Stepping up
Three Imperial women rising to the challenge of their potential
→ CENTRE PAGES
Too many avoidable errors in patient care

Avoidable harm to patients is still too high in healthcare in the UK and across the globe and safety therefore must be a top healthcare priority for providers and policy makers alike — according to the Imperial authors of two new reports.

Both reports, produced by NHS Imperial Patient Safety Transnational Research Centre (IPSTRC), provide evidence on the current state of patient safety and how it could be improved in the future. They urge healthcare providers to embrace a more open and transparent culture to encourage continuous learning and harm reduction.

Professor Arun Doshi, Director of the NHS Imperial IPSTRC and senior author of the reports, said: “Too long the mind set has been that patient harms are inevitable, and that nothing can be done to prevent them. Although we currently face many changes – such as increasingly complex patient cases and limited resources – we must focus on creating safer environments for patients. This should involve a systems-based approach, to improve patient safety. This would include: using digital technology to improve safety, providing robust training and education, and strengthening leadership at the political, organisational, clinical and community levels.”

Sustainable mobility in focus at Business challenge week

A car sharing service for women and a concept for more sustainable mobility were just two of the innovations presented at Business challenge week, which this year’s Imperial Innovation Challenge.

Students from the Full Time MBA programme were challenged to come up with a business proposal for a product or service around the theme of “Smart and Sustainable Mobility” and present their ideas to a panel of visiting experts, following a week of guest tasks, demonstrations and workshops across Imperial.

The annual challenge is designed to test the business skills that the students have developed during their MBA, and encourage them to come up with innovative solutions to pressing societal challenges. One such solution was MforW (Women for Women) – a proposed app that provides advice to women on how to make a safer, more sustainable commute to work in some countries, travelling by public transport can be particularly intimidating or even dangerous for women. In London, for example, a study found that 95 per cent of women said their mobility was restricted because of fear of male harassment in public places.

Clean through Triple crown

A team of MBA students from Imperial College Business School have won the Financial Times’ ‘Triple crown’ award for the second year in a row. The Gazi, hosted at the Financial Times’ London office, and compered by FT Management Editor Andrew Hill, saw competing business schools from across Europe testing their business knowledge.

Imperial’s team was made up of Full Time MBA students Janne González Martíñeiz, Chaozhi (Eddie) Yuan and Seashore (Sean) Poynter, who won the Entrepreneur MBA for students Simon Brownefield and George Gornim, and Executive MBA student Faisal Dajani.

Professor Simone Buitendijk appointed Vice Provost for education

Leading university educator and clinician Professor Simone Buitendijk is to become Imperial College London’s new Vice Provost (Education) from 1 August 2016.

Professor Buitendijk will join the College from Leiden University in the Netherlands to lead Imperial’s vision for education and student experience.

Professor Buitendijk is currently Vice-Rector (Magnificus) at Leiden with responsibility for education and student affairs. Over her five-year times she has led university-wide strategies to enhance students’ educational experience, promote innovation in teaching and grow support for students. She has served on League of European Research Universities (LERU) steering groups for teaching and learning and for gender equality.

An internationally respected expert for her work on patient safety, health, Professor Buitendijk is Professor of Women’s and Family Health at the Leiden University Medical Centre, having held the Netherlands’ first professorial chair for primary care in obstetrics.

Welcoming Professor Buitendijk, Provost Professor James Stirling said: “Our College Strategy for 2015-20 places excellence at the heart of everything we do, and in Professor Buitendijk we have an educationalist who can take our educational offer and quality of student experience to the next level.”

Professor Buitendijk said: “Imperial is among the top overseas universities. It is a great opportunity to come here and work with an extremely talented, ambitious and international group of students. I am very excited about working to support them to fulfil their dreams and their potential”. Professor Buitendijk succeeds Professor Debra Humphris as Vice Provost (Education). Professor Humphris became Vice-Chancellor of the University of Brighton in December 2015.

New app to guide and remind pregnant women about vaccines

A new app to guide and remind pregnant women about vaccines has been launched. The Maternal Immunisation (MatImms) app will inform and guide pregnant women about infections that could be harmful to them and their baby, such as flu and whooping cough, and which could be prevented by getting vaccinated in pregnancy. Researchers and clinicians at Imperial College London and Imperial College Healthcare NHS Trust teamed up to develop the app after becoming concerned about the low uptake of certain vaccines amongst pregnant women. Download the app here: bit.ly/MatImms

Education Secretary launches women’s leadership report

Nicky Morgan, Education Secretary and Minister for Women and Equalities, launched a report on women’s leadership in UK universities at Imperial this month.

