

BA2

THE MAGAZINE FOR ALUMNI AND FRIENDS OF THE UNIVERSITY OF BATH
ISSUE 26

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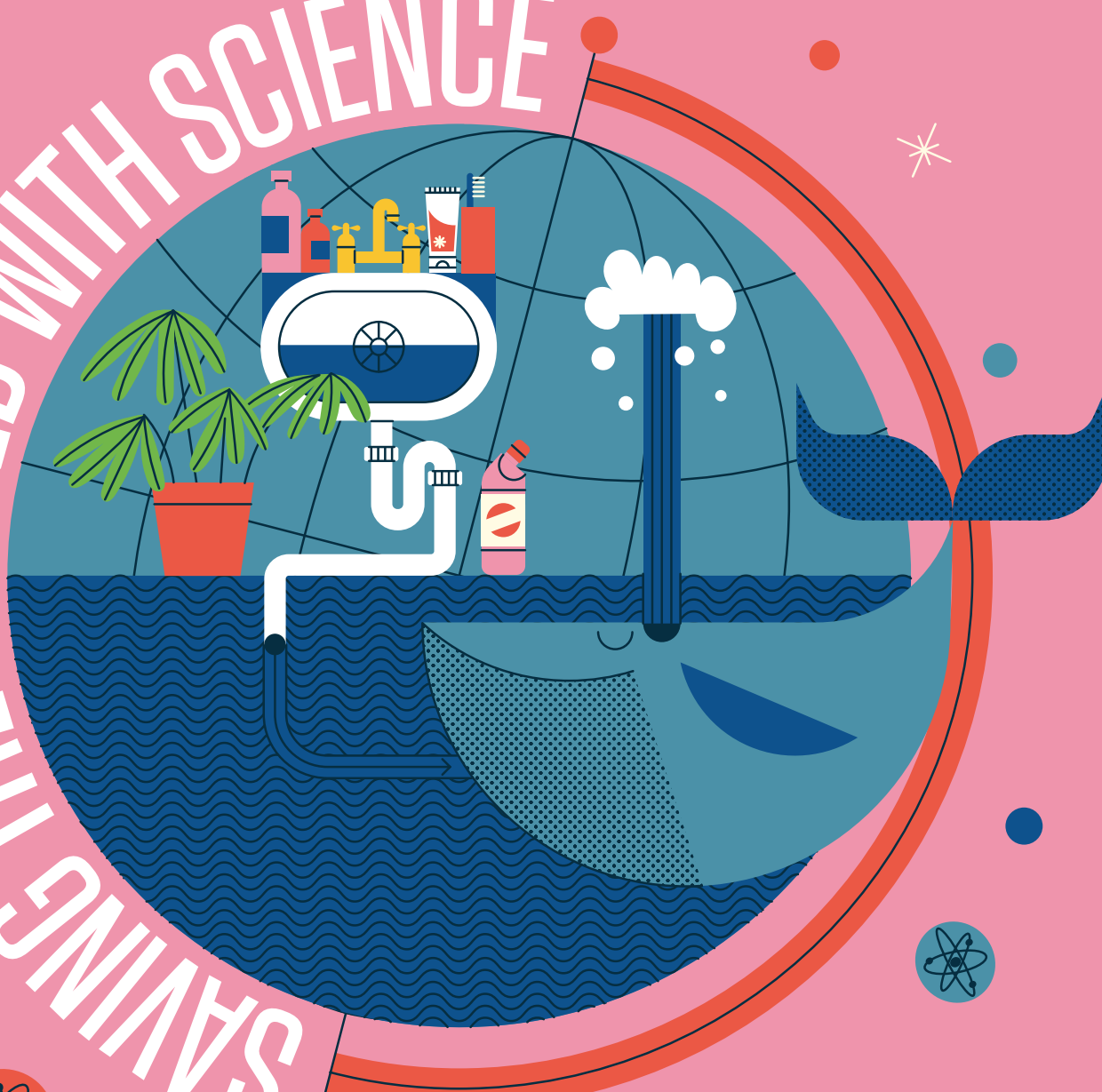
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MIND-BLOWING
WAYS WE'RE SOLVING
SOME OF TODAY'S
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SAVING THE WORLD WITH SCIENCE



UNIVERSITY OF
BATH

We've had a whale of a time putting together this BA2. It's opened our eyes to some of the mind-blowing things our researchers are getting up to in the labs on campus, including inventing a novel way to reduce ocean pollution and creating a fake poo factory to understand how diseases are spread.

