

REPORTER

#313
31 JANUARY 2020

SHARING STORIES OF IMPERIAL COLLEGE LONDON'S COMMUNITY

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BASICALLY TWO BIG
CONCRETE BOXES...

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from campus to company

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Paying tribute to Professor Walter Hayman.

IMPERIAL IN BRIEF



COLLEGE

Imperial at WEF

Research into biosensors, data privacy and advanced manufacturing was highlighted at the World Economic Forum (WEF) in Davos by Imperial academics.

The academics, including Professor Molly Stevens, Professor Jonathan Haskel and Dr Yves-Alexandre de Montjoye, joined world leaders, CEOs of multinationals, members of international organisations and other scientists at the WEF Annual Meeting.

President Alice Gast was one of the first speakers on the conference's first full day, taking part in the session Shaping the Future of Advanced Manufacturing and speaking on a panel alongside Rajeev Suri, President and Chief Executive Officer of Nokia and Paulo Guedes, Brazil's Minister of Economy.

▶ FULL STORY: bit.ly/reporter313-WEF

ENTERPRISE

MIT'S D-LAB FOUNDER VISITS IMPERIAL

The Director of the Massachusetts Institute of Technology's (MIT) D-Lab, Amy Smith, spoke at Imperial about tackling global challenges. The D-Lab works with people around the world to develop collaborative approaches and practical solutions to global poverty challenges.

During her visit to Imperial, Amy met with student entrepreneurs in the Enterprise Lab, presented the D-Lab's work to academics and visited the Digital Learning Hub.

▶ FULL STORY: bit.ly/reporter313-D-LAB





The Early Years Centre has officially reopened after an extensive year-long refurbishment project. Staff, parents and children attended a grand opening event on 16 January.



BUILDING ON A GREAT FOUNDATION OF WORLD LEADING RESEARCH AND EDUCATION, THE NEW ACADEMIC STRATEGY SPURS US TO GO EVEN FURTHER TO PUSH THE FRONTIERS OF DISCOVERY, TRANSFORMATIVE INNOVATION AND EDUCATION.

Imperial's Provost, Professor Ian Walmsley addresses staff, students and external partners at the launch of the College's new Academic Strategy.

1,000+

downloads of the College's new SafeZone App, designed to alert security staff in an emergency.

COLLEGE IMPERIAL AND CNRS LAUNCH PHD JOINT PROGRAMME

Imperial and France's National Centre for Scientific Research (CNRS) have launched a PhD joint programme in mathematics and data. The two institutions run a joint mathematics lab – the UMI Abraham de Moivre – at the South Kensington Campus.

The PhD joint programme is focused on the theme Mathematics, Data and their applications in all areas of science. The programme begins in October 2020 and is open to students from across the College. A call is open to projects which deploy mathematics, data, modern statistics, or AI and machine learning to scientific challenges across all disciplines.

► **FULL STORY:** bit.ly/reporter313-CNRS

Catalysing companies

Every university startup begins with an idea, a piece of research that can make a difference in the world. But the route each idea takes from campus to company is different, as is the support needed by each would-be academic entrepreneur.

*Professor Jason Hallett,
Dr Florence Gschwend
and Dr Agi Brandt-Talbot.*

OVER THE YEARS, A RANGE OF INITIATIVES, funding and professional advice has developed within Imperial to inspire entrepreneurial ambitions and support students and academics alike. In March 2019, most were brought together under the banner of the Enterprise Division, including the College's technology transfer work that was previously led by Imperial Innovations. This move to take Imperial entrepreneurship to the next level is part of the College's broader mission to increase the impact of its research by encouraging interaction between Imperial's academics and the world of business.

Yet starting a company is rarely the first choice when commercialising research. Licensing the idea to an established company is a quicker route to the market, and less time-consuming for the academics involved. But sometimes existing companies will just not bite.



**OUR TECHNOLOGY IS BOTH
A BLESSING AND A CURSE.
THERE ARE A LOT OF POTENTIAL
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ONES HAS BEEN REALLY
IMPORTANT.**

Dr Agi Brandt-Talbot, Department of Computing



CHRYSALIX

This happened to Dr Agi Brandt-Talbot, who had developed an alternative method for producing biofuels using ionic solvents during her PhD in the Department of Chemistry. “There were some conversations with companies working in this area, but we realised that no-one wanted to take the risk and build a pilot plant,” she recalls. “That led us to think about a spinout.”

To do the engineering development work required, she and her postdoc supervisor, Professor Jason Hallett, moved to the Department of Chemical Engineering. They were joined by a Master’s student, Florence Gschwend, who went on to complete a PhD applying the method to waste woods laced with heavy metals, broadening its use from dedicated biofuel crops.

“Our technology is both a blessing and a curse,” says Dr Brandt-Talbot. “There are a lot of potential applications we can target, so nailing down the commercially significant ones has been really important.”

Preparing the startup was partially funded by the Impact Acceleration Account, money from the research councils administered by the College. This supported market research and trials to help scale-up the process.

The three partners also worked on their business skills through the Lean Launchpad for Synthetic Biology, a training programme run by Imperial’s SynbiCITE innovation centre. “That catalysed things for us,” Dr Brandt-Talbot recalls, “and then Florence became really keen on driving the commercialisation forward.”

Dr Gschwend entered the Althea-Imperial competition – now known as Welnnovate – which aims to inspire the next generation of women entrepreneurs at the College, coming away with a prize of £10,000. She also won a place on the College’s Techcelerate programme for testing business ideas in the marketplace, and led a successful bid to the Climate-KIC accelerator programme, a European Union initiative that supports startup development.