WomunCount: Leaders in Higher Education 2016, authored and presented by Norma Jarboe OBE, considers women’s representation in senior leadership positions across the university sector and tracks progress made since the 2013 report on this topic.

It concludes that the higher education sector is making steady progress towards gender balance, and highlights an encouraging rise of women’s representation on governing bodies and an increase of gender balanced boards.

Speaking at the event, Nicky Morgan MP noted that there was a clear business case for improving gender parity leadership positions: “Bringing women into roles where glass ceilings previously existed gives us the opportunity to harness our entire pool of talent, rather than just a portion of it. “Unlocking that potential gives Britain and our institutions the best chance to succeed in a global context.”

However the report notes that the top two senior roles in university governance – the Chair of the Governing body and the Vice-Chancellor – remain much further from parity, with women holding only roughly a fifth of these roles. The report also profiles women recently appointed to senior leadership roles in the Higher Education sector, including Imperial’s President Professor Alice Gast, Professor Jenny Higham – Principal of St George’s University London and former Vice Dean for Institutional Affairs at Imperial, and Professor Debra Humphris – Vice-Chancellor at the University of Brighton and Imperial’s former Vice Provost (Education).

Dr Charles Donovan, Principal Teaching Fellow and lecturer on the Full Time MBA said: “The purpose of this year’s challenge was to look at how technology can produce solutions for businesses in the sustainable mobility space. Through exposure to guest speakers and the wealth of innovation taking place across the College, students were inspired to come up with disruptive ideas in a very short space of time. The best proposals looked at how a change for women. “A new app to guide and remind pregnant women about vaccines has been launched. The Maternal Immunisation (MatImms) app will inform and guide pregnant women about infections that could be harmful to them and their baby, such as flu and whooping cough, and which could be prevented by getting vaccinated in pregnancy. Researchers and clinicians at Imperial College London and Imperial College Healthcare NHS Trust teamed up to develop the app after becoming concerned about the low uptake of certain vaccines amongst pregnant women. Download the app here: bit.ly/MatImms”

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New network for Operational Excellence practitioners

Imperial’s Community of Practice has been established to bring together staff who have received training as part of the Operational Excellence (OE) Programme, and provide support and ongoing development opportunities.

The Community offers an online space to OE-trained staff, providing tools and resources, as well as a message board to share experiences and best practice. Staff are offered the opportunity to attend further specialist training and events to continue developing their skills.

Alessia Chia, one of the ten that made the trip, commented on the experience: “London is such a culturally vibrant city and very different to Singapore. It’s been great to be immersed in a whole different culture this week. Seeing the NHS, which is very different to the system we have here, in Singapore, has been particularly interesting. I’ve loved so much to take back to LKCMedicine.”

Staff trained in Operational Excellence gather at a special event

Training and ongoing development are a key part of embedding OE within the College.

Vincent Gin, then shared her experiences and insights on achieving results, gleaned from her work helping to establish the airline within three months.

Angus Brown is Head of User Services in Imperial Excellence. He was selected for their contributions.

Professor James Stirling, Imperial’s Provost, spoke about the OE Programme and the progress made so far: “Since the launch of OE, we’ve come a long way in a remarkably short time. Everyone has a role to play in delivering excellence, and the principles of OE put the people involved at the heart of the process.”

Guest speaker Julie Robinson, previously Customer Services Director at

Let them in

The Economist • 26.02.2016

In a letter to the Economist, Imperial’s President Professor Alice Gast says Britain should be rolling out the red carpet for the best and brightest foreign students. “What do Ernst Chain, Andre Geim and Venkatarman Ramakrishnan have in common, apart from their Nobel prizes? They were all welcomed to Britain from abroad: a world without their pioneering work at British universities on penicillin, graphene and ribosomes would be a much poorer one. Foreign students drive innovation and entrepreneurship in Britain. If we turned our backs on international students, Britain’s economy and society would lose out.”

How progress will affect us

FINANCIAL TIMES • 07.02.2016

Swift changes in technology are transforming the way we live. The FT asked four distinguished thinkers to predict what aspects of this new industrial revolution will affect us most.

