



University of
Nottingham

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Uniting to create a world
without slavery

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Is There Life on Mars?
Inside NASA's mission to
the Red Planet

CONNECT

**Linking Nottingham
alumni around the world**
Issue 4 | Autumn 2018

**The Future of
Work: Colleagues
and Co-bots**
Do you have the
skills to succeed?

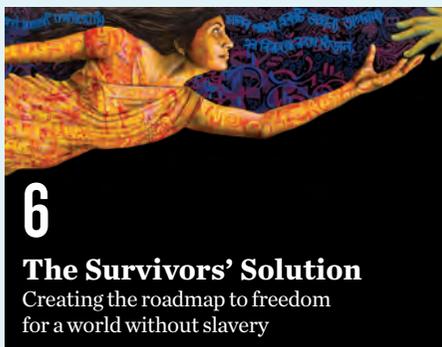


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CONNECT is the publication for graduates, former students, staff and friends of the University of Nottingham.

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Industrial Economics, 1982

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English Studies, 2010

Ryan has had a varied career spanning multilingual digital marketing, video game localisation, travel copywriting and communications. In 2014 he returned to the UK after two years living in Belgium and working in the video game industry. He has been the University's Student Communications Officer since 2016 and runs a copywriting business in his spare time.



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A theatre educator, performer and drama advocate, Philip has over seven years' teaching experience, with the last four spent in China where he has won three outstanding teacher awards and served for two years as the chapter director of the Educational Theatre Association of China. He is currently based in Wuxi and serves as drama teacher, teacher trainer and boarding evening supervisor at the newly-opened Nanwai King's College School Wuxi.

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History, 2012

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American and English Studies, 2005

Writer, story-seeker and wielder of the red pen. Culler of superfluous words. Vintage fashion enthusiast and lazy countryside rambler. Inspired by big blue skies – forever dreaming of life by the sea.



Simon Harvey

One of life's story tellers. Lover of people and their narratives. Wonderer and wanderer. Journalist for more than 30 years and eternal defender of the written word. When not defending the word, I grow vegetables.



Editor's Note

It's no secret that we live in a rapidly changing world. And while change brings disruption and uncertainty, it also brings opportunity. Our feature article *The Future of Work* (page 16) explores the possibilities of the 'Fourth Industrial Revolution' and considers how we can all prepare for jobs that don't yet exist. This year, we have brought more alumni voices into this magazine to share stories, ideas and thought-leadership on the biggest topics and issues facing us today. We hope you enjoy this edition – share which subjects you'd like to see us cover in future by emailing or writing to us.

FAYE HASLAM – Editor, Connect



Online edition available at
nottingham.ac.uk/connectonline



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University of
Nottingham Alumni

UNIVERSITY HIGHLIGHTS



VICE-CHANCELLOR'S COMMENT

As I look back on my first year in office, I am proud to see that our University is thriving in numerous ways: we have outstanding staff and students, a global reputation and an excellent record for student employability.

This has secured a gold rating for Nottingham in the Teaching Excellence Framework and had us declared as the *Sunday Times* University of the Year for both International and Sport.

As I look ahead to the coming year, I believe that these strengths will ensure we continue to thrive in a challenging environment for higher education. I return to the vision I set out in my inaugural lecture: deepening our partnerships; refreshing our approach to global and civic engagement; and innovating within the exciting yet disruptive world of the 'Fourth Industrial Revolution'.

Within our University, we are improving staff engagement, embracing digital technologies and modernising our governance. I have launched a covenant to support the University and its staff in working together for a positive future: encouraging pace, transparency and the wider use of our talent. A particular focus is placed on equality and diversity, tackling our gender pay gap, improving the representation of women and closing the attainment gap for our black and minority ethnic students.

Throughout my first year as Vice-Chancellor, it has been a privilege to meet so many of our alumni community: discussing sustainable cities in Hong Kong; marking the contribution of lifelong alumni at our Golden Reunion; or celebrating the work of our alumni volunteers. Nottingham is truly a community of scholars, students and alumni – a community that cares deeply about our institution and its future.

I will be engaging that community in perhaps our most significant goal for the coming year – a wholesale review of our University's strategy – to take a fresh look at our aspirations for the future when the current Global Strategy ends in 2020.

In closing, I wish to thank all of you for the warmth of your welcome, and I look forward to working together, confident that the University of Nottingham will go from strength to strength.

Professor Shearer West

UNIVERSITY OF NOTTINGHAM UNITED KINGDOM

THE TRENT BUILDING portraiture took a new direction this year with an exhibition celebrating Nottingham's inspirational women, launched on International Women's Day.

WE ARE opening our flagship new research Centre for Cancer Sciences, offering the first bespoke undergraduate degree specifically focused on cancer research. We also opened The Nottingham Breast Cancer Research Centre, aiming to accelerate research progress.

WE ACQUIRED a unique archive of more than 600 invaluable and irreplaceable treasures linked to Nottingham's most famous literary son and alumnus, DH Lawrence.



A NEW brain scanner, worn like a helmet, has been developed by researchers at the Sir Peter Mansfield Imaging Centre, offering new possibilities for treatments of neurological conditions. Professor Brian Cox tried out the tech at the Royal Society Summer Exhibition.

BRITISH UNIVERSITIES and College Sport (BUCS) Patron, HRH The Princess Royal, handed out the medals as we successfully hosted the BUCS 'Big Wednesday' finale.

THANKS TO philanthropic support and research funding, we continue to invest in outstanding new facilities including the Advanced Manufacturing Building at Jubilee Campus; Dairy Centre at Sutton Bonington; transformational new Cripps Health Centre at University Park; plus a stunning redevelopment of the iconic Portland Building and outdoor space, creating the new Djanogly Terrace on Portland Hill.

WE WELCOME 13,204 new graduates into our global alumni community and 174 talented new students, who are beginning their studies thanks to alumni gifts to our Nottingham Potential scholarship programmes.



Jess Lendon

President, University of Nottingham Students' Union

"I want to create a new, elected full-time officer position to specifically represent the views and needs of international students and, following on from the #metoo movement, I want to give students a voice on campus and stop sexual assault from being such a taboo subject."

UNIVERSITY OF NOTTINGHAM MALAYSIA



IN APRIL we held our first ever Nottingham and Malaysia Day, celebrating our special connection, before hosting the British Council's annual *Going Global Conference* which brought together international education leaders to explore the future of higher education.

PROFESSOR SIR Martyn Poliakoff helped launch our new public awareness campaign by conducting a Malaysia-themed experiment live on YouTube as part of his popular *Periodic Table of Videos* series.

OUR SCIENTISTS are developing new ways to fight Malaysia's most prevalent infectious disease, Dengue Fever – including creating disease fighting proteins from tobacco plants and developing a new pill using papaya leaves.

HRH THE Prince of Wales visited our campus as part of his Autumn Tour.

TEAM MALAYSIA won the 10th Nottingham Tri Campus Games, making it a second time win following victory in 2015.

WHY DID the elephant cross the road? Our experts are using GPS collars to better understand how we can protect elephants from traffic and human development.



Am-Abdul Aziz
President, University of Nottingham
Malaysia Student Association

"Our focus is on increasing collaboration with other universities, both internationally and locally. By reaching out in partnership, our aim is to facilitate the transfer of knowledge, foster a healthy competition and encourage the exchange of ideas."

UNIVERSITY OF NOTTINGHAM NINGBO CHINA

IN MAY, our campaign, *Discover our World*, showcased some of our pioneering sustainability research including removing mercury from coal-fired power stations to help tackle air pollution.

WE LAUNCHED our new UK-China University of Nottingham Electrification Centre in YuYao, Ningbo, focusing on driving the future of electrified vehicle propulsion and other industrial systems.

OUR CHINA Provost Professor Chris Rudd received an OBE in recognition of his services to Higher Education and Sino-British Cooperation after being named in the New Year Honours list.

THANKS TO a transformative gift from businessman and philanthropist Dr Li Dak Sum, 24 world-class professors are being appointed to advance our research and innovation expertise.

WE LAUNCHED an innovative new collaboration between the UK and China, using the experiences of patients, educators and trainee doctors, to help improve primary care training in both countries.

OUR DEPARTMENT of sport has opened a new Rowing Club working with National Youth Rowing Coach, Hongsheng Han – national competitions are in our sights!

Jin Qi
President, University of Nottingham
Ningbo China Student Association

"This year, we plan to develop our leadership and create more high-quality activities. Students who choose not to join our community are missing out on wonderful opportunities to enhance themselves. We want to develop our programme and help make life at our campus more colourful for all."





Together we can end human trafficking

Slavery is as old as recorded human history. From the earliest civilisations of antiquity to the industrial powerhouses that shaped the modern world, the institution of slavery has been irrevocably interwoven into the story of humanity. Illegal in every country today, we read about the impact of slavery from the pages of our history books, distanced from a practice of times seemingly removed from our own. And yet, in our 21st-century world, slavery is alive and well.

THE SURVIVORS' SOLUTION

WORDS

Faye Haslam

The 2018 Global Slavery Index estimates that there are 40.3 million enslaved people around the world today. That's more than at any other time in history. In the wealthiest nations and the poorest, modern slavery – an umbrella term encompassing human trafficking, forced labour, debt bondage, sex trafficking and forced marriage – is thriving in the shadows. Fuelled by global economic demands for cheap goods and services, and assisted by an increasingly interconnected world, it is among the fastest-growing and most profitable criminal industries today. But the world is waking up and taking action. With the United Nations Sustainable Development Goals calling for an end to slavery by 2030, and governments and NGOs mobilising to develop antislavery interventions, a world without slavery is within reach. And experts at Nottingham are providing the freedom blueprint.