When Chrysalix Technologies was established in 2017, Dr Gschwend became its chief executive. Meanwhile commercial demand settled the market question.

“The main interest was not for using contaminated waste wood, but sawdust from timber mills, agricultural or orchard residues, or shells from different kinds of nuts,” Dr Gschwend explains.

In December 2019 Chrysalix had a significant boost, winning a €2.3 million grant from European Innovation Council’s Accelerator Programme. “We’ll build a pilot plant in 2020, it will start to operate in 2021, and we are hoping to build our first commercial-scale plant around 2023,” says Professor Hallett.

GRAPHICSFUZZ

For Dr Alastair Donaldson in the Department of Computing, creating a startup was a pragmatic step on the way to a licensing deal or a research collaboration with a company. Even just starting a conversation in the tech sector often involves non-disclosure agreements and other legal formalities, so putting the academic research in the hands of a startup meant everyone was on a commercial footing. “It allowed a low-friction interaction with these companies,” he explains.

The research in question was a method for automatically detecting bugs in the compilers – the programs that are used to convert the text of other computer programs into machine code. Dr Donaldson and PhD student Andrei Lascu had found a way of doing this for code run on graphics processing units, and the idea was to explore applications in areas such as gaming, computer vision, or medical imaging.

The decisive factor for Dr Donaldson was Founders’ Choice, an option provided by Enterprise that offers staff who want to go their own way with a startup 90–95 per cent of the equity, but afterwards only a basic level of support. The alternative is a more balanced equity share with the College and a comprehensive package of support.

The first option gave Dr Donaldson the freedom he needed. “I wanted to do something quite niche, in an area where



THE PROGRAMMES KINDLED ENTREPRENEURIAL SPIRIT IN US.

Dr Alastair Donaldson,
Department of Computing



I already had all the contacts, so for me having more equity in exchange for less practical help was a worthwhile trade-off.”

He and his colleagues then took part in the Innovation to Commercialisation of University Research (ICURe) programme, run by Innovate UK, and the Cyber Security Academic Startup Accelerator Programme (CyberASAP), funded by the Department for Digital, Culture, Media and Sport in collaboration with Innovate UK and the Knowledge Transfer Network. This supports academics while they explore market opportunities and, in promising cases, funds prototype development.

Initially unconcerned with building a business, the team’s natural competitiveness kicked in and they won a place in the prototype stage. “The ICURe and CyberASAP programmes kindled some entrepreneurial spirit in us that we didn’t have at the beginning.”

Now with a business plan and a prototype, GraphicsFuzz started looking for customers. But by then Google had taken notice and made an offer to buy the company. The acquisition was agreed in August 2018.

During their journey, the team took advantage of the Imperial Venture Mentoring Service. The academic entrepreneur who advised them had

experienced a take-over, but more importantly shared the team's values. "We'd gone into this with impact in mind, rather than making lots of money. We wanted to see the research fly, and our mentor had the same mindset."

GRIPABLE

The researchers behind GripAble, on the other hand, aspired to create a startup from the beginning. During his PhD research on movement recovery in people with brain damage, Dr Paul Rinne noticed that many therapy aids were so complicated that neither patients nor therapists were keen to use them.

So he and Dr Mike Mace in the Department of Bioengineering sat down to develop something simpler that could be brought to the patient's bedside. This is a portable hand grip that registers force and motion, and connects wirelessly to a mobile app, allowing patients to play games or perform tasks that exercise their fingers,

hand, wrist or whole arm.

"From day one we believed this could be something to spin out," Dr Rinne says. An Imperial Confidence in Concept (ICiC) grant allowed them to prove the concept and develop a prototype, then a second ICiC grant supported clinical trials with the device.

The College's then tech transfer company, Imperial Innovations, provided help protecting the intellectual property and advised on initial business planning. But it also gave the pair a hard time about their brainchild.

This seemed excessive at the time, but now Dr Rinne sees it was necessary. "There was a lot of tough love," he recalls. "We had to prove that we could create a company, that we were serious as entrepreneurs."

There was no obvious location within the College at this time in which the startup could take shape, so the team looked further afield. After finishing in the top five of the OneStart 2016 healthcare accelerator in London, GripAble won a place in the exclusive



Dubai 100 healthcare accelerator. "That was the biggest shift in gears for the company."

It was at this point that GripAble spun out from Imperial, with the College providing advice on the practicalities of founding the company and how to manage early stage investors. "To have that structure, weight and support behind you in the early days is invaluable," Dr Rinne recalls.

Grants from Innovate UK and the National Institute for Health Research's Invention for Innovation programme, followed by a £1.8 million

A patient plays a computer game using GripAble.



**WE HAD TO PROVE THAT WE COULD
CREATE A COMPANY, THAT WE WERE
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Dr Paul Rinne, GripAble

The DnaNudge store in Covent Garden.



investment round, allowed the company to finalise its software and start manufacturing the hardware. “As of March 2020,” Dr Rinne says, “we are open for business.”

DNANUDGE

The startup route was also indicated for DnaNudge, a service aimed at consumers rather than a technology another company might run with. “I wanted to create a retail service where consumers would be able to shop based on their DNA,” says Professor Chris Toumazou, of the Institute of Biomedical Engineering.