Professor Saesee Ahmed-Kristensen, deputy head of the Byron School of Design Engineering at Imperial, says 3D printing will enter the mainstream within the next five to 10 years. But as technology such as 3D printers becomes cheaper and more sophisticated, it also provides people with the power to do harm. “When we are educating designers the ethics are very important,” says Professor Ahmed-Kristensen.

Bigger than the Higgs

NEW SCIENTIST • 03.01.2016

It looks like the Large Hadron Collider at CERN may have found a surprise massive particle that gives a glimpse into a better – and entirely unexpected – theory of reality, New Scientist reports. The hopes spring from two ‘bumps’ that have appeared independently, in the same place, in the latest data from the LHC. First, though, they have the tough task of balancing the facts with the lure of finding something new. Bump into someone you know in a big city once and you are likely to be amazed by the coincidence, forgetting the 99 times you didn’t bump into them, says LHC physicist Professor Ulrik Egede (Physics). Our human minds are primed to seek causes for effects even where there might be none. “But at the same time you have to be excited because otherwise you can’t get anywhere in science.”

Lord Winston warns of Brexit ‘disaster’

BBC WALES • 02.03.2016

One of Britain’s best known scientists said it could be a “disaster” for university research if Britain left the European Union, BBC Wales reports. Professor Lord Robert Winston, Professor of Science and Society at Imperial, said: “It’s very clear if we came out of Europe, we would get much more out than we put in in science, we will lose massively.” The Labour life peer was speaking at the Aneurin Bevan conference in Cardiff. But the Scientist’s for Britain group is arguing that Britain would be no worse off by leaving the EU. The group, which claims to have 150 members, said there were 15 countries outside the EU which successfully apply for European funding.

Top of the Scots

An Imperial pioneer in bioengineering has been made a Fellow of The Royal Society of Edinburgh (RSE). Professor Richard Kitney is one of 56 ‘distinguished individuals’ elected to bestow the RSE this year. New fellows come from sectors that range from the arts, business, science and technology and academia, and their varied expertise is expected to support the advancement of learning and useful knowledge in Scottish public life. Professor Kitney was the founding head of the Department of Bioengineering and he currently co-leads the Centre for Synthetic Biology and Innovation at the College.

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For us in the undergraduate school

students and their Singaporean comrades

watch the relationship between our London

confirmed.

Medicine at Imperial, said: “It has become

part in a range of academic and social

London. Over the week the group took

Singapore later this year.

own students will visit LKCMedicine in

exchange a similar delegation of Imperial’s

the two medical schools. As part of the

designed to enhance links between

College as part of an exchange programme

The ten students, all second year

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A student delegation from Lee Kong Chian

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Bat wings inspire unique design of miniature robot aircraft

Scientists have developed prototype bat wings that could be used in the next generation of unmanned micro air vehicles (MAVs).

MAVs are increasingly being used in a wide variety of civilian applications such as surveying remote and dangerous areas. However, one of the current drawbacks with this technology is that designers have to choose between fixed-wings, which enable long range flight, or rotary-wings, which enable high manoeuvrability.

Now a team of researchers from Imperial and the University of Southampton have developed bat-inspired wings that are made from a polymer membrane and artificial muscles, which means they can be flexible in their configuration. The team say the advantage of this is that it may enable MAVs to be both manoeuvrable and also able to fly over longer distances, making running them more economical.

The wings incorporate polymers that are activated when an electric current runs through them. This makes the wings stiffen and relax in response, which helps them to counteract the air they are flying through. This technology uses no mechanical parts, making the wings easier for engineers to maintain.

Dr Rafael Palacios (Aeronautics) said: “The prototype wing we’ve developed could enable a MAV to constantly adapt to its environment in real-time. This ability to reconfigure would also allow multiple missions to be carried out using the same MAV, instead of us having to develop a totally new craft every time it needs to do a new type of task.”

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Behind the science with Dr Rafael Palacios

Talk us through the process from bio-inspiration to concept

There is a very extensive literature on biological fliers and as an engineer I am used to deconstructing complex problems into their constituent elements. In this case, we decoupled propulsion, which bats achieve via flapping, from the ability to execute fast manoeuvres, which is done by stiffening of the membranes on their wings. Then we sought an engineering solution, working with electrically-responsive elastomers.

