with the successful ideas of BLOCKS and LifeCradle both received boost grants.

Alumnus Malav Sanghavi's Lifecradle is a low cost baby incubator intended for use in the developing world

Tell us about your new space at Imperial's White City campus?

We're due to open an Advanced Hackspace in a building called The Invention Rooms, which will also include a Maker Space for local schools and Interaction Zone for public events. It came partly in response to an increasing level of interest from the outside world – large pharmaceutical companies, the personal care sector and engineering firms – who all wanted to be co-located with the Hackspace in order to rub shoulders with this community of creative people. The distributed model at South Kensington can't quite accommodate that.

At the smaller scale, companies may sponsor challenge walls and challenge rooms where they basically post questions on a wall and ask for possible solutions, with a number to call. If they want to address wider problems and questions they can run a bespoke Hackathon, maybe with participants taking existing products to pieces and then rebooting them.

Can the Advanced Hackspace offer an alternative learning model for students?

I think it certainly democratizes science and puts ownership of science back into the curriculum. One question I often hear from prospective undergraduates is 'can I do my own experiments' and for a long time the answer to that was no. The experiments they did were scripted and lab based. But the Hackspace provides that opportunity for scientific exploration.

The major characteristic you need to be a successful scientists is to be entrepreneurial – identify the right problem, work out all the angles and find the resources. That's what the Advanced Hackspace makes possible.

Explosions, Nobel Prizes and poems: a history of the Department of Chemistry

The Department of Chemistry was born long before Imperial College London existed. Its oldest roots are in the Royal College of Chemistry, founded in 1845 with the help of Prince Albert, and its charismatic first professor was pioneering organic chemist A.W. Hofmann. Since then, it has changed names, locations and chiefs, but has always been a leader in the field, according to a new history published this year by two Chemistry alumni.

Professors Hannah Gay and Bill Griffith both completed chemistry degrees at Imperial. Professor Gay later moved on to study the history of science while Professor Griffith still has an active role in the Department, continuing a distinguished career in inorganic coordination chemistry.

The Department has produced three chemistry Nobel Prize winners and been instrumental in the development of a huge variety of topics in organic, inorganic, physical, materials and computational chemistry as well as nanochemistry.

Here, Professor Griffith picks out some favourites from the book.

(Clockwise from right): Derek Barton, Geoffrey Wilkinson, Martha Whiteley and Frances Micklethwait.

Below: the Analytical Lab circa 1912

War stories: Explosive liquids and invisible inks

Imperial's was the only chemistry department to remain open during the Second World War, and much defence-related research was carried out there, including work on the production of penicillin, vitamins A and B1, incendiary devices, and antidotes to poison gases. Other projects included making tablets that looked like aspirins but which, when introduced into chemical vats, ate holes through the walls.

In WWII, two later Nobel laureates from Imperial were also involved in research when they were research students in the Department. Derek Barton (Nobel 1969) worked on invisible inks, and Geoffrey Wilkinson (Nobel 1973) was seconded by the department in 1943 to work on the Tube Alloys project in Canada – a codename for the atomic bomb project.

The Department was also open during the First World War, and benefitted from the pioneering work of, amongst others, two of its female researchers, Frances Micklethwait and Martha Whiteley. Micklethwait, for example, worked on antidotes for mustard gas. Both women joined the Department in the 1890s, despite the many professional barriers to women at the time.

Frederick Field's chemical verse

In the early days of the Royal College of Chemistry, Frederick Field distinguished himself as the 'College poet', penning lines like:

Of purple PERKIN next we sing,
a very clever cove,
Whose name in every nation
is identified with mauve.

William Perkin, another RCC alumnus, was renowned for creating the silk dye later called mauveine. Perkin patented his invention and set up a successful London factory to make it and other dyes. He is often seen as the founder of British chemical industry.

Flashes and bangs! Health and safety in the 1950s

One researcher, Eddie Abel, went on to have a prestigious career, but is perhaps best remembered in the Department for causing an explosion in the 1950s. The blast blew out some windows as well as the door to his supervisor Professor Geoffrey Wilkinson's office, and there was a spectacular fire in Abel's lab, adjoining that office.