His idea involved combining medical technology and data analysis. A one-off DNA sample generates a profile based on well-documented genetic predispositions to type 2 diabetes, obesity, raised cholesterol levels, and hypertension. This is then cross-referenced with national guidelines for healthy eating, and extensive nutritional information on supermarket products.

This means that when a DnaNudge user

scans a product barcode when shopping, the system shows whether or not it is a healthy choice, given their individual profile. This even works at the level of different brands, for example separating healthier from less healthy biscuits.

“Small changes in your decisions can, over a period of time, significantly reduce the amount of salt or sugar entering your bloodstream, without your realising it,” says Professor Toumazou.

As well as a mobile app, the system operates through a wrist band that tracks activity, so it can adjust the advice depending on levels of exercise.

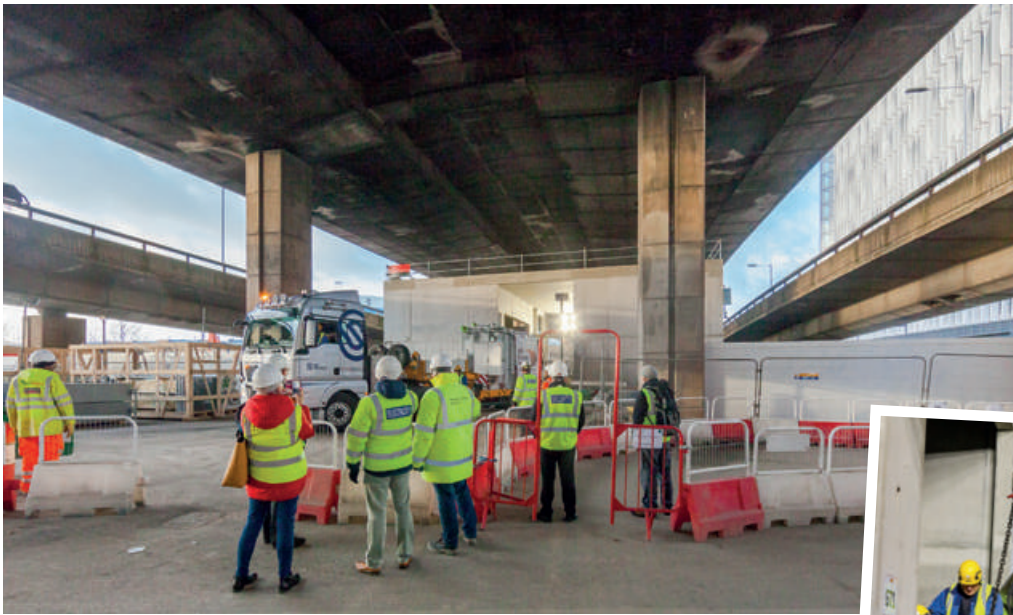
Even though DnaNudge is already on the market, with a flagship store recently opened in central London and online sales launching soon, continuing links with Imperial are important. Professor Toumazou particularly values the networking events run by Enterprise. “They bring in people from industry and allow us to talk about our spinouts. That exposure has given me a level of industrial involvement I wouldn’t otherwise have had.” ●

ENTERPRISE WEEK 2020: 16–20 MARCH

One of the aims of this year’s Enterprise Week is to encourage more Imperial academics to get involved in enterprising activities.

Throughout the week, look out for more enterprising case studies in a photo exhibition, on social media, and at events – including a lunchtime panel discussion with academic innovators on Monday 16 March. This event will be followed by a reception, where you can meet members of the Enterprise Division and find out more about increasing the impact of your research through entrepreneurship and commercialisation.

► www.imperial.ac.uk/enterprise-week



Campus oddities

If you work at the White City Campus or you've visited it recently, you might have spotted two big concrete buildings being constructed under the Westway overpass, between the north and south sites. We spoke to Roy Dickerson, Head of Strategic Infrastructure in the Estates team, to find out more.

WE HAD KNOWN THAT THERE WAS insufficient electrical capacity in the White City area for our new campus, so back in 2013 we made an agreement with UK Power Networks (UKPN) that we would provide them with land on our campus for them to build a primary substation.

After a long consultation process, UKPN agreed to use a site under the Westway, and we then had to go through a similarly long consultation process with Transport for London, as they need to access the Westway for any repairs. And then we had to get planning permission.

The substation is actually two large buildings that if placed on the Queen's Lawn would stretch from the Queen's Tower, almost to the Library. Currently they're basically two big concrete boxes, but they will have a façade added and the space around them will be used to provide cycle parking.

The transformers were delivered in December 2019. They will change the voltage level of the electricity from high voltage when it arrives to the substation, to a lower voltage for distribution to the campus buildings.

The combined weight of the transformer and delivery lorry is around 100 tonnes,

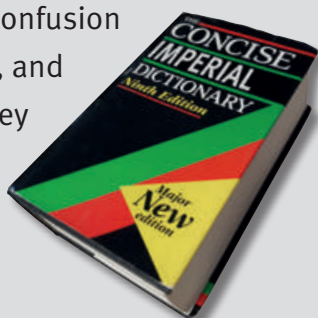
so we knew we'd have to be careful with the route across campus. We had to strengthen part of the ground by putting a concrete slab above some of the buried cables and pipes to protect them.

Once installed, the transformer has to be kitted out with a cooling system to prevent it from overheating, and there is a lot of cabling and equipment to be fitted in the other building. The cables feeding the substation have to come all the way from Willesden. The route has largely been established, and there is an on-going process to get approvals from the different local authorities for the works which may require road closures and other disruptions. Power on is scheduled for January 2021 – it's a two-year programme that started in February 2019.