You’re known as a passionate teacher (having won best supervisor in the 2013 SACA Awards) – do you try and get students involved building fliers?

Of course, and in fact a vast majority of the research in my group is done by PhD students, but we do have also undergraduate students working on their final-year projects on related problems. A big challenge in our line of research is to find problems that are tractable within the short time that undergraduates can spend on it, but we have always found something interesting.

You’ve worked in industry for Airbus – how does it compare with academia?

Industrial research is of course more short-term, but at the same time you know you are working on projects that do have a direct impact – indeed you even know the people that may be using any technologies you develop. Academic research gives you some more freedom and definitely the ability to develop a long-term vision.

Do you think we’ll ever see humans equipped with intelligent polymer wings – perhaps like the squirrel suits skydivers use?

I would like to see that, but as of now the sweet spot is for very small scale vehicles. Electroactive polymers take relatively small pressure loads, so they would not sustain the stresses required to fly large payloads (i.e. a person).
Imperial marked International Women’s Day with a week-long celebration of the contributions women have made to life at the College.

The second Women@Imperial Week ran from Monday 7 to Friday 11 March, with a number of events held across the College. The week was preceded on Wednesday 2 March by the Launch of the Women@Imperial report, which looks at senior leadership positions across the university sector and tracks progress made (page 3), as well as a School of Public Health Athena Swan Lecture by Dr Fiona Godlee, Editor in Chief of the British Medical Journal.

Monday 7 saw the formal launch of Women@Imperial with a special reception and public exhibition of photographs and archive material highlighting contributions from female researchers, pioneering women from Imperial’s history, and female entrepreneurs at the College. Imperial’s President Professor Alice Gast addressed the reception, saying: “Every day we have reasons to celebrate women at Imperial.” She added: “We are committed to improving gender equality at Imperial, and I look forward to making progress over the coming days and months.”

During the reception Professor Dot Griffiths, Provost’s Envoy for Gender Equality, talked about the progress that she has seen over her time at the College, adding: “Tonight is a fabulous occasion – it makes me so proud to be at Imperial and work with all you wonderful women. It’s just such a privilege.”

A Gender Summit was held on Tuesday where Provost Professor Janine Streling presented a summary of the feedback received through recent staff questionnaires and focus groups which looked at what the College does well to support women, and what it could do better. To mark International Women’s Day and Women@Imperial Week, for this issue of Reporter we’ve shared three stories from women at the College in different roles and their various experiences.

1/ Sumoyo Rahman
MEng in Biomedical Engineering

“My course is in a field which is focused on the advancement of healthcare by bringing technology into clinical settings. All the devices you see in a hospital are made by bioengineers – the diagnosis center, MRI scanner, devices used in surgery, prostheses. It’s a vast field. In my first year alone I took modules in mathematics, medical science, electromagnetism, vibration and waves. One of my main interests is in understanding the mechanisms of the various actions of the human body. The project I’m currently working on is looking at adipogenesis – the process by which precursor cells mature and specialize into fat cells. We are applying compressive forces to these precursor cells and we’re trying to see how that affects their maturation. The experiment has implications for our view of obesity and how exercise and the movements of the body can impact the maturation of fat cells.

Originally, I’m from Bangladesh, and although my family have always been very supportive, I think there were still some misconceptions before I came to Imperial and a tendency to take a back seat, compared with male peers. But during my project work I’ve seen women working with a mixed group and the girls were particularly vocal in one debate. That in turn gave me a lot of confidence, and from then onwards I’ve put my views forward and shared my own ideas more often.”

Clockwise from top: Beth Hoblyn, Dr Nathalie MacDermott, Sumoyo Rahman

“Don’t let anyone stop you. Take any opposition or prejudice on the chin.”

2/ Beth Hoblyn
Apprentice Maintenance Engineer, Estates Division

“As part of my apprenticeship I’m doing operations and maintenance engineering for the College’s estate, and I know that I’m making a difference to people, the engineers keep the building running and without us there’d be no hot water, heating, lights and so electricity to make the experiments and research happen. That makes me feel good about my job.

Engineering, and engineering maintenance in particular, is a very difficult industry for women to break into because traditionally it’s a male domain. Stereotypically we are seen as weaker and in fact I still seem to get offered physical help a lot. But think women can be stronger in certain situations. In engineering you’ve got to be calm because things can go wrong. You’ve got to do things slowly, and you’ve got to think things through methodically. I think sometimes men can have a tendency to rush things.