Home to the world's leading modern slavery scholars, the Rights Lab, one of the University's Beacons of Excellence,



is the world's first large-scale research platform for ending slavery. Through a unique transdisciplinary approach, the Lab leverages its expertise across political science, law, history, geospatial science, and mental health, among other disciplines, to mix methods, data, tools and techniques into the best combination to solve real-world problems. "Ending slavery is an ambitious goal. But in the Rights Lab, we believe it is achievable," says Professor Zoe Trodd, Director of the Rights Lab. "There is a global commitment to end slavery, but we need long-term robust, evidence-based strategies for abolition. Our team is bringing a much-needed research rigour to a global community that has awoken to the historic possibility of ending slavery in our lifetime."

At the heart of the Rights Lab agenda is the search for answers to the fundamental question: why does slavery still exist? Key to understanding why the practice persists today are the perspectives of slavery survivors themselves. It may seem like an obvious strategy, yet the Rights Lab's commitment to bring survivors' voices to the forefront of the antislavery movement is a rare endeavour in this space. While slave narratives have long been a valuable tool in abolitionism, policy communities have failed to engage former slaves in the formation of antislavery programmes and frameworks. It's for this reason that the Rights Lab has supported the launch and development of a pioneering new organisation that is making antislavery a survivor-led movement for the first time.

The Survivor Alliance, currently incubated within the Lab, unites and empowers survivors of modern slavery around the world and brings the ideas of survivors into policy and research. "Every successful social movement has required the voices of those whose lives are deeply affected by injustice," says Professor Trodd. "The Alliance provides a key solution that is currently missing from the contemporary antislavery movement: a survivor-driven institution that moves survivors from being occasional spokespeople to strategic thinkers and movement leaders." The Alliance is led by Minh Dang, Rights Lab PhD student and leading antislavery campaigner. A survivor of slavery, Minh is at the forefront of efforts to integrate slavery survivors as equal members of the antislavery movement. "It is time for the antislavery movement to focus on deepening opportunities for survivors that are not centred around sharing their trauma narrative," she argues in a powerful contribution to the 2018 Global Slavery Index report. "Survivors understand the benefit of sharing some aspects of our story to raise awareness: however, our experience in slavery is not the only, nor the primary topic we want to discuss. We want to talk about policy change. We want to design social service programs and lead our own organisations. We want to build grassroots solutions and to sustain ourselves. As some of the best interpreters of modern slavery in the broadest sense, survivors' insights are wasted when they are restricted to telling personal stories."

Fusing academic expertise and cutting-edge research with the insight and knowledge of slavery survivors, the Rights Lab has quickly become the go-to academic partner

for national and international policy-makers seeking evidence-based antislavery strategies. In just the past year, the Lab has produced multiple joint reports with the UK Independent Anti-Slavery Commissioner as the sole university to repeatedly co-deliver research; served as the only academic presence on the Prime Minister's Modern Slavery Task Force; worked with policy-makers on the new Modern Slavery (Victim Support) Bill; addressed delegates at the United Nations; provided a major contribution to the 2018 Global Slavery Index assessment of global government efforts to tackle slavery; and joined with the United Nations Special Rapporteur on Contemporary Forms of Slavery to produce a major new report. And this is just the start. The goal is liberated slaves and the Rights Lab is creating the roadmap to freedom: a global plan to achieve a slavery-free world by 2030, originated right here at Nottingham. "It is clearer than ever that slavery teeters on the edge of extinction," says Professor Trodd. "By delivering a new agenda designed around cutting-edge methods and the agency of survivors, and by scaling up breakthroughs to become global research-led strategies, we can push it over the edge."

"I am proud that the University of Nottingham will play a key role in this watershed moment – when the world finally rejects the great lie of history, that some people are sub-human and embraces the great antislavery truth: that labour must not be forced and that people are not for sale."



To support the Rights Lab or find out more about the pioneering work it is undertaking to eradicate modern slavery from the world please visit nottingham.ac.uk/rights-lab or to make a difference through a donation please contact Sam Cousens on 0115 748 4978.

IMPRISONED POTENTIAL

WORDS

Faye Haslam

Nelson Mandela once said, “no one truly knows a nation until one has been inside its jails.” Under United Nations standards for the treatment of prisoners, the Mandela Rules, all prisoners should be treated with respect due to their inherent dignity and value as human beings. Yet reality is often far from aspiration. Around the world, prison systems are in crisis. The number of people incarcerated is growing, the rates of re-offending remain high and too many prisons are dangerously under-resourced. But what if the very people that society has written off can become the instruments of change?

As nations grapple with the challenges posed by criminal justice issues, solutions are sought from across the legal system. But rarely within the prison walls themselves. After witnessing the degradation in Ugandan prisons during his gap year, lawyer and humanitarian **Alexander McLean** (*Law, 2007*) realised that change must come from within. With East African cells filled by the poorest, least educated and most vulnerable, around 80% of inmates cannot afford basic access to justice. Most never meet a lawyer. But what if the power of the law was placed into the hands of the poor? Seeing the incredible potential within the prisoners he met, Alexander established the African Prisons Project (APP) to drive an innovative new approach to penal reform from the inside out by providing legal education to prisoners and prison staff in Uganda and Kenya. In a little over 10 years, APP has grown into one of Africa’s leading charities, inspiring change that transcends borders. But it all began with the stark reality that not all lives are equal.

“When I was 18, I volunteered with Hospice Africa Uganda,” explains Alexander. “One day we went to Uganda’s main hospital and I came across a man lying on the floor by the toilets. He was naked on a plastic sheet, in a pool of urine, with his back and bottom rotting down to the bone. I asked a nurse about him, and she said they were waiting for him to die as he didn’t have any relatives



to look after him. I ended up spending five days washing him, feeding him, caring for him, before he died. He was put on a trolley on top of a dead woman and I was told they would go in a mass grave with everyone else who had no one to bury them. My life changed then because I realised there are people whose lives just have no value.”

Spending a further three months at the hospital caring for abandoned people, Alexander encountered prisoners, often teenage boys like himself, dying of starvation and dehydration. Determined to see where they had come from, Alexander visited Luzira maximum security prison and was shocked by the appalling living conditions and tough environments faced by inmates. Returning to the UK to begin his legal studies at Nottingham, he established APP as a student society, with alumni support, to raise funds and recruit volunteers. Visiting Africa at every opportunity, the APP established clinics and libraries at prisons throughout East Africa, becoming a registered charity in 2007. But it quickly became apparent that issues in African prisons went far beyond facilities.

“I started to see that the needs of prisoners are complicated, and that to effect change, you need to understand the prison environment and the complexities of the justice system. With almost everyone that I met, I saw that with access to a lawyer, they wouldn’t be here because it’s the poorest people who don’t understand the law and have to defend themselves in court who end up in prison. So, rather than working to make prisons better, let’s work to get people out of them.”

African Prisons Project’s vision is to develop changemakers within prisons who can use the law to bring justice to the most vulnerable in society. Through innovative programmes, prisoners and prison staff are given the opportunity to pursue legal education and human rights training, allowing them to navigate the justice system and provide legal support within their community. With a powerful combination of high-quality legal education and first-hand experience of conflict with the law, APP is establishing an impressive community of penal reformers with incredible potential to shape the law in favour of the poor. And that’s what makes APP’s work so radical and exciting.

“Through history, many remarkable leaders have spent time in prison – Nelson Mandela, Martin Luther King Jr, Mahatma Gandhi – and shown that it’s possible for people in prison to do remarkable things. In society’s eyes, you may not have much to offer. But if in prison you can see a person’s talents and potential, and harness it, that person can leave a totally transformed individual with a huge amount to offer their family, their community and their nation. I find it incredible that it’s possible for someone to enter prison in a country like

Uganda or Kenya, among the world’s poorest, and leave with a degree, their life transformed.”

Today, there are more than 200 paralegals in prison communities in Uganda and Kenya, with more than 60 students studying for a University of London law degree by correspondence. In 2018 alone, an average of 250 people a month are being released from prison, having had access to legal support from the APP community. On the horizon is the establishment of the world’s first prison-based law firm, with experienced lawyers working alongside prisoners and prison staff.

“

In a little over 10 years, African Prisons Project has grown into one of Africa’s leading charities, inspiring change that transcends borders

”

“Members of our community are already working on people’s cases in prison, but we also want to take on challenges to try and change the law so it’s fairer for the poor, like Susan Kigula’s case. I first met Susan at the women’s prison in Kampala when I was 19. She’d been sentenced to death a few years before, but she was a leader in her prison community, establishing a choir, dance troupe, church and school from death row. I saw a woman who was full of energy and life, despite her sentence. In 2012, she was admitted to study for a law degree by correspondence, our first female student. Representing 417 death row inmates, Susan led a landmark case in the Ugandan constitutional court which challenged the death penalty. Her case resulted in the mandatory death sentence being abolished, and Susan and hundreds of others were released from death row. She graduated with her degree as a free woman and now works with the APP. She’s shown that our situations don’t have to define us. We want to create a community of people, like Susan, who leave prison in a position to make, shape and implement the law.”