Back in 2013 when we made the agreement with UKPN, no-one expected it would take this long. So, we've had to make other arrangements for the buildings on the north site that have opened in the meantime. This has been achieved by working with the electricity company to re-allocate capacity to serve the Molecular Sciences Research Hub and the Sir Michael Uren Hub. ●

FOO what?

Bewildered by SLARB? Baffled by the Dongaliers? While we love a good bit of jargon at Imperial, it's easy for departmental sayings to go way over our head. Search the puzzle to find some of the words causing confusion around campus, and find out what they actually mean.



JARGON	DEFINITION	HOW YOU CAN USE IT
FoNS-MAD	Faculty of Natural Sciences Make-A-Difference Competition, an innovation competition for undergraduate students.	"FoNS-MAD launches in January."
Imperialise	The term to describe when ICT install software to a new laptop.	"Your new laptop arrived and has been Imperialised."
FOO	Faculty Operating Officer	"Let the FOOs know!"
BOA	Break out area	"Meet you in the BOA."
CME	College Main Entrance	"Can you please book the CME for an event?"
SLARB	Student Led Activities Review Board	"What have SLARB been discussing recently?"
BENS	Business, Engineering and Natural Sciences	"The BENS team offer library support across the campus."
APC	1) Article Processing Charge: a charge levied by publishers to publish a research article so that it is free at the point of use rather than behind a subscription paywall. 2) Automatic People Counter: a device that counts the occupants of a defined space.	1) "Please can the library pay this APC for me." 2) "What did the APC record for room X yesterday at 14.00?"
Co-benefits	Other benefits that arise from fixing another issue that can seem unrelated.	"There are multiple co-benefits to tackling climate change, such as better health and reduced NHS costs."
Translation	Making research useful to people outside academia.	"We're really good at translation."
Dongalier	A team member who uses an Apple laptop and has to carry multiple cables, "dongles", to each meeting to connect to the College's range of screens and projectors.	"Don't worry, one of the Dongliers will have the right cable!"
Backlog grooming	A term used by the College's Digital team to describe the process of reviewing and prioritising tasks.	"Navin and Ed are backlog grooming so we know what to work on in the next two weeks."

Many thanks to Rebecca, Alison, Chiara, Chris, Michela, Abbie, Simon, Liz and everyone else who submitted their favourite examples of Imperial jargon.



Changing the food landscape at Imperial

We all know how important food can be when you're working and studying in a place like Imperial. Martha Nahar sates her stomach with the latest culinary treats available on campus.



Martha Nahar,
COMMUNICATIONS
AND PUBLIC AFFAIRS

NOTHING BEATS KNOWING THAT YOU'VE got a few options to help you power through the day, whether it's a packed lunch, food from the Senior Common Room (SCR), or a walk down the road to your local supermarket.

Over the last year, Imperial has seen a flurry of catering outlets undergoing refurbishments and some exciting new openings. With new faces and voices joining the College, a subtle cultural shift is taking place in the catering teams at Imperial and it's being led by our Head of Catering and Events, Kamil Khoury.

"Our goal is to expand the choice available and to better respond to some very unique expectations," says Kamil. He joined the College in October 2018 and oversees the food and drink operation for our 17,000 students and 8,000 members of staff. "We are constantly trying to improve the food offering. One of the questions I constantly ask myself is 'are we providing what our community wants?'"

As part of the changes to food at Imperial, a bespoke new Asian menu was introduced in the Queens Tower Rooms

(QTR) restaurant on the South Kensington Campus in September last year. "We have a lot of Asian students

in our community, and we know that they're away from home and are likely missing the comforts of a home-cooked meal, so we wanted to bring them a level of comfort on campus."

The catering team have hired two Asian chefs who have increased dishes by 30 per cent. Over 700 meals are served daily in the QTR restaurant – a success for the team. Kamil adds: "If it tastes like home and it looks like home, it'll feel like home!"

Another major development comes in the form of Plantworks, Imperial's first-ever vegan café. The opening of Plantworks in April last year came following feedback from students and staff who wanted to see sustainability factored into our food offering. A Greening Imperial survey revealed that more than 87 per cent of Imperial students considered the impact of





their diet on the environment, and feedback also showed concerns about the lack of options on campus for vegetarians and vegans.

Fast forward six months and Plantworks is now selling around 500 meals a day during the lunchtime rush hour. Kamil has been working closely on the development of Plantworks with Executive Chef Tony Shepherd, who took up his role at the College in 2017.

Tony says: “We did a lot of research internally and externally to understand what vegan options we could bring to Imperial, and thought carefully about how we’d achieve that through Plantworks.”

Tony’s dedication to delivering an authentic food experience for staff and students saw the hiring of chef Christopher Herbert, who is helping to bring Plantworks to life and makes the space a welcoming environment for everyone.

“Christopher, who is also vegan, always gives our staff and students extra information about the dishes on the Plantworks menu and what is in the food,” explains Tony. “This isn’t just great for vegans, but for anyone who has allergies, food intolerances or specific dietary requirements, so we’re really excited to be able to provide this for our staff and students.

“I know how important it is for our wellbeing that our food tastes



and looks nice, so it’s really important to give our staff and students a sense that as an organisation, Imperial values their wellbeing.”