I’ve seen that men can make some mistakes sometimes because they don’t have the same level of confidence. It’s important that when you do have confidence you should go for it. And when I’ve got a challenge I’ve got to be strong and not to just think that I’m not capable. When the Ebola epidemic broke out in West Africa, Samaritan’s Purse were already working in Liberia, and they decided to respond. At the beginning of July 2014 I received a phone call asking if I would be available to travel to Liberia to work in a treatment facility in the capital Monrovia. I flew out on the 30th of July 2014, originally for two weeks. I then went back to Liberia for six weeks from October 2014 to March 2015 and lead the clinical response for Samaritan’s Purse.

Now I’m due to go to Sierra Leone to carry out field work collecting samples from control groups who didn’t contract Ebola to see if that’s due to some protective genetic effect. I think I always assumed I wouldn’t be working with Ebola in a research capacity – but I never really thought I’d be at the forefront of the biggest Ebola epidemic. The world has never seen! You shouldn’t be limited by what other people think or by other people’s preconceived ideas of what you should do. If it interests you and it’s what you’re passionate about then you should go for it.”

3/ Dr Nathalie MacDermott
Clinical Research Fellow, Department of Medicine (St Mary’s Campus)

“My research at Imperial looks at genetic susceptibility to the Ebola virus infection – so finding out whether there is something in each person’s genetic makeup that makes them more or less susceptible to infection with Ebola virus. I also work with an aid organisation called Samaritan’s Purse, doing disaster relief for them in certain situations. When the Ebola epidemic broke out in West Africa, Samaritan’s Purse were already working in Liberia, and they decided to respond. At the beginning of July 2014 I received a phone call asking if I would be available to travel to Liberia to work in a treatment facility in the capital Monrovia. I flew out on the 30th of July 2014, originally for two weeks. I then went back to Liberia for six weeks from October 2014 to March 2015 and lead the clinical response for Samaritan’s Purse.

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Anyone who uses public transport in London will have no doubt been hooked in by ads promoting career coaching services, products and books. It plays on a desire most of us have to be as effective as possible at our jobs and make the most of opportunities that may come our way.

Coaches

Genevieve Timmins
Web and Communications Officer, Department of Medicine

I contacted the Coaching Academy because I needed support with identifying a pathway for career progression. At the time, I was working on a personal project alongside my official role, which I wanted to formally incorporate into my job. The most important thing that I gained from Kelly’s coaching was learning to prioritise this project. I was supported in defining what I wanted as a result of completing it, and how it would help me in the broader context of my career. As a consequence, I was motivated to discuss my professional development with my manager, and now work officially in a split role as a Section Manager and Web and Communications Officer.

Mutual benefit

Coaching is done in the strictest confidence, but one coach-coachee pair agreed to talk about their respective experiences.

COACHES

Steve Rochford
Site Manager in the ICT Division, where he has worked for eight years.

Partly this is due to a desire to give something back to the community. I recognised what a powerful tool it can be in bringing about positive change in a person’s perception of their own ability. Providing a platform that enables them to find their own solutions to a problem/situation can be very empowering for that individual. Personally, I have really enjoyed supporting my coaches through their journeys and seeing them succeed in their goals. Also, through my own experience as a coach and manager I have come to realise how effective the approach can be when used within a management setting. It affords team members ownership and accountability, with the knowledge that they are fully supported by their manager.

Tell me about your role firstly I lead a ‘customer service’ team, essentially providing desktop computing support across the Faculty of Engineering. The fun thing about the job is, when you go to fix someone’s computer, you can have a chat with them – often simply asking “so what do you do?” That way you really get under the hood of the organization and start to feel more involved in the amazing work that goes on here. The other week I was helping an academic who had been interviewed for a David Attenborough documentary. He was asking me how to get this DVD into a short clip to share in a PowerPoint presentation. We got talking about these insects they’d been filming. I’m not sure you’d get that sort of thing in the corporate IT world!