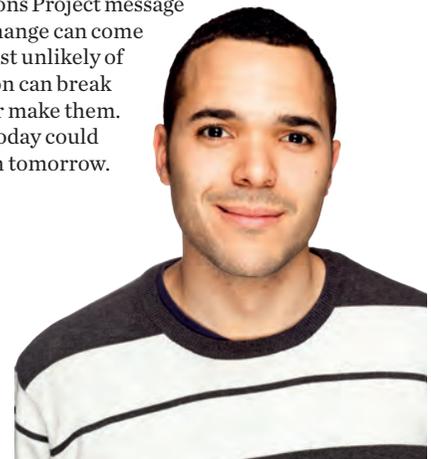
Time and again, studies show that when prisoners are given opportunities to gain an education and find employment, recidivism is less likely. Yet the stigma of a criminal record continues to prevent ex-offenders from contributing to society.

UK Government figures (December 2016), for example, show that only 26% of UK prisoners enter employment on release. Challenging conceptions of what prisoners can achieve, the APP believes that each of us has more to offer than the worst thing we’ve done. And that’s something that prison systems around the world, including the UK, could learn from.

“I think sometimes in the UK, among conversations about austerity and making cuts, we can lose sight of the resources that we have. UK prisons have many examples of best practice, built on centuries of reform, but one of the things that inspires me most about the prison services we work with is that they have aspiration for their prisoners. I worry that we don’t always share that aspiration in the UK. We’re hoping to use some of the lessons we’ve learned in British prisons, bringing together prisoners, prison staff, politicians and judges to consider how we can create a society where everyone understands the law. We have incredible law firms and universities in the UK, so there is huge potential to develop opportunities for prisoners in Britain.

“In the years that I’ve been doing this work, I’ve had my mind blown again and again by people that on the surface look like they don’t have much to contribute but then do remarkable things. If we’re in a position to give people opportunities to change their lives, we should embrace that. I think about my own experience, receiving a government-funded place to attend a fee-paying school and then a scholarship at Nottingham because my family didn’t have much money, and I see that people saw potential in me and invested in me. I want to pay that forward. Every one of us can have a future of tremendous potential regardless of our past.”

The issues facing criminal justice systems may be difficult and complex. But the African Prisons Project message is simple. Change can come from the most unlikely of places. Prison can break a person – or make them. A prisoner today could lead a nation tomorrow.



IS THERE LIFE ON MARS?

WORDS

Simon Harvey

In prehistoric times, humans wondered what lay beyond the next mountain. Ever since, we've pushed ourselves to explore new frontiers, gain more knowledge and unearth greater riches. With little left on Earth untouched by human hand, we turn our insatiable sense of wonder to the sky. As the race to planet Mars intensifies, we meet a Nottingham graduate whose job it is to protect the planet and ask University philosophers: is this space exploration for the greater good? Or is it just a race to put our flag in the sand and claim the prize?

Since Neil Armstrong famously took that step, we've spent half a century improving our ability to survive in space. And now we're ready for the next giant leap, expanding human presence into deep space. Everyone's headed for Mars.

This summer, scientists revealed a liquid water lake on Mars and NASA launched its InSight Lander which is due to touch down at the Elysium Planitia in November. In two years' time, NASA's Mars 2020 mission will study aspects of the geologic and climatic history of the Red Planet resulting, perhaps, in a definitive answer to the age-old question – is there life on Mars and was it ever there before?

Science fiction would have us believe Martian life will either resemble grey humanoids, the three-eyed Little Green Men of *Toy Story* or something crawling out of actor John Hurt's stomach. But the reality is likely to be the rather less dramatic discovery of microbes fished out of a primordial soup.

As a NASA scientist and microbiologist, **Emily Seto** (*Clinical Microbiology, 2016*) is a Nottingham graduate at the forefront of the preparations to ensure that if we do find life on Mars, we can actually prove it.

"I'm a Planetary Protection Engineer. We aim to prevent the forward and backward contamination of spacecraft as they travel to different planets. We keep an archive of novel microbes as evidence so that when something is identified on another planet, we know that it's unique and hasn't come about through our contamination.

“Spacecrafts at NASA’s Jet Propulsion Laboratory, where I work in California, are housed in a clean room which is as sterile as we can make it. Every time an engineer adds a piece of hardware to the spacecraft, I have to ensure that every piece is absolutely clean. We use isopropyl alcohol, UV radiation, and vaporised hydrogen peroxide, yet there are microbes which can survive this harsh process, which I find quite incredible.

“Day to day, I focus on microbe sampling, identification and archiving. One of my big projects is characterising novel organisms. A lot of the novel microbes we discover from the clean room don’t have a characterisation, which means we get to name our own microbe and put it into the system.

“My interest in microbiology started when I was young. When I was four I contracted E Coli 0157, the most pathogenic strain, from a dodgy burger. I suffered kidney failure and spent a year in the Children’s Hospital of Los Angeles, who saved my life.

“This illness sparked a fire in me to learn, and my masters in clinical microbiology at Nottingham provided such a positive environment in which to explore topics like antibiotic resistance and microbes. It changed my horizons.

“I’m now really passionate about astrobiology. These are extreme microbes that are surviving and it’s important that we know so much more about them. There aren’t enough specialists in this field – we need more students and post-docs to study them. I spend a lot of time encouraging young people to think about the bigger picture but I don’t think people appreciate just how important this field is going to be in the future.

“We need more inspirational leaders. I was lucky enough to meet NASA astronaut and microbiologist Kate Rubins, who was the first scientist to sequence bacteria in DNA in space. I was fan-drooling over her because she was my inspiration and I’d love to follow in her footsteps. I’d volunteer in a heartbeat to go to Mars and, as a microbiologist, I’d give anything to be the first to sample what is found.

“Over the next 20 years, a big fleet of spacecraft from many different countries will land on or orbit Mars. But I hope it will be for the good of science and humankind. Each mission is a collaboration carrying instruments contributed by many different nations. What’s important is how we can all contribute to science to fill the void in our knowledge. I hope we can find a way to do that together.”

“
Nottingham provided such a positive environment in which to explore topics like antibiotic resistance and microbes
”

A MORAL DIMENSION

Deep space exploration carries with it moral and ethical responsibilities. Dr Neil Sinclair and Jon Robson of the Department of Philosophy offer their perspective.

DR NEIL SINCLAIR

“There’s an assumption that humans are somehow ‘outside of nature’ and that as soon as we put a foot on a planet, we somehow taint it. Yet we’re just like anything else in nature, we came through the same evolutionary processes. All ecosystems experience change.

“A planet like Mars presents us with an opportunity to display our approach to the non-human world. Do we view it as resource for current or future humans, do we respect it on its own terms, do we show humility towards it or do we try and dominate it. Antarctica is a model that seems to work.

“We can’t be sure that we’ll be harming anything on Mars but it doesn’t reflect well on us if we just dive in there and plunder resources. If we show our values in the way we approach everything, whether it’s sentient or not, then perhaps we’re less likely to be perceived as aggressive and exploitative. The mechanics of space travel gives us more time to think about those mistakes and take a different approach.”

JON ROBSON

“Historically, we’ve explored and then thought about ethical and moral considerations later. We’ve tended towards the ‘let’s see what we can get out of this and then worry later whether our actions were right or wrong.’ Moral status is an important consideration. How complex would an alien have to be for us to care about it intrinsically? There’s a huge spectrum covering single cell organisms to complex aliens with advanced space ships.

“This also brings into the question what is natural? If we think there is something important about the natural state of a planet, to what extent do we interfere? Visiting Mars in the first place involves some kind of interference. Leaving footprints and a flag on the Moon is interference in one sense but it doesn’t appear to be a large-scale change of the environment. Does that make it ok?”

Like a real cloud, the digital cloud is something you can't grasp in your hands to feel or examine. But, the cloud is a concept worth understanding. Companies around the world spend close to four trillion dollars on IT (Gartner) and within a few decades, most of that will very likely be in the cloud.

WHAT'S WHITE, FLUFFY AND WORTH \$20 TRILLION?

WORDS
Tom Hills

For many of us, the cloud is an abstract concept. "Your photos are on the cloud" the techy people say – we nod along, too embarrassed to ask what that actually means.

So, what is the cloud?

When you use software, like Microsoft's Office 365 or Salesforce, which operate through the internet – you're using the cloud. These very words were written with the help of the cloud – using Google Docs while listening to Biffy Clyro's Cloud of Stink on Spotify.

My document, and Biffy Clyro's notes, aren't stored on my computer. Everything is stored on a server in a data centre (or possibly several) somewhere in the world. That's the cloud, or at least part of it. But the cloud is so much more than apps we use through the internet.

Gavin Stanley (*Mathematics, 2002*) is a Business Operations and Strategy Principal in Google Cloud's technology partnerships team. He's at the forefront of working with companies to move their IT infrastructure from their own data centres and servers to the Google Cloud.

"It's inevitable that companies will embrace the cloud – if you don't, you'll likely fall behind those that do, due to the cost savings and, more importantly, innovative capabilities offered by the cloud, such as data analytics and machine learning. If you think about all the business problems that cloud technology could solve, we're talking about a

20 trillion dollar digital transformation opportunity (Microsoft)," Gavin said.

Cloud wars

Competition between cloud services is high. The battle is at its fiercest between giants of the technology world – Amazon Web Services (AWS), Microsoft and Google.

"Over the last three years we've been building like crazy – new infrastructure, features and services and our team. It's a great experience but there is a lot of pressure to grow fast and capitalise on this massive opportunity," Gavin said.

If they're not battling AWS and Microsoft to fill their clouds, Google is protecting it from hackers. So, how safe is our data in the cloud?

"I believe it's more difficult to hack Google than any other company in the world" explains Gavin, "though it's useful to differentiate data security from data privacy."