And so the introduction of new food and refurbishments continues for the Catering team, whether it’s updating Reynold’s Café at our Charing Cross Campus, introducing Starbucks and grab-and-go meal deals, or bringing in shaker salad bars and hot deli counters at Hammersmith and White City. As the year has stretched on, the Catering team have worked on introducing The Bakery at the Junior Common Room to refurbishments of the SCR Café, which opened in January. As part of the opening, we have introduced Imperial’s first-ever own brand coffee bean.

Kamil reiterates that throughout all of these improvements, his goal has been to improve our catering outlets and ensure they reflect the expectations of everyone that uses them, and that this is only possible through better dialogue with customers. In the coming months, you’ll start seeing the launch of ‘The Catering Conversation’ – an ongoing project that will allow you to provide immediate feedback at certain outlets and participate more directly in improving the food and drink landscape at Imperial. ●

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Outlets across Imperial employing 155 staff



2,315 approximate seating capacity



195,000 cups tea and coffee served annually



I KNOW HOW IMPORTANT IT IS FOR OUR WELLBEING THAT OUR FOOD TASTES AND LOOKS NICE, SO IT’S REALLY IMPORTANT TO GIVE OUR STAFF AND STUDENTS A SENSE THAT AS AN ORGANISATION, IMPERIAL VALUES THEIR WELLBEING.

Tony Shepherd, Plantworks Executive Chef

RESEARCH NOTES

NOVEMBER 2019 – JANUARY 2020

E-babies, cooling pain, and psychedelic studies



ENGINEERING

Mozzie mating and malaria

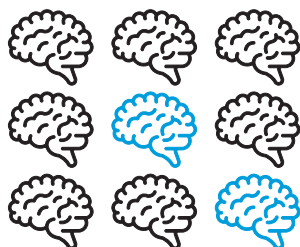
Hormones received from male mosquitoes during mating boost the likelihood of female mosquitoes transmitting malaria to people, revealed a new study from Imperial life scientists.

► FULL STORY: bit.ly/reporter313-mozzies

60,000

The number of Indian women participants in the world's largest study into babies with brain injuries.

► FULL STORY: bit.ly/reporter313-babies



1 in 3

The prevalence of UK doctors working in obstetrics and gynaecology who may suffer from workplace burnout.

► FULL STORY: bit.ly/reporter313-burnout

MEDICINE

Fire and ice

Watching immersive 360 videos of icy Arctic scenes helps to relieve burning pain and could hold hope for treating chronic pain, a study has found.

The scientists from Imperial's MSK Lab have found that using virtual reality headsets could combat increased sensitivity to pain, by immersing people in scenes of icebergs, frigid oceans and sprawling icescapes.

Dr Sam Hughes said: "Our work suggests that VR may be interfering with processes in the brain, brainstem and spinal cord, which are known to be key parts of our inbuilt pain-fighting systems and are instrumental in regulating the spread of increased sensitivity to pain."

► FULL STORY: bit.ly/reporter313-VR-arctic



ENGINEERING

Birthday bash

A 'road map' for the future of UK research and development was outlined by former science minister Lord David Willetts at the Data Science Institute's first ever annual lecture, and its fifth birthday.

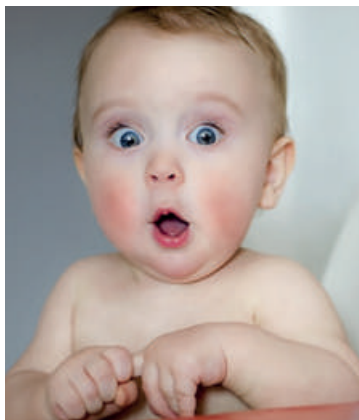
► FULL STORY: bit.ly/reporter313-data

BUSINESS

E-babies

By 2037 half of babies will likely be born to couples who met online, found a new 'Future of Dating' report from the Business School.

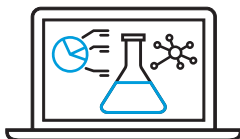
► FULL STORY: bit.ly/reporter313-dating



€8 million

The total value of Consolidator grants recently awarded to four Imperial academics by the European Research Council.

► FULL STORY: bit.ly/reporter313-consolidator



“ I THINK IT’S FAIR TO SAY THAT IF YOU USE A PRODUCT FROM A REPUTABLE SOURCE TO VAPE, THEN IT’S GOING TO BE A LOT LESS HARMFUL TO YOU, THAN IF YOU WERE TO USE CONVENTIONAL CIGARETTES”

Professor Alan Boobis, Emeritus Professor of Toxicology, speaking on November’s Imperial College Podcast about the health implications of vaping.

► FULL STORY: bit.ly/reporter313-vaping



Imperial psychedelics researchers have peered inside the brain to show how taking hallucinogenic compound DMT affects human consciousness by significantly altering the brain’s electrical activity.

► FULL STORY: bit.ly/reporter313-dmt



Considering our curricula

A teaching and learning workshop exploring geographic bias in curricula is helping to further the diversity and inclusivity conversation at the College. Three people involved explain more.



IT HAS BEEN SHOWN THAT RESEARCHERS FROM INSTITUTIONS IN low-income countries can struggle to publish their research and that the wider academic community pays less attention to it once it has been published. As a way of tackling this issue, a new half-day workshop aimed at lecturers and teaching staff is exploring to what extent geographic bias exists in College curricula.

The workshop is part of a larger research project, Perspectives in Public Health, funded by the College's Excellence Fund for Learning and Teaching Innovation and led by Dr Matthew Harris from the School of Public Health. The workshop is part of a growing interest in many higher education institutions to make teaching more inclusive and also feeds into the College's overarching Learning and Teaching Strategy.