Abel was told that on no account was the experiment that caused the explosion to be attempted again in any of the Departmental laboratories. Undeterred, Abel came to the Department very early on Saturday mornings and prepared the compound on the spacious fire escape outside the lab.

He wore three lab coats and a big towel around his head for protection. There were some more flashes and bangs, and with them came huge clouds of grey-green smoke. Some construction workers, working overtime on the new wing of the Science Museum, were amused witnesses and after each bang shouted 'do it again prof'.

Moving on: White City on the horizon

Imperial's Chemistry Department is rooted in the past but has always looked to the future. Although the book covers the period up until 2000, Chemistry will be the first department to start a fresh chapter for Imperial, by moving its research hub out to the new White City campus in early 2018. The Molecular Sciences Research Hub aims to drive a new way of doing chemistry that transcends disciplinary and institutional boundaries in the search for solutions to some of the great challenges facing humanity.

—HAYLEY DUNNING, COMMUNICATIONS AND PUBLIC AFFAIRS

Women @Imperial

As part of the programme of events and talks for Women@Imperial week (page 3), several members of the College community, including staff and students, told us about their roles and career paths

(l-r, from top) Emma Robinson, Hannah Blandford, Abigael Bamgboye and Mano Jacob.

1// Emma Robinson

Research Associate, Department of Computing

"My work involves trying to understand brain organisation from MRI images. We compare brain imaging data across subjects and find common patterns that will allow us to better-understand how the human brain works and how the structural organisation of the brain is linked to different behavioural and cognitive markers, different neurological diseases and psychiatric conditions. We're trying to build predictive models so that we'll be able to look at images of the human brain and predict your likelihood of developing neurological diseases later in life.

I think there's a stereotype that if you study a STEM subject it means that you have to do a certain type of job. When I was going into STEM, I was told that I should be an IT consultant or an aeronautical engineer, but I didn't like experimental work. I wanted to do theoretical work."

2// Hannah Blandford

Student Sports Experience Officer (Performance), Sport and Leisure Services

"I oversee the performance sport programme at Imperial. I studied sports science at university, including aspects of human physiology, psychology, human biomechanics – everything that goes into making sports people what they are today. Now I work with Imperial's top-performing sports teams and scholarship athletes, making sure they are getting the support they need to succeed and that they've got everything behind them that they need to get to the top. It's really cool working with such talented sportsmen and women, who are also equally as talented academically. It's important for us that sport is seen fairly and equally across the board."

3// Mano Jacob

Liaison Librarian, Bioengineering and Chemical Engineering

"I support two departments, bioengineering and chemical engineering, for all their information needs. That involves helping people to find information for their projects and teaching them about plagiarism and referencing.

At the moment, I'm preparing to help the Bioengineering MSc students with their projects. I help them find sources to carry out their research and do their literature reviews. It's really exciting that I can contribute to what Imperial is about – state-of-the-art research and trying to find solutions to human problems."

> "It's not such a bad thing to stand out as a woman in science because it gives you a different platform. And if you're doing well, then it means your achievements are probably seen more."

4// Abigael Bamgboye

First-year, MEng Materials Science and Engineering

"When I was younger, I took part in maths masterclasses that were run by the Royal Institution and held here at Imperial. One class I remember vividly was about the maths behind earthquakes. One thing I've really liked about doing Materials here is studying the variety of different subjects, because now I'm seeing maths in a new way – actually seeing how to apply it within the context of Materials adds a whole new dimension to it.

It's not such a bad thing to stand out as a woman in science because it gives you a different platform. And if you're doing well, then it means your achievements are probably seen more, so there's more opportunity for you to become a role model and inspire people.

—JESSE ALTER, COMMUNICATIONS AND PUBLIC AFFAIRS

Imperial goes green for a week of environmental awareness

There was a green theme on campus this month as Imperial students hosted a number of events to mark Go Green Week 2017.