From microscopes that can be 3D printed in minutes, to vaccines that stay cold without refrigeration, turn to page 8 to find out how they're making a world of difference.

We hope you enjoy it. Let us know by emailing alumni@bath.ac.uk – start your message with 'BA2'.



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more than £68m
to our campaign.
Thank you.

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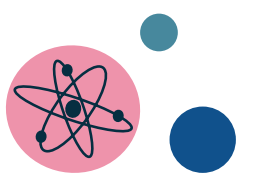
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Snap back in time

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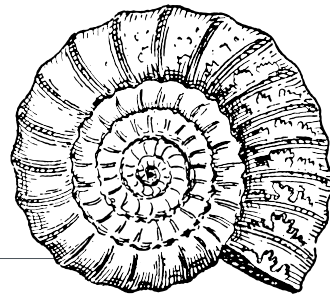
Look Further campaign success

Thanks to our alumni and friends, we have now raised more than £68m towards our Look Further fundraising campaign. The campaign was launched ahead of the 50th anniversary to celebrate everything our University has achieved, with the initial target of £66m set in honour of the year we received our Royal Charter, 1966.

Your donations have supported research in areas such as diabetes, vaccines, autism and sustainability. They have also helped hundreds of bright students from all backgrounds

to achieve more than they ever thought possible. Our Gold Scholarship Programme is a lasting legacy of this campaign, and each year it will give 50 young men and women a golden opportunity to succeed.

On 24 May the Chancellor hosted a special reception at Windsor Castle, where beneficiaries of the campaign had the chance to meet with supporters and update them on the impact of their donations. Turn to page 6 to learn more about how people's lives are being transformed by your gifts.



Campus

Campus evolution

The Milner Centre for Evolution is open. Situated near the lake, this brand-new facility is the first of its kind in the UK – and only the second in the world – to focus on this area of research.

From studying fossil records to investigating the evolution of genes and microbes, the Centre aims to apply this knowledge to address real-world problems, such as medical treatments. World-class research will also be combined with outreach, through hands-on educational activities in schools, free online courses and more.

Part of our Department of Biology & Biochemistry, the Centre is named after alumnus Dr Jonathan Milner, who donated £5.6m and made it all possible.

Campus

Best in the South West



Bath has been voted number one in the South West and fourth nationally for providing the best overall student experience. Thousands of undergraduates across 122 institutions were asked what they really thought about all aspects of student life, from the facilities and societies on offer, to wellbeing support and teaching quality.

This accolade coincides with being named the region's top university for a third consecutive year by the Complete University Guide 2019. In addition to the support provided to students while studying here, employability remains very high thanks to our successful placement schemes and starting salaries are £4,500 higher than the national average.

Campus

Building future excellence

The School of Management has achieved remarkable things in the last 50 years. It's a world top 100 school with strong graduate employment rates – providing talent that is a vital support for the UK economy.

Now, the School will be united under one roof for the first time, in a £70m facility. Due to open in September 2020, the building will be a new gateway to the campus and a hub of innovation. It will include an Entrepreneurship Lab, enabling students to unleash the potential of their ideas, a Behavioural Research Lab to tackle the most critical questions facing managers, and state-of-the-art lecture theatres and conference facilities.

"The achievements of this School are shown in our excellent teaching and research rankings," says Professor Veronica Hope Hailey, Vice-President Corporate Engagement, Dean and Head of the School. "This new building will enable us to be even more ambitious as a community of scholars, students and employers in shaping management practice in a 21st century world."