"We are taking a comprehensive approach to diversity and inclusion, broadening the conversation to include our research, which in turn feeds into our curriculum," explains Vice-Provost (Education), Professor Simone Buitendijk. "By mainly researching topics relevant from a Western perspective, we are potentially shortchanging a large number of students," she says.

"These workshops are really opening the discussion around how we look at teaching and research. It fits in with lots of other equality goals at Imperial. Our aim is to make teaching at the College more interactive. If our students are co-creating their education, and bringing their background to the table, it improves the learning experience for everyone. In the end, it all adds to a sense of belonging to a community and of making a difference."

Dr Harris continues: "The workshops are focused on what some might describe as decolonisation of our curriculum; addressing issues around whether we are currently presenting a sufficiently diverse curriculum to our students."

Integral to the workshops and the research project is a root and branch review of the reading lists for the Master's of Public Health conducted by Research Assistant Mark Skopec, the results of which were fed back to module leaders.



THE WORKSHOPS ARE FOCUSED ON WHAT SOME MIGHT DESCRIBE AS DECOLONISATION OF OUR CURRICULUM; ADDRESSING ISSUES AROUND WHETHER WE ARE PRESENTING A DIVERSE CURRICULUM.

Dr Matthew Harris, School of Public Health

The review revealed a significant skew towards publications from higher ranked academic institutions, the majority of which are located in the Global North – which includes countries in the EU, the US and Canada, Japan, Singapore and South Korea, as well as Australia and New Zealand.



“We ask those attending the workshops to consider that bias, using the findings of the review as a point of departure, which invites further dialogue,” explains Dr Harris. Before attending the workshop, participants are also asked to complete an online implicit association test (IAT), which measures attitudes and beliefs that people may be unwilling or unable to report and can highlight unconscious bias about particular ideas.

Dr Henock Taddese one of the course organisers for the Master’s in Public Health adds: “Our intention with these workshops is to empower our course leaders and create space and time for deliberation around these crucial issues. We didn’t want to be judgemental.”

As well as the reading list review, student feedback also played a significant part in the thinking behind the workshops. Dr Taddese explains: “On the Master’s in Public Health our 60 students come from over 25 countries and we need to provide a complete and relatable learning experience for all of them.

“On occasion, our students have remarked that some modules may be featuring too many UK – and frequently NHS – case studies; the workshop is hence a way to consciously preempt such feedback. As more and more of our students look to work overseas, it has also become increasingly important to feature cases of practice from different parts of the world.

“The global perspective to our courses helps to improve students’ sense of belongingness, as well as familiarity with subject matter.”

Dr Harris is clear that the course organisers don’t want to be prescriptive in how the workshop findings are acted upon by participants. “We want to hold up a mirror to the content that we currently teach, and question whether it is sufficiently diverse. We don’t want any changes that are made to be tokenistic.”

He added: “At Imperial we have a STEM-focus and incorporating humanities-thinking into such a setting can create natural tensions. Understanding that our choices as academics are anything other than wholly meritocratic can be unsettling. Our workshops are intended to create a safe space and invite dialogue on the topic.” ●

TEACHING NOTES



NSS 2020 launches

Final year undergraduates are able to rate their experience at Imperial in the 2020 National Student Survey. The survey, which is open until 30 April 2020, invites students to assess the College on areas such as academic support, learning resources and assessment and feedback. In recent years the College has taken a range of actions to improve the student experience, with some highlights including the refurbishment of over 100 teaching spaces, a review of all undergraduate programmes and improvements to feedback on exams and assessments.

Award-winning education



Imperial College Business School has won four prestigious industry awards for its online learning and hologram project at the QS Reimagine Education conference in London. Professor Francisco Veloso, Dean of the Business School, said: “These awards reflect the important work we’re doing to put students at the centre of our teaching strategy by creating inspiring and flexible learning experiences that lead to positive outcomes.”

Public health MOOCs

The School of Public Health has launched a new set of free online courses introducing public health practice. The Foundations of Public Health Practice MOOCs (Massive Online Open Course) provide more than 50 hours of content delivered by public health professionals on core topics such as health improvement, communicable disease control and behaviour change. Dr Richard Pinder, Lead for the Foundations of Public Health Practice modules, said: “By making these resources open access, we’re doing our part to cultivate the knowledge, skills and behaviours that decision-makers rely on in their public health specialists across the world.”

LONG SERVICE

Staff featured in this column have given many years of service to the College. Staff listed celebrate anniversaries during the period 1 October–31 December 2019. The data is supplied by HR and correct at the time of going to press.

30 YEARS

- Professor Sir Gordon Conway, Chair in International Development, Centre for Environmental Policy
- Professor Abbas Edalat, Professor in Computer Science and Maths, Computing
- Professor Paul French, Professor of Physics and Vice Dean (Research) – FoNS, Physics
- Dr Robert Forsyth, Reader in Space Physics, Physics
- Margaret Garcia, P2P Help Desk Administrator, Finance
- Dr James Gardiner, Reader in Molecular Physiology, Metabolism, Digestion and Reproduction
- Dr Mikila Jacobson, Research Fellow, National Heart and Lung Institute
- Professor Mark Johnson, Clinical Chair in Obstetrics, Metabolism, Digestion and Reproduction
- Professor Jonathan Mestel, Consul for Faculty of Natural Sciences and Education Office, Mathematics
- Graham Nash, Technician, Earth Science and Engineering
- Ruth Newton, Staff Resource Co-ordinator, Library Services
- Jackie O'Neill, Undergraduate Office Manager, Aeronautics
- Daphne Salazar, PA to Head of Department, Earth Science and Engineering
- Professor Chris Swan, Professor of Hydrodynamics, Civil and Environmental Engineering
- Dr Richard Szydlo, Medical Statistician, Immunology and Inflammation
- Dr Mehdi Vahdati, Principal Research Fellow, Mechanical Engineering