"Data security is how we protect data from malicious attacks. We build in security from the ground up, right from the chip to the server to our data centres, which have security guards and 24/7 supervision. We have the most advanced encryption techniques in the world and have teams constantly trying to hack our systems.

"Data privacy is about what we do with your data once we have it. Alongside complying with global regulations, we prevent anyone in Google from accessing personal sensitive data unless they have

a valid business reason – to see credit card data for example, you need to go through layers of approval and have advanced detective controls, so if someone abuses the system, they're disciplined, including termination if necessary. It very rarely happens but when it does, people see the consequences," Gavin added.

The future of the cloud

The move to the cloud represents the biggest shift in enterprise IT ever, not so much due to its core functionality that builds on previous technology shifts such as client-server and virtualisation technologies, but rather how it enables businesses.

"As companies leverage advanced services like machine learning and data analytics, more and more businesses are going to realise that the cloud can not only transform their internal IT infrastructure and business processes, but more importantly transform how they build better products and bring them to market. This will ultimately drive top line revenue growth and competitive differentiation for early movers to the cloud. Software companies in particular, if they don't move or are slow to do so, may struggle to compete further driving the move to the cloud over the next few decades," Gavin said.

Forecast: cloudy but bright.

WORDS
Ryan Neal

GLOBAL GAMING

PLAYER 1



NAME
Andy Wilson

COURSE
Computer Science

HALL
Lenton and Wortley

GRADUATED
2001

**FAVOURITE PLACE
IN NOTTINGHAM**
Wollaton Park

FAVOURITE GAMES
Gunstar Heroes
Sonic the Hedgehog II

PLAYER 2



NAME
Ryan Neal

COURSE
English Studies

HALL
Hugh Stewart

GRADUATED
2010

**FAVOURITE PLACE
IN NOTTINGHAM**
Ye Olde Salutation Inn

FAVOURITE GAMES
Tomb Raider II
Dungeon Keeper

Compared to **Andy Wilson**, Vice President of Development at Hangar 13, my experience in the video game industry is akin to completing the control tutorial in Portal 2. That said, aside from both being University of Nottingham alumni, what we do have in common is the fact that we both left the UK for jobs in the video game industry – an industry where international relocation is a common career trajectory. Our conversation soon turns to the global nature of video games.

“It’s in all our interests to be more global and try and open up those markets,” says Andy. “Developers are thinking ever more globally to ensure that they’re building games they really want to make but they’re doing it in ways that can give them access to an audience potentially of billions.”

Trying to reach a culturally diverse global market with one product poses a dilemma. Should developers compromise their creative vision to reach global markets, or compromise their market reach to preserve their creative vision?

“I can tell you right now that we, with our current game, are not planning to make dramatic changes on a territory-by-territory basis. It’s more a case of, as the game develops, is there an opportunity to market it at all there and, if we did, are there any changes we would need to make and are those changes palatable to us creatively?”

Having worked in video game localisation, I know first-hand how professional localisation can level up a developer’s market presence, while cutting corners can spell game over.

“There are always risks because you can accidentally be culturally insensitive. We’ll look to our localisation partners to tell us where something doesn’t look or feel right or if anything is offensive. Mistakes in any language can make an entire country of potential fans feel like they’re an afterthought to you or that you didn’t care about them.”

There is no cheat code to bypass the challenge of creating global games and it’s spawned an entire sub-industry. Localisation experts are sought after to translate the game; record dialogue; advise on cultural perspectives, nuances and sensitivities; consult on design; and to help developers reach markets they do not have direct access to. But Andy is keen to emphasise that these aren’t the only alternative routes into the video game industry.

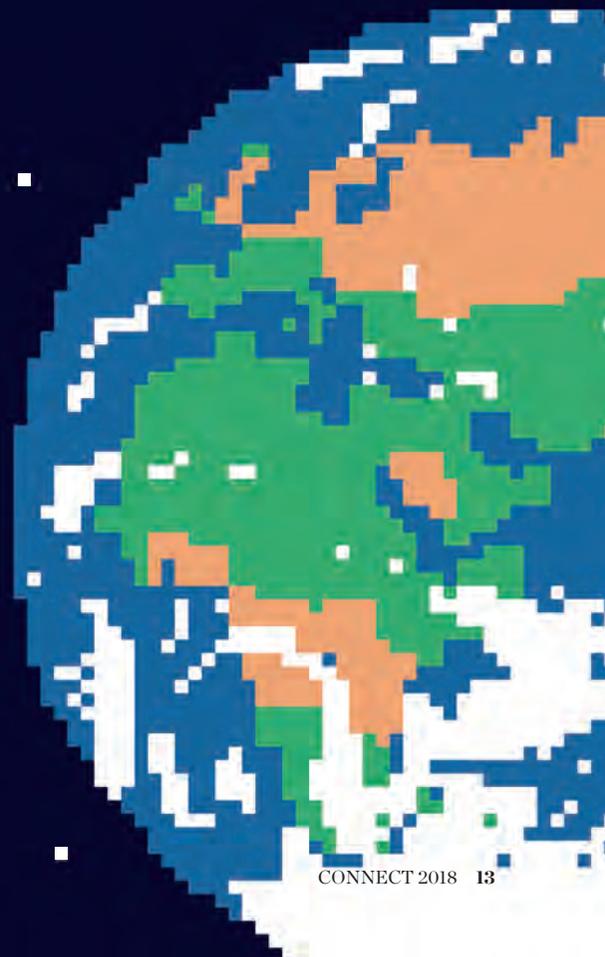
“One thing I had shown an aptitude for was project management and some of the modules on my computer science course where I excelled were in group work,

where I was the organiser, so I realised that production and project management was a route that was most interesting to me.”

He’s keen not to overlook the value of transferable skills. “We’ve got all the ancillary support, the IT support, HR and recruitment teams and we’ve just appointed an office manager at Brighton, who’s got to do the lease and contract negotiation, and work with an interior designer to fit-out that studio.”

As our conversation nears an end, we return once more to the professional opportunities that moving abroad has unlocked for us. I ask Andy if he thinks studying or working abroad would be an asset to anyone looking to enter the video game industry.

“Yes, definitely. But don’t just travel. Do something meaningful with it that is going to show that you have a skillset, something as simple as travelling abroad to work in a deprived community, design and project manage the building of a school, that type of thing so that you show that you’re starting to build a skillset which will translate to the world of work. Every time I’ve made a leap of faith it’s driven me on to better things.”



THEN & NOW

PHOTOGRAPHY
Anthony Pileggi

Societal change, emerging technologies, a world in transition. We explore the student experience in 1968 and 2018.

SWINGING SIXTIES

'The 1960s Look' captured the excitement and spirit of change in the air as students expressed themselves through colourful new fashions.



HISTORY IN THE MAKING

1968 was a year of seismic social and political change across the globe. Students across the world held sit-ins, protests and took to the streets to fight for change.

TRADITIONAL TECHNOLOGY

The scribbling of pen on paper and the clunk and click of the typewriter were familiar sounds in the 1968 student bedroom.

REVOLUTIONARY SOUNDS

An era of musical transition as many of the biggest artists of the age debuted new sounds. On campus, music-lovers embraced the cultural revolution at Portland Building gigs.

EQUALITY FOR ALL

Creating a world free from discrimination, with equal rights for all, remains a priority today. Nottingham is leading the way with the appointment of Professor Sarah Sharpley as the first Pro-Vice-Chancellor for Equality, Diversity and Inclusion.

A WORLD OF OPPORTUNITIES

The student world has become a lot bigger as travel is transformed by technology. It's easier than ever to study or work abroad, opening a new world of experiences, cultures and possibilities.



LIFE IN THE DIGITAL AGE

The landscape of higher education is rapidly evolving as technology transforms how, where and what we learn.

WARDROBE ESSENTIALS

Some things don't change through the generations as students show their Nottingham pride through University merchandise, giving a nod to previous eras with a vintage feel.



THE FUTURE OF WORK COLLEAGUES AND CO-BOTS

WORDS

Victoria Hodson

Buzz, Buzz. “Feed me 250 steps,” demands FitBit as I sit to write this article. It’s a mildly irritating intrusion but what if, rather than a helpful aid to my personal fitness goals, this alert had been sent by my employer, concerned by my falling activity levels and keen to optimise my performance? It’s not far-fetched thinking – Amazon is renowned for its intense surveillance and tracking of its human workforce, while BP America first issued wearable technology to monitor its employees over five years ago. From recruitment to retirement, technological advances are rapidly changing our working lives. With the McKinsey Institute predicting that up to half of all work activities globally could be automated by 2030, it’s not surprising that many of us feel apprehensive about what the future holds. So what can we do to harness the disruptive opportunities this ‘Fourth Industrial Revolution’ will bring, and what role can universities play in preparing us all for jobs that don’t yet exist?