The events, hosted by students from the Environmental Society, were held to engage staff and students on issues around climate change and the environment.

The week featured a number of themed days with activities focussed around 'Meat Free Monday', 'Waste Not Wednesday' and 'Fossil Free Friday' as well as a number of other environmentally focussed events throughout the week.

Highlights included a screening of the documentary Cowspiracy and an afternoon of community gardening in Imperial's Secret Garden.

Gloria Rosetto, Chair, Environmental Society said: "Our aim was to run a week of activities to get people talking about and engaging with

environmental issues. The week was a great success – we had lots of support from the College and collaborations with other student societies.

"I think that environmental issues are very important with the impact of climate change becoming more apparent. Now more than ever it is important to care for the environment."

There were also a number of discussions and debates hosted by the Grantham Institute and the Centre for Environmental Policy on topics such as the challenges of decarbonising the built environment and the power of low carbon technologies.

Naomi Pratt, a PhD student at the Grantham Institute and one of the lead organisers for Go Green Week, said: "There's lots of research on environmental issues at Imperial and we wanted to use Go Green Week to increase visibility for student environmental campaigning activity and bring like-minded students together, creating a dialogue on these issues.

"We also held a number of talks across the week with researchers that brought staff and students together to talk about the environment."

–JON NARCROSS, COMMUNICATIONS AND PUBLIC AFFAIRS

Imperial's international students break world record during RAG Week

Imperial's diverse and international student body came together last month to break a Guinness World Record as part of the annual RAG Week.

Students from 58 countries took part in the event, breaking the existing record of most nationalities in a group hug.

There were 126 participants in the hug, which saw the students from countries ranging from Bulgaria to Brazil and Mexico to Myanmar link arms in a big circle on the Queen's Lawn.

The record attempt was overseen by a number of staff volunteers who collected student names and nationalities to verify the attempt with Guinness for official confirmation.

RAG Chair, Cyn Nancarrow-Lei (Chemistry), said: "The event was a great success. Imperial is such a diverse student community so it seemed only right we bring everyone together to break this record.

"We've had so much support throughout the week across our events. We've raised lots of money so far and there's more still to count as it comes in."

The event also saw a number of other world record attempts as students tried to beat existing titles for fastest blindfolded orange peel, and fastest Smarties sort using chopsticks.

The stunts were part of Imperial's RAG Week celebrations that saw staff and students raise over £3,000 for RAG's nominated charities across the week.

This year's charities are: Noah's Ark Children's Hospice, Cancer Research UK, The British Heart Foundation and Action Aid. The takings/proceeds from RAG Week add to the money already raised since the beginning of term through events such as the Jail Break, which saw students travel as far as Iceland, Indonesia and Bali for free, raising money along the way.

—JON NARCROSS, COMMUNICATIONS AND PUBLIC AFFAIRS

Volunteering opportunities open to all at Imperial Festival 2017

Applications to volunteer at Imperial Festival – the College's flagship celebration of science, engineering and creativity – are open to all.

The 2017 Imperial Festival will be held at the South Kensington Campus on Saturday 6 and Sunday 7 May.

Each year hundreds of volunteers lend their time, enthusiasm and skills to the Imperial Festival helping make it a major event in London's cultural and educational calendars.

More than 300 people from inside and outside the Imperial community sign up to fill a huge variety of volunteer roles, from tour guides, to zone supervisors, balloon assistants, social media officers and more.

With the annual event now firmly established as the flagship celebration of the College's best science, engineering and creativity, it has never been more important to draw on the energy and talent of the wider Imperial community.

"More than 15,000 visitors attended the Festival last year, which is a fantastic success. But it simply wouldn't have been possible without the help of the 300 volunteers who came on board. We can't thank them enough," said Simone Dagnino, Imperial Research Events and Volunteering Coordinator.

"This year, as in previous Festivals, we offer the chance to be part of a vibrant cultural event in the heart of London, to engage with Imperial's world leading research up close, and to share your enthusiasm with the College community."