40 YEARS

- Dr Jeremy Batten, Divisional Manager – Resources, Surgery and Cancer
- Professor Peter Cheung, Head of Department, Design Engineering
- Professor Richard Kitney, Professor of BioMedical Systems Engineering, Bioengineering
- Professor Jeff Magee, President's Envoy
- James Mansfield, Technician, Life Sciences
- Professor Kamran Nikbin, Professor of Structural Integrity, Mechanical Engineering
- Professor Alex Taylor, Professor, Mechanical Engineering

SPOTLIGHT

**RUTH NEWTON,
STAFF RESOURCE
CO-ORDINATOR,
LIBRARY SERVICES**

30 YEARS



I'd intended to only

stay at Imperial for two years and in fact I missed my interview as the letter went missing in the post – luckily they rescheduled for me!

I started as a cataloguer. One of my first tasks was to oversee a project to transfer older items, still filed on card catalogue, onto a digital system. The job grew around me as the technology changed and I was pleased to be part of a national task force that established procedures for cataloguing our first electronic resources. I went on to head up a catalogue team, and we took on responsibility for the medical libraries after the mergers with the medical schools. Then I stepped sideways into my current role, where I oversee admin, recruitment, and training for library staff. The library is a great place – the work is interesting, and the people are very dedicated to the job and to providing an excellent service.

Over the last few years I've had more involvement with the wider College community. I'm a member of the Support Services Social Committee and I'm a tour guide for the Queen's Tower – all those stairs definitely keep you fit! I've also volunteered at various events, such as the graduation ceremonies, the science festival, and move in day for new undergrads.

IN MEMORIAM

Saeed Tahmasebi Khademasadi

Saeed Tahmasebi Khademasadi, a PhD student in the Centre for Systems Engineering and Innovation, died in a plane crash in Tehran in January.

His supervisor Professor Jennifer Whyte said: "As well as being an excellent researcher, Saeed was a friend to many in our community. He brought to the team a wealth of experience as a practicing engineer."



Tributes paid to Professor Walter Hayman at the launch of his last book

Professor Walter Hayman passed away on 1 January 2020 at the age of 93, but not before publishing an updated version of his most influential book.

Research Problems in Function Theory was first published in 1967 and contained 141 open problems in the mathematical field of functions. Problems were added over the years in what became known as ‘Hayman’s List’; a resource that drove many new research directions in the field. The new edition lists more than 500 problems.

Professor Hayman was made the first Professor of Pure Mathematics at Imperial at 1956, retaining an Emeritus Professor position at the College following his retirement.

Head of the Department of Mathematics, Professor David van Dyk, said: “Walter was an enthusiastic and highly dependable member of the Department of Mathematics for over 50 years. His legacy at Imperial will always be our Section on Pure Mathematics. When Walter arrived at Imperial we had no Pure Section, now it is one of the strongest in the world – and much thanks for this goes to Walter.”

Friends, colleagues and those who knew Professor Hayman gathered earlier this month at Imperial to celebrate his book and reminisce about his life and work. The co-author of this latest edition, Dr Eleanor Lingham from Sheffield Hallam University (pictured below), explained how she was looking for a new research problem when she stumbled across the original 1967 book.

Realising what an incredible resource it was, and how there hadn’t been a proper update in decades, she collaborated with Professor Hayman on the new edition. She described him as ‘formidable mathematician, who was very generous with his time and good at treating everyone equally’ and ‘one of the last mathematical greats’.

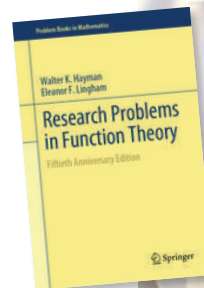
One of Professor Hayman’s daughters, Carolyn Hayman, talked about his incredible life. He was born in Germany in 1926 to a family of Jewish heritage, leading to him to come to the UK as a refugee alone at the age of 12, before convincing his sponsor family to support his parents coming over as well.

He quickly progressed in his studies and graduated from Cambridge, taking a job first at Exeter before convincing the Rector of Imperial that the College needed a Chair in Pure Mathematics.

Together with his wife Margaret (inset, above), a maths teacher who wrote many standard O-level maths textbooks, Walter founded the British Mathematical Olympiad, a move that brought western countries into the International Mathematical Olympiad.

Carolyn remembers her parents discussing maths problems over the breakfast table, visiting her father’s office at Imperial and writing in chalk all over the blackboards.

Her fondest memory, however, is attending a large maths conference with her parents in Moscow when she was 15. At the conference banquet, her father made a toast: “I am toasting my three daughters because of all my results, these are the ones I’m most proud of.”



**WHEN WALTER ARRIVED AT
IMPERIAL WE HAD NO PURE
SECTION, NOW IT IS ONE OF THE
STRONGEST IN THE WORLD.**

Professor David van Dyk, Department of Mathematics

More than meets the eye

DISABILITY HISTORY MONTH, 18 NOVEMBER–20 DECEMBER

During Disability History Month 2019, Imperial highlighted invisible and hidden disabilities. Alongside the events and activities held during the month, three members of staff talked about their experience of living with an invisible disability.