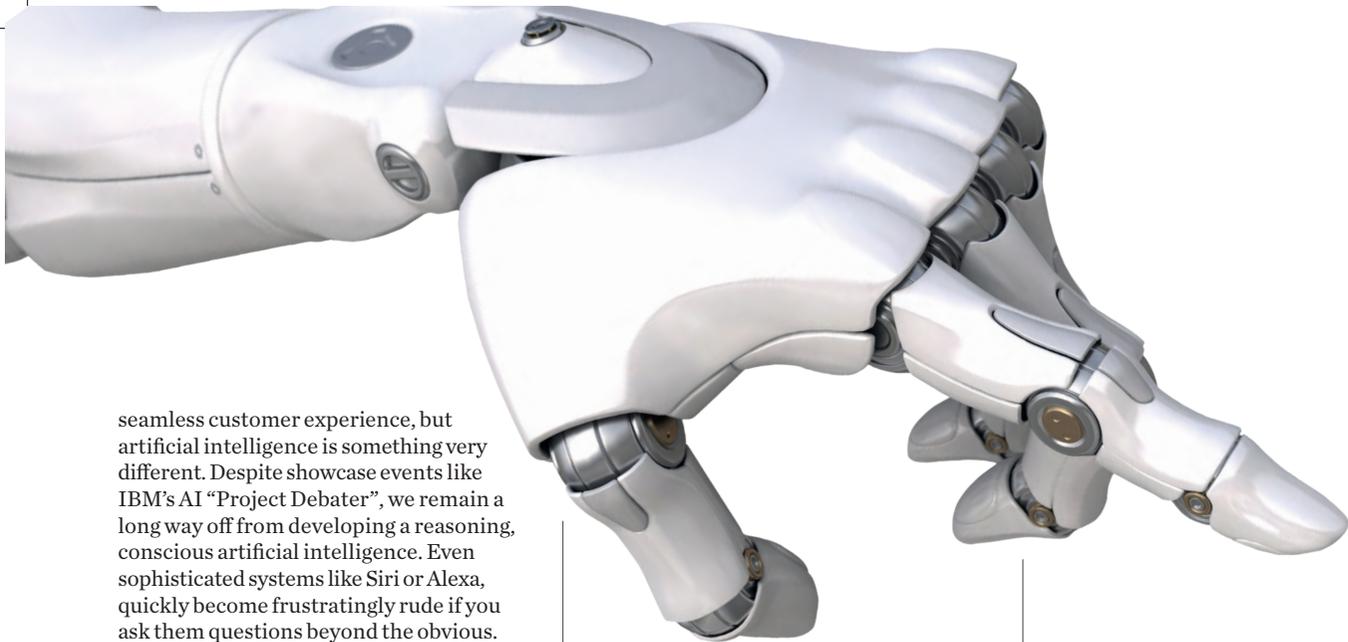
Though machine systems now power our daily lives through smart technology, their potential large-scale, disruptive effect on the workplace is a major focus of research and public concern. Nearly a quarter of people recently surveyed by a new Commission on Workers and Technology in Great Britain think that their job will disappear in the next 10 years. 4 in 10 people are worried that their work will change for the worse as a result of automation. Globally, the predictions are even more daunting, with China set to have the largest number of workers displaced – up to 100 million people if automation is adopted rapidly (McKinsey Global). With reports asserting that technological unemployment will inflame economic insecurity and make employment more vulnerable, we asked three Nottingham experts how fearful they think we should actually be.

“Jobs are changing; the relationship between individuals and the market is changing; and the ways in which we are part of large physical and virtual networks are all undeniably changing,” explains Professor Todd Landman, Pro-Vice Chancellor for Social Sciences. “Yet this fear that there won’t be enough future employment for humans is nothing new. Think about the Luddites here in Nottingham, breaking up the knitting frames during the Industrial Revolution because they were frightened by machines taking over the work of human beings. Historically, advances in technology have led to higher wages, longer life expectancy, faster growth and long-term societal benefits. The introduction of the pill and the washing machine can be tied to second-wave feminism for example, which ultimately changed the status quo and created improved equality laws.”

And yet reports of the potential destructive power of artificial intelligence are no longer the realm of science-fiction. With the world recently witnessing the first real ‘debate’ between a human and IBM AI system; leading business innovator Elon Musk warning that “artificial intelligence is more dangerous than nuclear weapons”; and biotechnology advances enabling us to fundamentally change our genetic code, it’s easy to feel unnerved.

“Firstly, the vast majority of the change we’re seeing in the workplace right now is down to machine learning and increasing digitisation, not artificial intelligence,” explains Professor Derek McAuley, Professor of Digital Economy and Horizon Director, Faculty of Science. “This is a steady trend that has been happening for decades, which occurs when it becomes more cost effective for a business to move from a human system to a digital system. ATMs replacing bank cashiers, or self-service supermarket checkouts are part of this process.

“We’re also getting much better at linking systems together to share data and create a



seamless customer experience, but artificial intelligence is something very different. Despite showcase events like IBM's AI "Project Debater", we remain a long way off from developing a reasoning, conscious artificial intelligence. Even sophisticated systems like Siri or Alexa, quickly become frustratingly rude if you ask them questions beyond the obvious.

"What is surprising is how long it has taken us to get to this point. I first saw much of the 'new' technology coming onto the market now in labs over 25 years ago, and its implementation is still pretty limited. Those self-service checkouts aren't using visual recognition systems yet for example."

From accounting to law, policing to retail, the impact of technology is evident. It's no longer just repetitive physical or technical jobs that are at risk of displacement – cognitive tasks are also increasingly affected, impacting on the availability and nature of many graduate roles.

"The changes will be particularly noticeable in graduate positions where analysing and managing large amounts of information formed a first-step career responsibility, such as in entry-level legal roles," explains

“
**The key for alumni
of all ages is to find
your own motivation
to keep learning and
adapting, and to
embrace the
positives that come
with needing to
change career
throughout your
working life**
”

Dr Nalayini Thambar, Director of Careers and Employability. "Another example is the hiring pattern of Goldman Sachs' stock traders: down from 600 in the year 2000, to just 2 graduates in 2017, with the remaining work undertaken by 200 computers."

Though some forward-looking cities are exploring mechanisms like basic universal income as a potential solution to the predicted economic disruptions, few argue that machines will render a human workforce obsolete.

"We're already using machine learning and predictive analytics extensively across many sectors and professions, to look at huge amounts of data and extract the relevant information," adds Professor McAuley, "but this doesn't remove the human component from the process. Human judgement is needed when it comes to making important decisions. What happens to your right of appeal, for example, if you receive an automated speeding fine but it wasn't you?"

"Machines are excellent at filtering out the 'noise' within mass data, but in many cases, they require human input too. A security camera can detect motion and form, but a human needs to decide whether or not the presence is a real threat. It's why autonomous cars are such an interesting concept – there, we are asking machines to make life or death decisions on our behalf, within a physical environment where humans and robots will need to safely co-exist. Anyone familiar with robotic production systems will know just how dangerous these environments actually are. So far, we have deliberately designed our systems to keep robots and humans separate, but autonomous vehicles changes all of this."

So far, automation has created far more jobs than it has destroyed. While we can take comfort in the fact that there is likely to be enough work to sustain full employment to 2030 under most scenarios, even if the roles we do are very different to today, what no-one is debating is that the transition to a

new way of working will be very challenging – matching, if not exceeding, the scale of shifts out of agriculture and manufacturing seen in the past. One popular estimate is that 65% of children entering primary school today will ultimately end up working in completely new job types that don't yet exist (McLeod, Scott and Karl Fisch). So how are universities preparing students today to flourish in a shifting jobs market?

"The modern economy and society needs people who can engage in complex problem solving; critical thinking; creativity and innovation; people skills and management; coordinating and networking with others; emotional intelligence; sound judgment and cognitive flexibility," explains Professor Landman. "These are some of the same skills recognised by the World Economic Forum in their report *The Future of Jobs*, which we develop at Nottingham through both academic rigour and extra-curricular opportunities. A degree gives you the tools to study the world through the eyes of theories, methods, data, analytical reasoning, narratives, stories, and the human dimension. This is the mindset we need to continue to hone as graduates."

"If the Cambridge Analytica and Facebook 'fake news' scandals tell us anything," continues Professor Landman, "it's that we need well-educated, knowledgeable, and patient scholars, with the discernment to challenge the veracity and accuracy of (dis)information, who can provide real value to society."

It's an argument that resonates strongly with others. "Despite the institutional spotlight on employability in the UK, often in response to higher undergraduate tuition fees, a narrative still prevails that 'being academic' and 'being employable' are parallel paths," Dr Thambar adds. "My hope is that tensions around the purpose of higher education will start to dissipate as a transformational learning experience in its own right simultaneously equips students for their future career."

“
**Change is inevitable.
What is not is how we choose to respond**
”

own motivation to keep learning and adapting, and to embrace the positives that come with needing to change career throughout your working life.”

The pressure is on to remain relevant throughout our careers to potential future employers. Yet few people surveyed by the Commission on Workers and Technology think the government, employers or trade unions are taking action to support workers as technologies change. So is there more that universities could be doing to help alumni like me to upskill and develop? Reassuringly, the answer is yes. “We first helped to launch your professional journey when you graduated with a world

ultimately result in a more positive future for humanity. But what about our human impact on the systems we create? How much of ourselves are we putting into our machines? If we delegate complex decisions to AI, could we use maths as an equalising force within society?

“Machine bias is a critical area of research for us here at Nottingham,” explains Professor McAuley. “As with any new technology, artificial intelligence reflects the bias of its creators. Machines have no value judgement – to them, everything is just data. A good example is our recent work with the Durham police custody team, where an automated custody sergeant started showing



Technology can, of course, be extraordinarily empowering, with greater connectivity opening up communities, markets and opportunities like never before. Cloud computing, fibre broadband speeds and personalised digital services mean that we can work effectively away from the traditional office environment and locate ourselves around the world. Employers can tap into new parts of this increasingly mobile, global workforce while employees gain the flexibility to work around other commitments or just when they choose. For women this can be particularly liberating and yet, with companies like Uber shaking up traditional industries and impacting workers’ rights, we must consider the long-term impact of shifting towards a piecemeal approach to work. For good or ill, the technology genie is out of the bottle. Change is inevitable. What is not, is how we choose to respond.