Volunteering opportunities for the Imperial Festival are open to anyone above the age of 18, whether students, staff, alumni or members of the public who have never even stepped foot in Imperial.

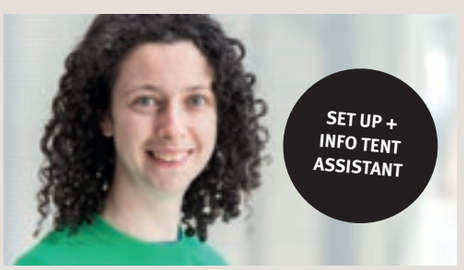
There are more than 18 different types of volunteer roles available across the three major elements of the Festival:

- Festival weekend (Sat 6 - Sun 7 May)
- Schools Day (Fri 5 May)
- Alumni Weekend (Runs parallel to the Festival weekend)

If you are interested in volunteering at the 2017 Imperial Festival, visit: **bit.ly/Volunteers-application**

–ANDREW YOUNGSON, COMMUNICATIONS AND PUBLIC AFFAIRS

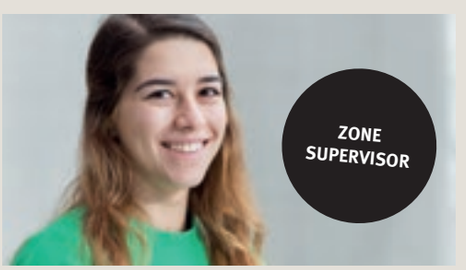
WHY GET INVOLVED? HERE'S WHAT THE VOLUNTEERS HAVE TO SAY...



GUIDING HAND

An Administration Executive at Imperial's ThinkSpace, Katrina McClellan, helped set up the marquee prior to the 2016 Festival weekend, then volunteered as an events assistant in the Information Tent during the weekend itself. Her tasks included coordinating tours, selling merchandise, giving away maps and flyers and helping people find their way around campus.

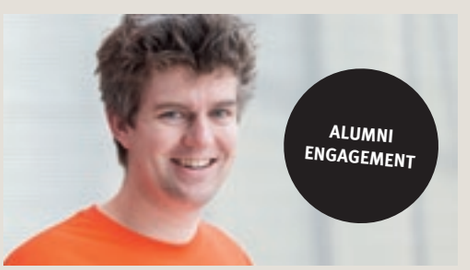
"I loved the experience. Visitors and families were so excited to see demos and learn about actual research in an accessible way. I got to meet staff and students from all across the College and it was great to see people talking passionately about their research."



SHARING THE WONDER

Katerina Stavri took a break from her undergraduate studies in Chemistry to volunteer as a zone supervisor across the weekend. Her tasks included supervising the Robot Zone and interacting with the public

"Volunteering at the Imperial Festival is a great opportunity to improve your organisation skills, time management skills and enjoy a weekend filled with science-creativity and fun! The energy at the Imperial Festival is contagious, and you get to meet a lot of alumni also volunteering or just visiting, who share their Imperial stories with you. It's a very beautiful environment to volunteer in whether you've volunteered at Imperial before or not."



ALUMNI ASSISTANCE

Imperial staff member Dan Warren volunteered at the Alumni Weekend. His tasks included engaging with alumni and helping coordinate activities.

"Volunteering at Alumni Weekend was a great experience and lots of fun. I enjoyed meeting Imperial alumni and talking to them about their time here. It was really valuable and fun to be part of such a large scale event for the College, and to feel the camaraderie among the volunteer team.

"It was really valuable and fun to be part of such a large scale event for the College, and to feel the camaraderie among the volunteer team."