£68m

(and counting). Your incredible donations are helping our students and researchers to look further



Teaching

Cracking the code

The UK is facing a digital skills shortage that could put the country's future growth at risk.

To tackle this, the Government has announced a £40m Institute of Coding (IoC). The University of Bath is leading this nationwide initiative, which brings together more than 60 universities, employers and industry leaders.

Universities Minister Sam Gyimah MP said the aim is to "help graduates build the right skills, in fields from cybersecurity to artificial intelligence to industrial

design." Employers will have an input into the curriculum, ensuring it develops specialist skills in areas where they are needed most.

As well as offering a range of university courses, the IoC will support the development of people at different stages in their careers, and also work with schools and colleges to encourage a larger number of underrepresented groups into the sector.



Chancellor

Chancellor visits India

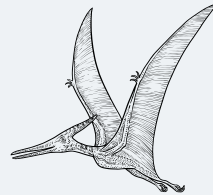
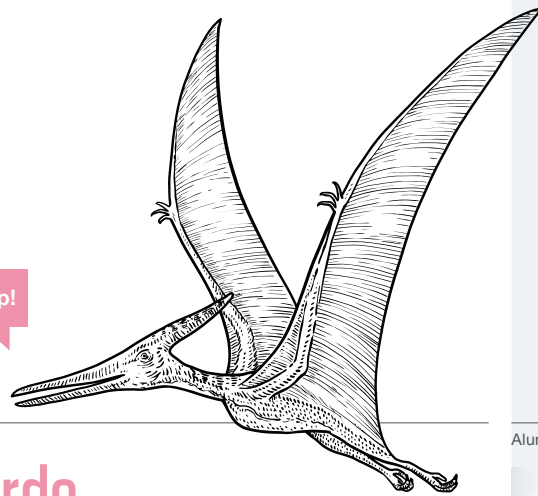
Did you know we have more than 300 Indian students currently studying at Bath, and over 900 alumni living in India? Earlier this year, we paid some of you a visit, in the company of our Chancellor, HRH The Earl of Wessex.

His Royal Highness was recently reappointed as the University's Chancellor for the next five years. He said: "I have had the pleasure of meeting numerous talented graduates who have spoken with real passion about their

studies, as well as the sporting, cultural and social opportunities they have experienced whilst at Bath. I look forward to continuing as Chancellor and playing my role in the University's continued success."



Keep up!



Research

Buzzwords

What our researchers are talking about

Patch tests

An adhesive patch could replace the finger-prick blood test for millions of diabetics, developed in our labs. This work was supported by alumni and friends.

Flying dinosaurs

Fossils of six new species of pterosaurs have been discovered. They were the largest animals ever to take wing, but the asteroid wiped them out.

Gender equality

Female scientists are penalised by motherhood, a study has found. Results revealed that women receive less funding than their male peers, and researchers suggest favouritism or unconscious bias is to blame.

Animal animations

Computer scientists are collecting motion capture data from different dog breeds. This will help translate the movements of a human actor into an animal avatar in Hollywood.

The morning after

A study of university students has shown that a hangover shared is a hangover halved, as collective suffering can strengthen social bonds in friendship groups.

Find out more about our research at www.bath.ac.uk/research



I hope you've captured my good side.



Alumni



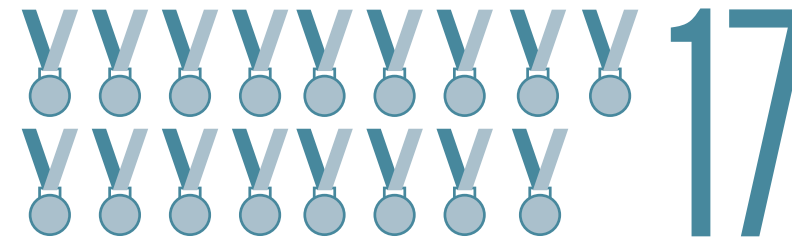
PhD student slides to Olympic glory

Bath student Dom Parsons bagged Team GB's first medal of the 2018 Winter Olympics, with a bronze in Skeleton. This achievement also made him the first British male skeleton medallist in 70 years.