“Jobs for life’ just don’t exist anymore,” states Professor Landman. “I met a group of young graduates at an alumni networking event at Berenberg bank last year, all of whom were completely unfazed by the fact that they may only hold a job for a year or so. The key for alumni of all ages is to find your

class degree,” explains Suzie Green, Alumni Relations Manager, “and now we can help springboard your career further through our continued professional development (CPD) offering. From sector specific training courses delivered by our CPD experts to fantastic, practical support for entrepreneurs through our Hayden Green Institute and Business School, we’re investing in lifelong opportunities for our alumni community.”

Structured learning however, is just one of many paths towards up-skilling and network development.

“Alumni events are a great place to make useful new connections,” adds Suzie. “Volunteering for the University can also be a really rewarding way to help meet your professional and self-development goals. We believe that your relationship with this University is for life – not just for the three or so years that you studied here. The future may look uncertain but what’s clear is the need to develop those core skills – emotional intelligence, critical reasoning, and cognitive flexibility amongst others – that a machine cannot yet master. It’s why we are working on a new programme of content that will help alumni to hone these skills and sustain their long-term employability, just like we are doing for our current students.”

Technology will result in displacement in the workplace, yet playing to our strengths and using technology help bring people out of dangerous, dirty or repetitive tasks, could

prejudice towards people from lower income households. A human can see remorse but you can’t create a ‘remorse’ data point for a machine to learn from.

“Machine learning systems will illuminate the prejudices inherent within our society,” continues Professor McAuley. “And if these machines are making decisions that could lead to loss of liberty or financial penalties, or are preventing parts of society from accessing critical services, it’s even more vital to understand what data goes in and who wrote the algorithm, to ensure the end results really are fair and inclusive. And for that, we need intelligent, inquisitive humans with a strong moral compass. Universities have a vital role to play in making sure that’s the type of graduates we create.”



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WORDS

Sally Mitton (*Industrial Economics, 1982*), Head of Human Capital at PwC UK

The view from business

THE HUMAN DIFFERENCE

As businesses face rapid technological, regulatory and political change, we asked Head of Human Capital at PwC UK, Sally Mitton (*Industrial Economics, 1982*), for her thoughts on how organisations can embrace new digital opportunities and prepare a workforce fit for the future.

“
Investing in people is the way to make the human difference in a digital world
”

I’ve been privileged to work for PwC for over 25 years and believe the technological advances we’re seeing today represent the biggest change to impact our workforce. Cloud-based services and 24-hour connectivity are completely transforming the working environment. It’s not just about when and where people work, but how they work, what they work on and what tools they use.

At PwC, we’re redeveloping our offices to create more open, collaborative workspaces and are investing regionally, spending significant amounts on upgrading our digital infrastructure. We’ve introduced policies like ‘everyday flexibility’ and ‘dress for your day,’ and no longer expect our teams to sit around the same table in the same meeting room. We’ve made it acceptable for people to be in different places, working to different patterns without judgement.

We’re committed to creating a diverse, inclusive workplace that works for everyone because we know that diverse teams deliver better outcomes for all. We started by redefining our core values and who we are as a business. In the digital age, nothing can be hidden. For example, innovations like Glassdoor.com, where employees review their employer, means transparency is key.

We know that people increasingly want to work for companies that are socially responsible and technologically advanced, so finding ways to stand out and meet the expectations of graduates is a big driver for us. We’ve transformed our recruitment process using gamification, to better reflect our values and signal to potential employees what we stand for. Candidates are immersed into a world of rich avatars, where

they complete challenges linked to work-based behaviours, values and culture. It’s a scientifically-robust psychometric screening tool but one that’s fun to engage with.

As a result, we find that people are more authentic, meaning that we can see beyond the interview ‘front’ that candidates put up. Those who aren’t successful still leave with a positive association, having learned something of themselves through the process.

I urge business leaders to think carefully about what skills are most valuable to you in your human workforce. At PwC, we call this the ‘human difference’. Let machines do the data-driven tasks that they are best suited to. In our staff, we prize creative thinkers; leaders at all levels who can inspire and support colleagues; and those with emotional intelligence who can build strong relationships with people. Work out what you need most and invest in developing those skills.

Secondly, be prepared to deal with the human response to change and work out how you can help your whole workforce to feel comfortable. Adopting new technology may be easy for a millennial but someone unused to change may feel differently. Show people how technology can meet their needs, while developing their resilience and adaptability. People who crave consistency above all else will find any workplace increasingly uncomfortable.

I don’t believe we have all the answers at PwC but I do think the future is positive. Technology is significantly enhancing our performance and helping us to attract and retain talent. Whatever your industry, investing in people is the way to make the human difference in a digital world.



The view from education

WHAT THE WORLD NEEDS NOW IS DRAMA

WORDS:

Philip Oosthuizen
(*Education (International)*,
2017), drama teacher and
trainer at Nanwai King's
College School Wuxi

Science, technology, engineering and maths – in a digital world, we increasingly understand the importance of these subjects to our future prosperity and prioritise them accordingly. But what do we lose in the process? Inspirational theatre educator, performer and drama advocate Philip Oosthuizen (*Education (International)*, 2017) explains why we all need a little more drama in our lives.

I grew up in Phalaborwa, a small town in the north of South Africa. I love the town, but growing up, seeing things differently to those around me wasn't something that was really encouraged. As a result, I was racist, sexist and religiously intolerant. I did not understand that people see different things, and therefore see things differently.

I think we can all agree that today, the world is kind of between a rock and a hard place when it comes to the social and political spheres. Modern culture has reduced us to unfollow and delete buttons. It's made it ok for us to entertain only that to which we can relate to, and to shy away from that which is different. Within these spheres, there are a lot of people who feel frustrated, probably because of the way we engage in dialogue. If we want to change, to rediscover what it means to be dialogically human, we must turn to drama education.

While I have always loved performing, I didn't encounter the transformative power of drama until I hit high school when my drama teacher started asking me one simple question: Why? Why did you decide on that character trait? Why did the playwright choose that setting?

As a result, I formed a habit of inquiry and engagement which has helped me open up to the world by ridding myself of my own fears of what I have perceived as different. For two years, I was Chapter Director of the Educational Theatre Association China, and drama education is what I now uphold as a remedy for our social and political climate.

True growth and learning occurs in a state of discomfort. Unfortunately, we so rarely allow ourselves the opportunity to be uncomfortable, thereby limiting our opportunities to evolve as individuals. I use theatre education to create these situations and shift the way

my students approach their life. My drama exercises ask students to enquire into, engage with, and embody their beliefs while remaining empathetic to others and mediating with one another. That alters perspectives.

The positive impact of drama is nothing new to us, so why is it not more widely evident in schools, universities and our society generally? The answer is stigma. Somewhere along the line someone got the idea that drama is only for the artistic, the weird, the poor, the less masculine and that it should be placed secondary to such subjects like maths and science.

This could not be further from the truth. While these subjects help us to sustain economies, it is drama and the arts that teach us what it is to be human. It teaches us sympathy, empathy, to relate and to seek out an interconnectedness with our enemies. And heaven knows, the world now should be seeking out commonality.

If we truly want to impact the world for the better, I say give it more drama.



This extract is taken from Philip's TEDx talk, *What the World Needs Now is Drama*, given at Simon Fraser University's TEDx conference in Vancouver this March.

Read more from Philip online about his experiences at TEDx at nott.ac.uk/drama

www.creativephilipj.com

“
It is drama and
the arts that teach
us what it is to
be human
”



What if we told you there was a magical tool which could provide you with the opportunity to do almost anything you wanted? To transform your way of thinking, try something entirely new, discover yourself. There is – volunteering. Gayle and Hugh share how two unique volunteering opportunities led to a life-changing journey of self-discovery.

TIME FOR A CHANGE



WORDS

Simon Harvey

Hugh Jaques *Chemistry, 2000* Alumni Volunteer of the Year 2018

“I got a lot out of my time at University and was lucky enough to land a great job straight away with Mars Incorporated, where I’m now a strategic capability director. My journey from undergraduate to experienced business leader gave me a genuine sense of wanting to give something back.

“I could have just written a cheque but that wasn’t enough. So I spent three years volunteering as a trustee board member with the Students’ Union. It was a two-way process and stretched my thinking constantly. There were lots of challenges, difficult conversations and contentious topics and it tested and developed my ability to cut through under pressure.

“Emotionally, it reinforced how important it is to be a non-judgemental listener and respect the views of others and hearing perspectives from industries and sectors outside my own was hugely enlightening.

“There could be conflicting views and major choices to make in my last year and helping the board navigate that time developed me as a leader.

It was uncomfortable at times but I’m glad I got to experience the high pressure and urgency because those are the moments that shape you as a person.

“It made me realise how important it is for me to work for an organisation that shares my values. One of my volunteering awakenings was seeing how such an agile organisation successfully negotiated a period of tremendous change. As a collective we made improvements around mental health provision, ethical investment policy and approved investment for new services in the Portland Building. I didn’t directly do this myself but being able to enable others to do it was fantastic.

“Adding skills to your CV through volunteering is great but giving back gives you a feeling of satisfaction that’s hard to match. You should expect to learn and be challenged as much as you challenge and impart learning to others.”



Gayle Higgott *Midwifery, 2017*

“Volunteering was the most astonishing experience I’ve ever had and life-changing in terms of challenging my thinking.