Welcome

new starters

Professor Paul Abel, Surgery and Cancer

Dr Enass Abo Hamed, ESE

Dr Monica-Ioana Abrudan, Public Health

Miss Grace Adeleye, Registry

Ms Abena Adi, NHLI

Professor Hashim Ahmed, Surgery and Cancer

Miss Natasha Ahuja, Enterprise

Mr Robert Ajani, Registry

Miss Rachel Akers, Surgery and Cancer

Dr Khadija Alawi, Institute of Clinical Sciences

Mr James Almond, Physics

Dr Uma Anand, Medicine

Dr Silvia Ardila Jimenez, Bioengineering

Mr Paladd Asavarut, Medicine

Miss Sara Asenjo Sanz, Catering Services

Mr George Ashdown, Life Sciences

Mr Radu Baltean-Lugojan, Computing

Dr Damir Baranasic, Institute of Clinical Sciences

Mrs Neil Beckford, Public Health

Ms Mumina Begum, College Headquarters

Miss Victoria Bennett, Faculty of Natural Sciences

Mr Calvin Bennett, Estates Division

Ms Ligia Bernardeli, Catering Services

Mr Cyril Besnard, Materials

Mr Michael Blosch, Computing

Miss Barbara Bodinier, Public Health

Ms Anita Borkowska, Business School

Dr David Buckley, Chemistry

Mr Adam Butler, Mathematics

Dr Sharon Cadogan, Public Health

Mrs Mylene Cannon, ICT

Mr Gerolamo Carboni, Bioengineering

Mr Rodrigo Carrillo Larco, Public Health

Miss Geraldine Chan, Registry

Miss Tsz Chau, Medicine

Mrs Eva Chaudhary-Zsilli, Catering Services

Ms Melanie Chesnokov, NHLI

Dr Hassan Chizari, Computing

Miss Alessandra Ciniero, Mechanical Engineering

Dr Joana Correia de Oliveira de Portugal Pereira, Centre for Environmental Policy

Mr Carlo Corsaro, Grantham Institute

Mr Fernando Da Silva Cruz, Catering Services

Mr Jama Dalel, Medicine

Ms Kamesha Daley, Medicine

Mr Avik Datta, Medicine

Mr Jack Davies Knapp, Advancement

Ms Joana Dopp, Institute of Clinical Sciences

Dr Paul Expert, Mathematics

Dr Todd Fallesen, Life Sciences

Dr Barbara Fasulo, Life Sciences

Mrs Monika Ferencova, Surgery and Cancer

Dr Michael Flexer, Faculty of Medicine Centre

Dr Sian Fogden, Chemistry

Ms Romina Gismondi, Catering Services

Ms Sara Goldstein, Chemistry

Dr Antonio Goncalves Pedro, Civil and Environmental Engineering

Dr Alejandro Granados Castro, Bioengineering

Mr James Griffin, Faculty of Medicine Centre

Mr Eric Gu, Design Engineering

Miss Regina Guenster, Medicine

Mr Jack Hare, Physics

Miss Katie Harman, Faculty of Medicine Centre

Dr Zoe Harris, Centre for Environmental Policy

Dr Martin Hinsch, Public Health

Dr Katerina Hnatkova, NHLI

Mr Sayed Hosseinzadeh Hejazi, Chemical Engineering

Miss Alexandra Howe, Grantham Institute

Mr Mathieu Hu, EEE

Dr Asad Jamal, Mechanical Engineering

Mr Zhou Jiang, EEE

Ms Pamela Kalemera, Registry

Miss Mohini Kalyan, NHLI

Miss Anna Kasim, Surgery and Cancer

Dr Diego Kaski, Medicine

Ms Daphna Kesary, Public Health

Ms Zoe Kim Sing, Research Office

Miss Helen Lacey, Grantham Institute

Mr Tom Lazenby, Faculty of Medicine Centre

Miss Veranika Lim, Design Engineering

Dr Xinhua Liu, Design Engineering

Dr Gisela Lourenco Henriques, Life Sciences

Mr Yang Lu, EEE

Ms Carys Macdermot Barbour, Faculty of Medicine Centre

Mr Liam Madden, Bioengineering

Mr Mehul Makwana, Mathematics

Ms Magdalena Maliszewska, Catering Services

Professor Steve Marston, NHLI

Ms Erica Mazaika, NHLI

Ms Lidia Merino Garcia, Catering Services

Mr Philip Milton, Public Health

Mr Luis Moliner Cachazo, Life Sciences (Silwood Park)