Did those sort of interactions provide the impetus for getting involved in events? Partly. I have been busy for the first few Imperial Festivals, so was not involved. ‘so what do you do?’ That way you really get under the hood of the organization and start to feel more involved in the amazing work that goes on here. The other week I was helping an academic who had been interviewed for a David Attenborough documentary. He was asking me how to get this DVD into a short clip to share in a PowerPoint presentation. We got talking about these insects they’d been filming. I’m not sure you’d get that sort of thing in the corporate IT world!

What were you involved in doing? I spend most of the time hanging out in flocks and talking to people on Exhibition Road. I remember meeting a few children who really wanted to become scientists, and so we were just brimming with excitement about the prospect of actually meeting some real-life scientists at the Festival. That really hit home why the event is so great.

What would you say to those thinking about volunteering for the Festival? It’s easy, especially when you’ve been here many years, just to exist in your own bubble and get on with your job. But I think it’s really beneficial to get involved in something like the Festival to find out what goes on at College and see your place in the bigger picture.

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“…”

A lot of coaches say that being a coach has made them better managers of their own staff.”

Researcher to tackle marathon for life-saving initiative

Imperial researcher Dr Mike French will run the 2016 London Marathon to help the College treat thousands of children with parasitic-borne illnesses.

Mike will tackle the gruelling 26.2 mile route in April this year, as part of a group of runners raising more than £26,000 for the College’s Schistosomiasis Control Initiative (SCI).

Mike said: “Running the Marathon felt like a wonderful way to highlight the work that the SCI is doing to tackle this and encourage people to support us. Our fundraising target is £26,200 – £1,000 for each mile of the race, which will provide more than 70,000 treatments.”

It’s not the first time Mike has taken part in the Marathon. He took up the challenge for the first time in 2003. He said: “At the time, I swear I’d never do it again. But as time passed, it started to feel like a good idea again!”

It’s hasn’t all been plain sailing for Mike. He’s currently recovering from Typhus, a serious illness he contracted in Ethiopia which causes flu-like symptoms, confusion and severe muscle pain.

“It throw a bit of a spanner in the works. I’m following a 16 weeks training plan to prepare for the race, but for the first three weeks I couldn’t do anything at all. I’ve still got a bit of dizziness and disorientation which presents challenges during training. I’m fine as long as I don’t look left or right while I’m running. That’s ok on a treadmill, but less so when I have to dodge donkeys and cattle on the Ethiopian roads.”

MIKE HAS ALMOST REACHED HIS £26,200 TARGET!

Please help him cross the finish line:
bit.ly/Imperial-Mike

Concerted effort

Schistosomiasis infections are caused by parasites which enter the body through contaminated water in areas of poor sanitation. Left untreated, the infections can lead to the development of the threatening conditions such as bladder cancer, and liver damage. The SCI assists ministries of health in affected countries to design and implement large-scale control programmes – distributing drugs donated by the pharmaceutical industry to affected areas to reduce infections significantly. The SCI has facilitated delivery of over 60 million treatments to children and at-risk adults. Mike’s focus is on rolling out control programmes in Yemen and Ethiopia, where he is based.

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One of the first things Mike did after finishing the Marathon in 2003 was to run a short distance on the course, and hand out fliers and talking to people on Exhibition Road.

I remember meeting a few children who really wanted to become scientists, and so we were just brimming with excitement about the prospect of actually meeting some real-life scientists at the Festival. That really hit home why the event is so great.

What would you say to those thinking about volunteering for the Festival? It’s easy, especially when you’ve been here many years, just to exist in your own bubble and get on with your job. But I think it’s really beneficial to get involved in something like the Festival to find out what goes on at College and see your place in the bigger picture.

©Eugenia Chenoweth, Communications and Public Affairs

Corresponding author

Dr Mike French
Department of Medicine

Mike will tackle the gruelling 26.2 mile route in April this year, as part of a group of runners raising more than £26,000 for the College’s Schistosomiasis Control Initiative (SCI).

Mike said: “Running the Marathon felt like a wonderful way to highlight the work that the SCI is doing to tackle this and encourage people to support us. Our fundraising target is £26,200 – £1,000 for each mile of the race, which will provide more than 70,000 treatments.”

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Eugenia Chenoweth, Communications and Public Affairs

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Alumni launch a wearable digital ski coach

The idea started back in 2012 when, during his PhD at Imperial, keen skier Jamie began to develop an app to track skiing performance just using the motion sensor on a smartphone. A beta version was tested by more than 3,000 students on the Oxford and Cambridge ski club winter tours in the 2013/14 ski season. After receiving feedback on the app the newly formed Motion Metrics team decided to develop a pressure sensor to provide information on pressure that the ski community wanted.