“With University and alumni support, through Cascade, I led a group of midwives on a two-week trip to Greece to help Syrian, Kurdish and Iraqi refugees, specifically post-natal mums and their babies. We knew it might be harrowing inside the camps but, in the end, just getting there was a major achievement.

“We were able to offer basic midwifery and held workshops to train other volunteers. It was a unique situation and we did the best that we could in the time we had. You learn very quickly that it’s not about you, it’s about being flexible, open-minded and mucking in. I’m convinced that you can make an impact in a day, a week or a fortnight.

Unless you do it yourself you will never know how life-enhancing an experience it can be.

“I’m now a newly qualified midwife with a family and a career and, as I refocus on my own priorities, it’s tempting to just move on and put the experience behind me. But it’s stayed with me. I can’t physically be there but through this digital world we’ve kept in touch and we’ve continued fundraising. I know that one day I’ll do it again.

“As a group of trainee midwives (I’m the one on the left), we shared a very special experience which has changed all our lives for the better. I’ll never let go of this experience and it will never let go of me.”

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WORDS
Simon Harvey

A WINNING MENTALITY.



One year into his degree, **James Gall** (*Economics, 2017*), a talented England U21 hockey player and British Universities and Colleges Sport Championship winner was “on top of the world”, until it all came crashing down.

“I don’t remember anything of the accident. My first real memories kicked in about two weeks later,” he explains.

In a freak accident James fell 15 feet through a flat roof, hitting his head on the way down, causing traumatic brain injury.

“I broke my back in three places and fractured my skull. I was put in an induced coma and needed intensive care. I was extremely lucky to be alive.”

His subsequent recovery has been called miraculous. He relearned the game he loved and just three years later, with a degree in his pocket, James won bronze medal at this year’s Commonwealth Games with the England hockey team.

But his recovery was far from easy. “Four months after the accident I was back at University but day-to-day life was tough. Physically I felt terrible. I needed a lot of sleep and woke up with headaches. Two consecutive lectures were a challenge and often, I couldn’t follow conversations.

“However I had amazing support – from the University’s Clinical Lead Physiotherapist Krista van Alten and all the hockey team, to student services and the School of Economics – they all helped to rebuild my confidence.

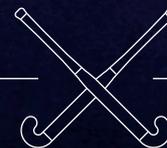
“I had to work very hard to get back into shape. My first game back was Varsity 2016

and I was severely overweight. We won even though I was terrible, but it was the moment when I knew that playing hockey at the top level was something I needed to get back in my life. I didn’t want to waste my talent and I wanted to get back to my hockey family.

“
**I broke my back in
three places and
fractured my skull**
”

“The Commonwealth Games experience was the best of my life. We were disappointed not to have made the final but winning a bronze medal felt like I could start to repay some of the faith and belief that people had shown in me.

“I’ve found the key to overcoming adversity is to find your support network and trust in it. When you’re struggling it’s hard to see the bigger picture but your support network can. I now know that whatever new challenge I’m handed, I will find a way to come through. Even if I don’t achieve all that I want, I can confidently say that I gave my all.”



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OUR CONGRATULATIONS TO...

We love to read your news, views and updates on life after university. We receive too many messages to list them all here, but if something important has happened in your life and you want to let us know, drop us a line. Here are a few of our top picks from this year...

f University of Nottingham Alumni
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THE WORLD'S highest honour in mathematics, the Fields Medal, was awarded to **Caucher Birkar** (*PhD Mathematical Sciences, 2004*) for his contributions to algebraic geometry. In a remarkable life story, Professor Birkar grew up in war-ridden Kurdistan, coming to England in 2000, where he was granted political asylum. Today he is Professor of Mathematics at the University of Cambridge.

BELLE CHEN (*International Business Management, 2015*) has been named in the Forbes China '30 under 30' list, which recognises young leaders in business and industry. Congratulations also go to **Abubakar Sadiq Mohammed Falalu** (*Entrepreneurship, 2014*) who was recognised as one of Africa's most promising young business people in the Forbes Africa '30 Under 30' list.

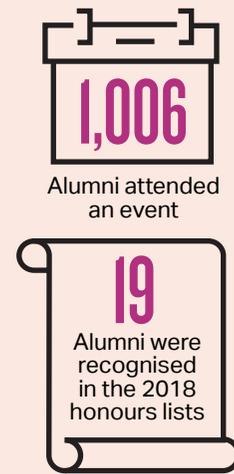
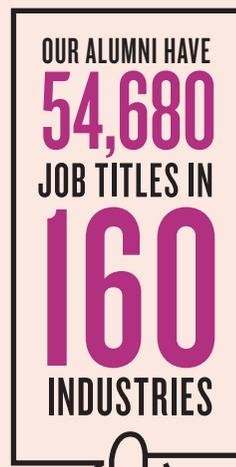
WELL DONE to everyone winning scholarships for further study, including London doctor **Isabel Straw** (*Medicine, 2016*), who has won a joint Thouron and Fulbright Scholarship award to study Global Health in the USA.

SIX YEARS after they met as students **Geraldo Tegouch** (*Mechanical Engineering, 2014*) returned to campus with girlfriend **Giovani Gracianti** (*Mathematics, 2013*) and surprised her with a carefully-orchestrated balloon marriage proposal. We're delighted to report that she said yes!



OUR CONGRATULATIONS go out to everyone building or changing careers; winning awards; welcoming new life into your family; setting up businesses, and doing amazing things around the world to help others. We are proud of you all.

OUR YEAR IN NUMBERS



OUR ALUMNI LAUREATE AWARD WINNERS

Every year at graduation, we make time to celebrate our alumni community through our Alumni Laureate Awards. This year, we are delighted to be presenting trophies to:

RECENT GRADUATE AWARD

- Nicola Byrom (*Psychology, 2009*)
- Rosie Tressler (*English Studies and History, 2011*)
Co-founders of the mental health charity Student Minds
- Faith Diorgu (*Midwifery, 2012*) Nigeria's most highly qualified midwife
- Dr Eric Gyan (*Cancer Immunology and Biotechnology, 2011*) CEO of MED Cancer Care Foundation, Ghana
- Michael Olatokun (*Law, 2014*) Human rights lawyer and activist
- George Pinner (*Management Studies, 2009*)
- James Gall (*Economics, 2017*)
- Joanne Hunter (*Chemistry, 2012*)
- Harry Martin (*Economics, 2016*)
Hockey Commonwealth Games bronze medallists

SPECIAL EXCELLENCE AWARD

- Dr Catherine MacDonald (*Genetics, 2001*)
Multi-award-winning garden designer
- Roger Munns (*Mathematics, 1996*) *Blue Planet II* award-winning underwater cameraman
- Loic Tallon (*Visual Culture, 2004*) Chief Digital Officer, Metropolitan Museum of Art
- Andy Wilson (*Computer Science, 2001*) Founder of computer games company, Hangar 13
- Cecilia Xu (*International Commercial Law, 1998*)
Barrister and first female Chinese national called to the Bar
- Didi Akinyelure (*Chemical Engineering, 2005*) Award-winning journalist and CNBC International presenter

LIFETIME ACHIEVEMENT AWARD

- Christopher Leong (*Law, 1988*) Human rights lawyer
- Clive Tyldesley (*Industrial Economics, 1975*) ITV's longest-serving football commentator

UNIVERSITY OF NOTTINGHAM MALAYSIA ALUMNI OF THE YEAR

- Gwi Terk Churn (*Applied Psychology and Management Studies, 2012*) Entrepreneur and founder of Dinez-in
- Dr Ching Lik Hii (*Engineering, 2010*) Co-founder of the UNMC Blue Sky Project



UNIVERSITY OF NOTTINGHAM NINGBO CHINA ALUMNI OF THE YEAR

- Wu Bing (*Finance, Accounting and Management, 2008*) Business leader and research partner
- Peng Yangyang (*Finance, Accounting and Management, 2011*) President of the UNNC Alumni Association UK Chapter

UNIVERSITY OF NOTTINGHAM NINGBO CHINA RECENT GRADUATE AWARD

- Tang Jing (*International Business Management, 2012*) The founder and Vice President of The Hong Kong Federation of Ningbo Alumni Associations



To find out more about our 2018 recipients, visit nott.ac.uk/alumni/laureate

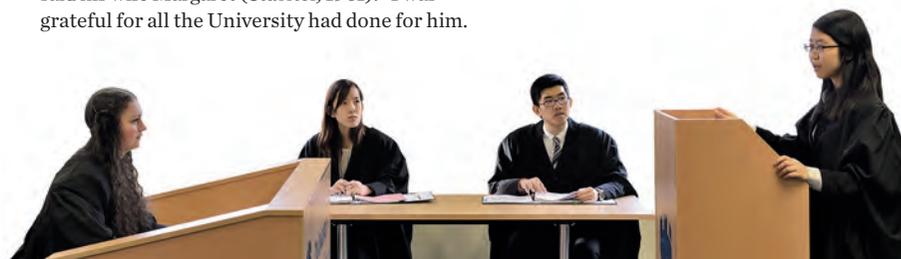
Thank you to everyone that has given a gift of time or money to the University this year. We particularly remember those whose generosity will create a lasting legacy for future generations, like **Michael Mallender** (*Law, 1962*).