Dr Sujit Mukherjee, Surgery and Cancer

Ms Katherine Mulcahy, Student Recruitment and Outreach

Mr John Murtagh, Library

Miss Neesha Nanu, Public Health

Mr Ammar Nasif, Institute of Clinical Sciences

Mr Ryan O'Hare, Communications and Public Affairs

Ms Mirela Oliver, Registry

Dr Nandinee Patel, Medicine

Mr Immanuvel Paul, Aeronautics

Mr Charlie Pearcey, Estates Division

Mr Andrew Peat, Strategic Planning

Dr Nicholas Phillips, Chemistry

Mr David Pitcher, NHLI

Miss Gyte Pleskeviciute, Catering Services

Dr Georgios Pothoulakis, Bioengineering

Dr Dominic Pye, Chemistry

Miss Chanelle Quealy, Faculty of Medicine Centre

Dr Ana Quiroga Campano, Chemical Engineering

Dr Marie-Christine Ramel, Life Sciences

Mrs Vai Raniga, Faculty of Engineering

Mr James Rees-Williams, Faculty of Medicine Centre

Mr Alexander Renziehausen, Medicine

Mr Rejdi Resuli, Catering Services

Dr Jillian Riley, NHLI

Miss Charlotte Roberts, Faculty of Medicine Centre

Miss Fiona Rohlffs, Surgery and Cancer

Mr Daniel Saunders, Physics

Miss Paulina Sekrecka, ICU

Mr Vivek Senthivel, Bioengineering

Dr Hyejeong Seong, Materials

Dr Julia Sero, Materials

Mr Ouesseynou Sewane Niang, Catering Services

Mr Xingyuan Shi, Physics

Miss Kristie Thacker, ICU

Mr Marcin Turowski, Catering Services

Miss Sarah Umar, Advancement

Dr Paul Verschueren, Mathematics

Dr Dennis Veselkov, Surgery and Cancer

Dr Claudia Von Arx, Surgery and Cancer

Dr Jessica Wade, Physics

Dr Shuai Wang, Physics

Mr Martin Watmough, Design Engineering

Dr Abeni Wickham, Materials

Dr Joseph Wood, Mechanical Engineering

Dr Guohui Zhang, Chemistry

Mr Zebang Zheng, Materials

Farewell

moving on

Dr Marieke Aarts, Institute of Clinical Sciences

Dr Amit Adlakha, Institute of Clinical Sciences

Mrs Waheeda Ajmeri, Physics

Dr Sanne Alsters, Medicine

Miss Amirah Aslam, Registry

Mr Ilias Bamis, Chemistry

Dr Deren Barsakcioglu, EEE

Dr Gaurav Bhutani, ESE

Dr Luca Biancofiore, Mechanical Engineering

Miss Katrin Blondrath, Medicine

Dr Adriano Boasso, Medicine

Ms Rowena Boddington, Business School

Dr Thomas Bond, Civil and Environmental Engineering (5 years)

Miss Beth Britton, Materials

Mr Simon Burbidge, ICT (11 years)

Mr Gilbert Chimungu, Risk Management

Ms Heather Chisholm, ICT (8 years)

Ms Deborah Collymore, Faculty of Medicine Centre

Mr Lewis Cotter, ICU

Mr Peter Dawson, EEE

Mrs Yiovanna Derpsch, Public Health

Professor David Dexter, Medicine (22 years)

Mr Ralph Dickerson, Finance (26 years)

Miss Monika Dudek, Estates Division

Miss Abbey Evans, Surgery and Cancer (5 years)

Dr Ioannis Filippis, Life Sciences (7 years)

Mr Jonathan Fletcher, Finance

Dr Fabrizia Foglia, Chemical Engineering

Mr Vladimir Gligorijevic, Computing

Dr Franck Gonzalez, Bioengineering

Ms Maggie Gorman, Public Health

Mr Daniel Gray, Medicine (5 years)