"Winning an Olympic medal was a dream I'd been working towards for over ten years," he said, speaking at a reception for our 50 Gold Scholars, donors and alumni mentors. As the recipient of a Santander Scholarship during his undergraduate degree, Dom knows first-hand the impact it can make. "Every bit of support I received in that time was crucial, and the scholarship funded the development of essential equipment that helped my performance at the Games."

When he's not racing, Dom is working towards a PhD in Mechanical Engineering and helps to design the skeleton equipment. Incidentally, it was at the University's push-start track – the only one in the UK – that Dom was first introduced to the sport. It's also where the UK's most decorated Winter Olympian, Lizzy Yarnold, has honed her technique. Lizzy defended her title by winning gold in Pyeongchang, with team-mate Laura Deas taking bronze.

For all the latest sport updates, visit www.teambath.com/news



The number of medals won by University of Bath-based athletes in the 2018 Commonwealth Games

Research

Partnership with Bath Rugby

Did you know our Department for Health is leading the way in rugby research?

Not only did we develop the Crouch, Bind, Set technique to make scrums safer, we've also come up with innovative exercises that will help prevent injuries.

Now, Team Bath has partnered with Bath Rugby to support player development and help nurture more stars of the future. As part of our relationship, we hosted a hospitality box at Twickenham for alumni and friends for The Clash 2018, where guests watched Bath take on rivals Leicester Tigers and took part in a Q&A with players.

Campus

Sports University of the Year

Bath's winning combination of academic prowess, world-class facilities and the success of student athletes has earned us first place on the podium. Not only have we topped the Sports Science subject ranking in *The Times* and *Sunday Times Good University Guide 2018*, we've also been named the UK's top sports university.

Our £30m Lottery-funded Sports Training Village (STV) benefits students, elite athletes and the general public alike, and it is about to unveil a new £3.5m two-storey gym. The STV regularly hosts major international competitions, and back in April we

held the UK team trials for the Invictus Games for the third consecutive year. Its patron and founder, HRH Prince Harry, and then-fiancée Meghan Markle, visited campus to cheer on the hundreds of competitors.



Research

In a nutshell

Why does that seagull have teeth?

It's not a seagull.

That's a relief. I wouldn't want to run into him in Weston-super-Mare, stealing my chips.

It was a similar size to a seagull though. Its name is *Ichthyornis dispar*, and it lived around 86 million years ago in North America.

We now know dinosaurs had feathers, but are you telling me that, millions of years ago, birds had teeth?

Yes. Scientists at Bath and Yale Universities have proved it.

How did they do that?

They found a complete skull fossil. Whereas most fossils are squashed flat, this is the first fossil of *I. dispar* with its skull preserved in 3D.

Why is that so important?

In addition to teeth, they can see the brain cavity inside. According to Dr Daniel Field from our Milner Centre for Evolution, the fossil showed its brain would have been a similar size to a modern bird, but other parts of the skull more closely resembled those of predatory dinosaurs. Hence the teeth.

And where did they find this beak?

Right under their noses.

Ha! I see what you did there.

No, seriously. In order to prove their theory, they combined the new fossil with cranial fragments of an original specimen found in the 1870s, which had been stored at Yale University but previously overlooked.

Daniel CT-scanned the fossils to produce the results.

So what does it mean?

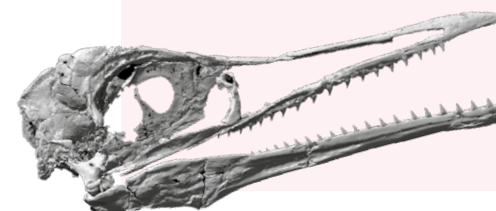
It captures a pivotal moment in the transition from dinosaurs to modern birds – one of the most striking transformations in evolutionary history.