Almost 60 years after enjoying Law Society activities at Nottingham, Michael has left a gift in his Will to give them a much-needed financial boost. Michael studied at Nottingham under Sir John Smith, the outstanding criminal lawyer of his time, and went on to become a prominent lawyer in his own right. He spent a lifetime serving the Derbyshire community as a solicitor and built up a vast experience of probate, trust and tax law, working with the longstanding firm Taylor, Simpson and Mosley for more than 50 years.

“He was very proud to be an alumnus,” said his wife Margaret (*Classics, 1961*). “I was grateful for all the University had done for him.

He was loyal to his county, his school, his wider interests and not least his University, all of which were reflected in the bequests under his Will.”

Michael left a £1,000 legacy to support today's law students, with the generous gift split between The Bar Society, Mooting and Pro-Bono Societies. The funds will support the societies' work in promoting careers at the Bar, presenting legal arguments in mock cases and wider outreach and voluntary work with primary and secondary schools, the local community and prison inmates.





BRENDA DEAN, BARONESS DEAN OF THORNTON-LE-FYLDE (1943–2018)
Pioneering trade union leader and close friend of the University, Baroness Brenda Dean has died, aged 74.

She served on University Council and was Honorary President of Women in Nottingham. Her contributions were informed by a long and successful career in public service and her devotion to the University community was evident in all of her work. Baroness Dean became the first woman to lead a major trade union when she was elected General Secretary of the Society of Graphical and Allied Trades (SOGAT) in 1985 during a tumultuous period of change within the print industry. She was made a Life Peer in 1993, a member of the Privy Council, and Doctor of Laws at the University in 2000. John Mills, Chair of Council, said: “Brenda had a warmth and vibrancy that made an impression on all who had the good fortune to spend time with her. Combining those qualities with a sharp mind and a great understanding of people from whatever background ensured she made a remarkable contribution to everything she invested her time in.”

STEPHEN GAWE (1938–2018)

African National Congress activist and former South Africa ambassador, Stephen Gawe (*Diploma in adult education*) has died, aged 80.

During a life in exile from his native country as a member of the then banned ANC, Stephen worked as a social worker and in adult education in the UK, gaining a diploma in adult education from Nottingham. Following the lifting of the ANC ban, he was able to return to South Africa, after almost 30 years, and he went on to become the organisation’s chief representative in London and then Rome. He was also appointed South Africa’s ambassador to Norway, and later Denmark, before retiring in 2005.

MARK WHITEHEAD (1957–2018)

Recently-retired CEO of Hong Kong Air Cargo Terminals (Hactl), Mark Whitehead (*Law, 1978*), died in his sleep whilst competing in the China Sea Race.

He qualified as a solicitor in 1979 and moved to Hong Kong where he joined the Jardine Matheson Group, holding several senior managerial posts over 23 years. He joined Hactl as Chief Executive in 2010, successfully steering the business through unprecedented change and winning a host of industry awards. Mark was a tireless fundraiser and a keen member of the rugby and sailing clubs at the University. Competitive sailing remained a passion in his life and he was a former Commodore of the Hong Kong Yacht Club.

ROBERT PASCALL (1944–2018)

Musicologist, Brahms Scholar and Emeritus Professor of Music at the University, Robert Pascall has died.

He joined the University as a lecturer in the Department of Music in 1968, becoming a professor in 1988. The crowning glory of his career was the production of new critical editions of the Brahms Symphonies for the complete edition of the composer’s works.

BRIAN WHITTLE (1933–2018)

World-renowned scientist Brian Whittle (*Pharmacy and Pharmaceutical Sciences, 1954*), whose academic and institutional accomplishments spanned the biotechnology sector, has died aged 85.

He enjoyed a lifetime working in the pharmaceutical industry, specialising in the development of plant-based medicines. He held senior positions at Wyeth Europa Ltd, Reckitt and Colman plc, and ICI Pharmaceuticals and in 1981, formed Brian Whittle Associates. Later he co-founded GW Pharmaceuticals and developed Sativex, an oral spray which was the first cannabis-derived medicine to be licensed in the UK.

ANDREW MASSEY (1946–2018)

English-born American conductor and composer Andrew Massey (*Music, 1969*) has died at his home in Vermont, after a lengthy battle with cancer.

In a career spanning five decades, he held principal positions with the Toledo Symphony Orchestra, Fresno Philharmonic, New Orleans Philharmonic, Rhode Island Philharmonic and latterly, the Middlebury College Orchestra, he graduated from Nottingham in 1969 with a masters degree in analysis of contemporary composition techniques.

We extend our condolences to the family and friends of those members of our University community who have died. We record the passing of alumni and staff on our website – visit nott.ac.uk/obituaries. If you wish to inform us of a death or submit an obituary, please email alumni-enquiries@nottingham.ac.uk

INSIDE THE COVER

As the nights draw longer and the days get colder, it's the perfect time of year to curl up with a good book. We asked some of our alumni and University community to share what they've been reading...

Sir John Sawers
(*Physics and Philosophy*, 1976)

FORMER MIG CHIEF



"I hugely enjoyed Steven Pinker's *Enlightenment Now*, which sets out all that is going right in the world. At a time when the West is fragmenting under the pressure of populist politics, especially in America and Britain, Pinker points to the many positives to hold on to, especially the improvement in the quality of people's lives across the developing world.

"I'm also enjoying following some of the columnists in the big newspapers. Janan Ganesh and Gideon Rachman coming to terms with Trump's America in the *Financial Times*; David Brooks, a moderate Republican, thinking deeply about America in the *New York Times*; David Ignatius and Fareed Zakaria commenting on world events in the *Washington Post*; and liberals in *The Guardian* like Martin Kettle and Jonathan Freedland, asking difficult questions of both Conservative and Labour leaders in the UK. *Prospect magazine* is another of my favourites, getting beneath the surface of issues. The freedom and quality of the upmarket press has survived the assault on liberal values – at least so far – and they have made a successful transition to being great online outlets."

Willin Low
(*Law*, 1996)

RESTAURANTEUR AND CHEF



"There's been a wonderful trend of good Singapore writers getting published recently. *The Sound of SCH: A Mental Breakdown, A Life Journey* is a first-hand account written by Danielle Lim about her family's journey as her uncle struggled with a crippling mental and social disease.

"I also follow Sonny Liew (@sonny_liew), a Singapore-based artist and writer, on Instagram. Sonny is a comic artist based in Singapore. His best known work *The Art of Charlie Chan Hock Che* tells the story of Singapore's formative years and provides an alternative viewpoint to the Government. He won three Eisner Awards for his graphic novel in 2013.

"Sonny is a breath of fresh air. There aren't very many artists in Singapore (much less a comic artist) and he is recognised internationally as being top of the game. He writes really well, providing alternative social political commentaries."

Professor Sir Martyn Poliakoff
RESEARCH PROFESSOR OF CHEMISTRY AT NOTTINGHAM



"I'm a compulsive book-buyer and read most of the books that I buy! Recently I've bought and read *The Feather Thief* by Kirk Wallace Johnson, an account of the theft of rare bird specimens from the Natural History Museum. I found it fascinating and Johnson unravelled the story rather like a whodunit. I also enjoyed *First Light* by Geoffrey Wellum, a very vivid account of training and flying spitfires in the Battle of Britain. I find it particularly striking that these pilots were barely older than my first-year students when they were fighting the Battle.

I'm reading *Viking Britain* by Thomas Williams as I write, having seen it recommended by *The Sunday Times*. It's an excellent history of the Vikings and really brings home quite how different their world was from ours. And, if you haven't read it, I recommend *The Periodic Table* by Primo Levi, a wonderful book and a great preparation for 2019 International Year of the Periodic Table. I was privileged to visit the lab where Levi was an undergraduate in Turin – we made a video of the visit on our YouTube Channel, *Periodic Table of Videos*."

Professor Zoe Trodd

DIRECTOR OF THE RIGHTS LAB AT NOTTINGHAM



"Every first-year student at the University this year will receive a free book on modern slavery, as part of the Rights Lab's year-long programme to build a slavery-free campus. Students will be given a specially designed copy of the book *Slave: The True Story of a Girl's Lost Childhood and her Fight for Survival* by Mende Nazer and Damien Lewis. The autobiography tells the story of Mende's experiences in modern slavery in Sudan and the UK.

"By reading this book, we hope to engage students and alumni in the University's important work to help end global slavery. We believe that slavery finally teeters on the brink of extinction, and that we can help to push it over the edge."

The Rights Lab is hosting a number of events and lectures this academic year so our alumni community can get involved and learn more about the incredible work the team is doing. Visit www.lakesidearts.org.uk for more information.

THE YEAR AHEAD



Don't miss out. Keep an eye on our website
for upcoming events and activities
nott.ac.uk/alumnievents



27 OCTOBER

Welcome the Class of 2018 to the Hong Kong alumni community at our alumni event



28 NOVEMBER

Get the inside track to success and join us for an evening with Head of McLaren, Jonathan Neale



13 DECEMBER

Our prestigious Alumni Laureate Awards celebrate success



JANUARY

Join us in Hong Kong at SPARK Festival or our alumni event



FEBRUARY

In need of career inspiration? Join our alumni mentoring scheme



20 MARCH

Join us in the shadow of the Golden Gate and catch up with friends at our alumni reception



APRIL

Discover how the Fourth Industrial Revolution will change the legal system at our law networking event



MAY

Network at our Nottingham in the City event for finance professionals



15 JUNE

It's all to play for at our annual Alumni Sports Challenge!



JULY

Why not organise a summer reunion for friends with the help of our team



SEPTEMBER

Come back to school with our latest online courses and resources



OCTOBER

Pay it forward to welcome new students with a free cup of coffee