Miss Nafia Guljar, Surgery and Cancer

Mr Ramesh Gurajala, ICT

Miss Nyla Haque, Public Health

Ms Amy Haylen, HR (8 years)

Ms Kathryn Hicks, Surgery and Cancer

Dr Tom Hills, Chemical Engineering

Mr Kevin Ilett, Faculty of Medicine Centre

Dr Ivan Isakov, Physics

Dr Jua Iwasaki, NHLI

Dr Pooyan Jamshidi Dermani, Computing

Mrs Rebecca Jenkins, Advancement

Mr Thomas Joseph, Computing

Miss Angeliki Karamani, NHLI

Mr Kaiser Karamdad, Chemistry

Dr Kristina Kareh, ESE

Mr Sokratis Kartakis, Computing

Ms Donna Kennedy, Surgery and Cancer

Mr Christoph Larndorfer, Physics

Dr Wei Lee, Chemical Engineering

Mr Mario Lemmer, Chemistry

Dr Joshua Levine, EEE

Dr Jun Li, Chemistry

Dr Ziwei Liang, Institute of Clinical Sciences 3

Miss Siew Lim, Business School (29 years)

Mr Daniel MacDonald, Advancement (5 years)

Mr Angus Maidment, Mechanical Engineering

Mr Arthur Mariaud, Chemical Engineering

Dr Jaime Martin Perez, Materials

Ms Ryanne Matthias, Faculty of Medicine Centre

Dr Michael Merlin, EEE

Dr Melissa Merritt, Public Health

Dr Emma Metters, Public Health

Mr Joan Miro Blanch, Medicine

Dr Neil Morrison, Aeronautics

Dr Jaita Mukherjee, Faculty of Medicine Centre

Dr Ali Niknejad, Civil and Environmental Engineering

Dr Philip Noonan, Medicine

Dr Simon North, Life Sciences

Mr Stephen Obuba, ThinkSpace

Ms Ronke Olomola, Public Health

Mr Zane Page, Estates Division

Dr Richard Palermo, Medicine

Dr Michael Panagopulos, Chemical Engineering

Dr Rajesh Patel, Surgery and Cancer

Mr Afzal Patel, ICT

Dr Michael Pickles, Public Health (10 years)

Mr Aleksej Popel, Materials

Dr Emily Prior, Medicine

Miss Vian Rajabzadeh-Heshejin, NHLI

Dr Ricardo Randall, Life Sciences

Dr Charlotte Robb, Medicine

Dr Eleni Salamaxani, Medicine

Dr David Salman, NHLI

Professor Murray Shanahan, Computing (18 years)

Dr Kanudha Sharda, Materials

Dr Amirali Shirazibeheshti, EEE

Dr Kathleen Sim, Medicine (6 years)

Miss Ameze Simbo-Nomayo, NHLI

Ms Maliga Sinniah, Public Health

Dr Keith Smith, Business School (7 years)

Dr Konstantina Spanaki, Business School

Miss Annie Stephenson, Public Health

Mr Atsushi Takagi, Bioengineering

Dr Judith Thei, Mechanical Engineering

Ms Zoe Townsend, Chemical Engineering

Dr Antonio Trabalza, Medicine

Miss Chetna Vaghela, Life Sciences

Mrs Snieguole Vingeliene, Public Health

Miss Marie-Sophie Wegner, Centre for Environmental Policy

Mr Giovanni White, Sport and Leisure

Dr David Whitelaw, Sport and Leisure (8 years)

Dr Jennet Williams, Institute of Clinical Sciences

Mr Thomas Wood, Computing

Dr Maria-Benedicta Wrench-Edwards, NHLI

Dr Justin Yeoman, Life Sciences (5 years)

Dr Jie Yu, Chemical Engineering

retirement

Miss Shirley Baker, Finance (42 years)

Miss Shashi Luther, ESE (23 years)

This data is supplied by HR and covers staff joining the College during the period 1 February – 7 March 2017. This data was correct at the time of going to press.

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

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

moving in. moving on.