“We were quite hesitant at first but after the feedback we decided to go for it,” Jamie said, “the sensor we’ve got now is really accurate and uses 48 sensors on each foot to map the pressure and movement of the wearer.”

—JON NARCROSS, COMMUNICATIONS AND PUBLIC AFFAIRS

Product Development

In 2014 the team took part in Imperial Innovation’s Venture Catalyst Challenge (VCC) before joining the HAX hardware accelerator in Shenzhen, China. “The VCC was great for us and we ended up meeting one of our investors there. They’ve got some great coaches and mentors which is a big help,” added Jamie.

With the support of their mentors, the team worked with a number of partners to develop and manufacture their current prototypes – splitting their development time between London, China and testing their designs with professional skiers on the slopes.

$100,000 amount raised by Carv on Kickstarter (from a goal of $50K)

3,000 student skiers helped test the device

Blog Spot: Student blogger Harry: My week

Currently, we are working through 3D-modelling a gearbox for a cement pump. This is probably one of my favourite bits about my course, because fundamentally mechanical engineering is about applying physics and maths to solve problems, and this epitomizes what we do in design and manufacture. Well, that and a lot of sketching.

I practised a little bit of accordion in the evening, which is slowly improving besides my lack of musical capability! I think the dream would be to perform in public somewhere. I looked up the rules for busking at South Kensington tube station a while back, but I think you need to audition in front of a panel of judges and go through a whole process. The next best thing would probably be having a go at the open-mic night at the local pub. In the meantime, I will settle for people overhearing me in the Woodward Music Rooms while I play the star wars cantina band theme.

More from Harry and our other student bloggers: www.imperial.ac.uk/studentblogs

Name up in lights

For her new book Aurora, Imperial plasma physicist and fusion researcher Dr Melanie Windridge explores the science and stories of the Northern Lights.

The bright dancing lights of the aurora are caused by collisions between electrically charged particles – or plasma – from the Sun that enter the Earth’s atmosphere. “The aurora are most seen above the magnetic poles of the northern and southern hemispheres where the earth’s magnetic field is weakest allowing some solar particles to enter the earth’s atmosphere and collide with gas particles,” says Dr Windridge.

A beta version was tested by more than 3,000 students on the Oxford and Cambridge ski club winter tours in the 2013/14 ski season. After receiving feedback on the app the newly formed Motion Metrics team decided to develop a pressure sensor to provide information on pressure that the ski community wanted. “The idea came about slowly,” Melanie says. “I always see these projects as a sort of sexual growing – it’s a bit just a glimmer of interest. As a plasma physicist, I began to think that I should really see the aurora as it’s a plasma phenomenon.”

Melanie visited Sweden, Norway, Iceland, Canada, Scotland and Southland in her quest for stories, science, and the lights themselves. “There are many reasons why we might want to understand the aurora and plasmas in general,” Dr Windridge says. “At Imperial we’re trying to understand plasmas and control them to make a new clean energy source for the future.”

But science was far from being the only thing on the agenda for Melanie’s research and writing.

“It was always my intention to look at the folklore and the stories – the ‘other side’ of the lights. Whenever you go around the arctic there’s a common theme of spirits so I wanted to see if that’s still there now that we’ve studied the phenomenon a lot more and have a scientific understanding of it. I think it is.”

Melanie gained PhD at Imperial and is an Academic Visitor in the Department of Physics, as well as a consultant for the nuclear fusion start-up Tokamak Energy.

—ANNE CUNNINGHAM, COMMUNICATIONS AND PUBLIC AFFAIRS

Aurora: In Search of the Northern Lights is available now; published by Harper Collins: bit.ly/MelanieLights

What is a Hackspace and why do we need one?

It has over 1,200 members, hundreds of projects and unlimited possibilities, but what is the Hackspace?

Established in September 2014, the Imperial College Advanced Hackspace has grown in popularity around the College community. By facilitating and providing access to workshops across Imperial’s campuses, Hackspace staff and students are able to transform prototypes into products. As a catalyst for the development of ideas and products to tackle some of society’s most pressing issues.