PROFESSOR DAVID NOWELL

Chair in Machine Dynamics and Director of the Vibration University Technology Centre, Department of Mechanical Engineering

CHRONIC PAIN AND FATIGUE AFTER A STROKE

Up until five and a half years ago, I had had no real health problems. I had a stroke out of the blue. I now have a nervous system disorder down my entire right-hand side. I have a lack of sensitivity in my fingertips so I can't feel things properly – I can't find my keys in my pocket, and I can't manipulate things as well in experimental work.

Being disabled has made a difference in how I approach my work. I think I'm much more empathetic and understanding now, more patient – with other disabled people, but also with people with other needs, like colleagues with young families.



CARYS DALLY

CASE Trainee, Advancement

CHRONIC PAIN AFTER MYALGIC ENCEPHALOMYELITIS

I had myalgic encephalomyelitis from when I was nine until I was fourteen. There were periods where I couldn't walk, or see properly, or eat solid food. I missed five years of school. It took up most of my childhood.

I want to broaden people's understanding of what a disability is. The majority of disabilities are invisible, and no two disabilities are the same – two people can have technically the same diagnosis but need different support. I try to be open and honest about it because I think it's important, but it is hard.



DR GUS SUBERO BORJAS

Lecturer, Centre for Languages, Culture and Communication

ADDISON'S DISEASE, DYSLEXIA AND ASPERGER'S

I explain to students at the start of the year that sometimes I might have to take medication in the middle of a class, or eat something, or sit down as I feel faint. I have Addison's disease which affects hormonal balance – my body doesn't produce hormones in the same way as it does for most people.

If you're disabled, deciding to declare it is a very personal thing, but I'd like people to know that there's no shame in declaring it and there's a great deal of support on offer. You might worry that you'll be treated differently – but in my experience, declaring your disability only opens more doors.

▶ READ THE STORIES IN FULL ON IMPERIAL STORIES: bit.ly/reporter313-DHM

Coming up at Imperial

The future of London's infrastructure, an artistic exploration of the supernova and the women of Imperial.

► SIGN UP FOR A FULL EVENTS LISTING: www.imperial.ac.uk/whats-on



11 FEBRUARY, 17.15

The Paviers Lecture 2020

Andy Mitchell, Chief Executive of Tideway, on building infrastructure for a twenty-second century London.

Lecture theatre 164, Skempton Building, South Kensington Campus

12 FEBRUARY, 17.30

The hard science of soft materials

Professor Maria Charalambides discusses her varied research career and how it has recently moved into tackling the plastic pollution crisis affecting our land and sea.

Lecture theatre 200, City and Guilds Building, South Kensington Campus



29 FEBRUARY, 19.30

Imperial College Symphony Orchestra Spring Concert

Imperial's symphony orchestra performs award-winning composer Stuart Hancock's new Violin Concerto and Mussorgsky's Pictures at an Exhibition.

Cadogan Hall, Sloane Square



10 MARCH, 17.30

2020 visions for engineering design

Join Emeritus Professor Robert Spence, Senior Research Investigator, for the annual Peter Lindsay Memorial Lecture from the Department of Electrical and Electronic Engineering.

Lecture theatre 200, City and Guilds Buildings, South Kensington Campus



6 APRIL, 17.00

Sir Ernst Chain Lecture 2020

With Frances Arnold, Linus Pauling Professor of Chemical Engineering, Bioengineering and Biochemistry, and Director, Donna and Benjamin M. Rosen Bioengineering Center.

Lecture theatre G16, Sir Alexander Fleming Building, South Kensington Campus

HIGHLIGHTS



2-6 MARCH

Women@Imperial Week 2020

Events every day including talks and lectures, networking sessions, career development workshops and more. Highlights include:

2 MARCH, 11.30-13.00

Postdoc and Fellows Development Centre panel event

SALC 1, Sherfield Building, South Kensington Campus

3 MARCH, 14.00-16.00

Career moves session

White City Campus

5 MARCH, 16.00

Women in STEM: Dr Victoria Salem

Wolfson Seminar Room 5, Hammersmith Campus



18 MARCH - 1 MAY

Supernova

Explore the supernova in an exhibition of painting and sculpture from artists Andrew Ekins, Vincent Hawkins, Sarah Kogan, Mali Morris and Stephen Nelson.

Blyth Gallery, Sherfield Building, South Kensington Campus

Do you have
an excellent
colleague?



We need your nominations!

The President's Awards for Excellence are open! They recognise the achievements and hard work of all staff at the College, across research, teaching and professional services roles.

You can nominate your colleague for:

- **Excellence in Culture and Community**
(Leadership; Equality, diversity and inclusion; Collaboration and communication)
- **Excellence in Education**
(Outstanding assistant supervisor; Teaching; Teaching innovation; Research supervision; Supporting the student experience)
- **Excellence in Research**
(Early career researcher; Research support; Research team; Innovation and entrepreneurship; External collaboration and partnerships)
- **Excellence in Societal Engagement**
(Schools engagement; Community engagement; Engagement with research and/or patient engagement)
- **The Imperial Garden Party**
(Celebrating staff who have made exceptional contributions to the College within the last year)

▶ **SUBMIT YOUR NOMINATION BY 7 FEBRUARY 2020:**
www.imperial.ac.uk/staff-recognition-awards



ALL EARS?

Listen in to explore our latest news
and research on the Imperial podcast
imperial.ac.uk/podcast



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