Enterprise Week

Enterprise Week is a whole week of events to showcase the outcomes of enterprising student initiatives across the College. Share your excitement and reactions to the events on social media with the hashtag **#EntWeekIC!**

bit.ly/entweek17

20 MARCH, 17.30 – 19.30
Imperial College Union

A.C.T. Now! Social Enterprise Showcase

This showcase will bring together student social entrepreneurs from across college for an evening of celebration and innovation with a chance to win £1500 worth of funding for their project.

20 MARCH 20, 18.30 – 21.00
White City Incubator

Next Practice Series: Scaling Start-ups. The Exciting Nightmare of Managing High-Growth Businesses

This month's Next Practice series brings together the founders of some of the UK's most successful scale-ups and their investors. Join our panellists during this year's Enterprise Week to explore questions of managing cash, scaling talent and meeting metrics.

21-23 MARCH, 10.00 – 18.00
College Main Entrance

Imperial College Advanced Hackspace Demo Days

Since September 2014, ICAH has been actively supporting students, academics, and staff in bringing their ideas to life. There have been many inspiring projects and this March ICAH members will be presenting their beautiful works to the public at the college reception!

21 MARCH, 18.00 – 21.00
Royal Geographical Society, South Kensington

Althea-Imperial Final

The final showcase event, where our selected finalists will present their pitches to a panel of academic and industry experts as they compete for a total of £20,000 available as prizes to take their projects forward.

22 MARCH, 16.00 – 17.30
Enterprise Lab, South Kensington

Corporate Partnerships Industry Sneak Peek

Imperial College London's Corporate Partnerships team design effective collaborations with industry to deliver benefit to society through research and education. The CP showcase is an opportunity for the College to bring together enterprising students and industry to interact and discuss their work.

22 MARCH, 17.30 – 20.00
SAF Lecture Theatre, South Kensington

Schools Science Competition

The top nine teams of the FoNS Schools Science Competition will be invited to present their idea at a showcase event in front of a live audience and a panel of judges. The competition winners will each receive individual prizes and will also have the chance to take part in Imperial Festival 2017

22 MARCH, 18.00 – 20.30
Imperial College Business School, South Kensington

Imperial College Business School Entrepreneurs: Swift Pitch

Experience elevator pitching for real! The Business School is inviting students and entrepreneurs (individual or teams), who have a clear idea and are able to deliver an elevator pitch in 1 minute.

22 MARCH, 19.00 – 21.00
Imperial Incubator, Level 2 Bessemer Building

Celebrating Success – 10 years of the Imperial Incubator

The Imperial Incubator has been a hub for innovation and entrepreneurship at Imperial College for over 10 years. The Incubator has been home to over 150 startups raising over £1bn in financing. Join Imperial Innovations at the South Kensington Incubator for an evening of celebrating 10 years of innovation

23 MARCH, 18.00 – 20.00
City and Guilds, Large Lecture Theatre

Venture Catalyst Challenge Final

The finale of the Venture Catalyst Challenge 2017 present a selection of the most exciting technology and science ventures from Imperial Enterprise Lab. Following months of developing their ideas, the final seven groups – from over 100s of entries – pitch their ideas to an audience of experts and the general public.

23 MARCH, 20.15 – 21.30
Enterprise Lab, South Kensington

Imperial Business Partners Reception

The Imperial Business Partners programme sets the scene for a unique collaboration: where business leaders and policy-makers meet world-class researchers to exchange learning and insights. VCC finalists are invited to showcase their work and meet top industry leaders.

24 MARCH, 12.00 – 14.00
Enterprise Lab

Entrepreneur First Alumni Networking Event

Entrepreneur First and Imperial invite our joint alumni to this exclusive networking event to celebrate their achievements. Speakers will include past EF teams on their experiences and leaders of both organisations.

24 MARCH, 16.00 – 19.00
Enterprise Lab

Enterprise Week Thank You Party

To wrap up Enterprise Week, a thank you party at the Lab open to anyone who has contributed to the organisation of the week's events!

imperial innovations
Imperial Enterprise Lab

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