A recent exhibit provided a chance to see some of the projects that have developed with the assistance of the Hackspace, either in providing modest start-up capital or networking opportunities between people from different research areas.

Hackspace Manager Larissa Kunstel-Tabet explains: “The Hackspace here at the College allows members from anywhere at Imperial to come together and prototype their concepts, either for research, personal projects or entrepreneurial ideas.”

Dr Rich Jones (Mathematical) is one of the founders and academic leads of the Hackspace. He said: “The reason we call it the Advanced Hackspace is because we have such resources for idea development at Imperial that we can take the general hackspace concept and take it further.”

New workshops continue to be added to the Hackspace and the membership is growing steadily. The group is also aiming to provide a physical space at the White City Campus where people can work on their projects and industry events can be run.

“It offers the prospect of also linking with the community at White City,” Nick says. “It’s interesting because it provides a closer engagement between Imperial and those from that area, rather than just predominantly the South Kensington community.”

“Unlike a traditional space, the Hackspace is self-organised, self-governed and user-run.”

“He has created a low-cost baby incubator to reduce infant mortality, after he learned that there are over 300,000 deaths in the first week of life, 99 per cent of which are in developing countries without the resources to help save these children. Sanghavi’s concept and design is based on a simple yet life-saving concept – it’s a box for life.”

—HAYLEY DUNNING, COMMUNICATIONS AND PUBLIC AFFAIRS

Hackspace Manager Larissa Kunstel-Tabet says: “It will mean they can still feel as part of the Imperial family.”
that content out there as it’s been so core as a platform to building Imperial’s brand.

The nature of your role means working closely with Imperial’s leadership. What have you learned about different approaches to leadership?

I’ve been very lucky to see a really good range of very talented people – not just the Rectors/ Presidents, but other members of the cast too – Deputies Rectors, College Secretaries, CFOs, Dean, Council members. I think about everything above, good leaders in universities quickly understand where they are in their situations, and also where they stand and what they want to achieve.
22 MARCH, 18.00
Energy Futures Lab annual lecture
Energy Futures Lab is delighted to be hosting Nick Winser Chairman of Energy Systems Catapult to discuss global energy policy challenges, innovation and the role the Catapult can play. The global politics of energy and the environment are high on the agenda for all economies, evidenced by the recent deal at the climate change summit in Paris. But can the UK honour this commitment? In his lecture, Nick Winser will review the UK’s energy policy and discuss the recent shift in focus towards energy innovation to meet the 2050 climate and energy targets.

11 APRIL, 18.00
Transforming growth: Climate policy today for a sustainable tomorrow
UN chief climate diplomat Christiana Figueres delivers the Grantham Institute Annual Lecture 2016. Christiana Figueres is the UN’s chief diplomat on climate change, and oversaw the delivery of the Paris Agreement following the global climate change negotiations at COP21 in 2015. She has been Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC) for six years, a role she will hold until July this year. Whilst this lecture is now sold out, the whole event will be live streamed via the College YouTube.

22 MARCH, 12.00
Fluctuation phenomena in optics
MIT’s Professor Steven G. Johnson delivers a lunchtime colloquium at this joint Maths and Physics event

05 APRIL, 18.00
Integrated energy systems and their role in integrating variable renewable energy
Professor Mark O’Malley, Director of the UCD Energy Institute will discuss the use, and role, of integrated energy systems

07 APRIL, 09.45
Modelling from Structures to Systems
EMBL’s Peer Bork and EBI’s Janet Thornton provide the key notes in this full day symposium on modelling

25 APRIL, 12.30
Research showcase on bacterial infections & the molecular engineering of antimicrobial surfaces
Hear Imperial research perspectives on the challenges posed by the transfer of bacteria and their associated infections

26 APRIL, 19.00
Microchip medicine
Regius Professor of Engineering Chris Toumazou (Institute of Biomedical Engineering) delivers this Friends of Imperial College talk

USB Nightmare!
Losing your data could be a horror story. Avoid storing information on USB drives and external hard drives as they can be lost, stolen or infected by viruses.

What to do:
• Use College’s recommended file storage to save information (H: drive, group space, OneDrive for Business)
• If you must use a USB device, encrypt it and make sure it’s not your only copy
• Never plug in USB devices from unknown sources

It’s everyone’s responsibility to be secure. For storage options and encryption advice visit www.imperial.ac.uk/be-secure

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