Nicely put. You're not a bird brain, after all.

Shut up and pass the chips.

Hungry for inspiring research?

Come to the Discovery Series in London on 13 November, 7-9pm. www.bath.ac.uk/events/discovery-series



TOGETHER, WE'VE LOOKED FURTHER



Thank you!



Powering innovation

For his final year project, engineering graduate George created the first prototype of Pushme – a removable device that turns a regular bike electric within seconds. Thanks to an Innovation Award, George received the push he needed to pursue his entrepreneurial dream, and Pushme is now in production. George said: “It changed the course of my career and ultimately my life.”

Preventing Alzheimer's

Meet the Manduca sexta, or ‘six-fold glutton’ caterpillar. It loves sugar so much that our scientists have used it to monitor the effects of high glucose on protein damage in the body. Now, for the first time, they have established a link between high blood sugar levels and Alzheimer's. It's a vital clue in learning how the disease develops and could lead to new treatments.



Student experience

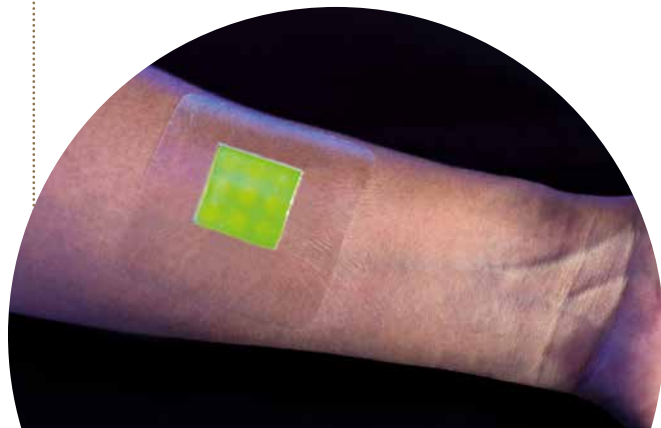
The Alumni Fund helps to enhance the student experience by supporting SU clubs, teams and societies.

Our 50th anniversary Look Further campaign has raised over £68m, thanks to the amazing generosity of our alumni and friends. Here are just some of the people and causes that our donors have supported...



Smart wound dressings

Burn wounds can become easily infected, and for small children, these infections can be life-threatening. Our researchers have come up with a solution: a revolutionary burns dressing that glows if it detects toxic bacteria. This means doctors don't need to remove bandages to check for infection, avoiding further pain, potential scarring and unnecessary antibiotic treatment.



Exploring evolution

A gift of more than £5m from alumnus Dr Jonathan Milner launched our Look Further campaign. The Milner Centre for Evolution on campus is a unique research and education centre, bridging biology, health and education.

Outreach is at the heart of this new facility and is something Jonathan is very passionate about: “I feel it's the moral responsibility for scientists to share our knowledge with the rest of the world. The big vision is that we have a centre that is going to be the best in Europe – and we hope the best in the world.”



Making futures brighter

At school, Steph was told that university was ‘not an option’ for her. This year she graduated with a degree in Psychology. She describes her scholarship as four years of financial security, but it was much more than that. Steph's scholarship gave her time to care for her dad before he died. “I didn't have to worry about part-time work, or whether I could afford to get the bus,” she explains. “These were simple, everyday things that changed my life, and they changed his life as well.”

Giving golden opportunities

Our Gold Scholarship Programme helps undergraduate students most in need.

Sherifat, one of our Gold Scholars, was raised by her mum and helps to look after her two autistic brothers. The financial support means she can travel home often. “My mum knows I can be there when she needs me,” she says. “The scholarship has not only impacted on me, but my whole family.”



Best in class

Team Bath Racing Electric is currently the UK's best student electric racing team. Each year, the team designs, builds and tests a race car to compete at Silverstone in the Formula Student competition. Alumni donations have helped drive innovation and education.



Supporting world-changing research

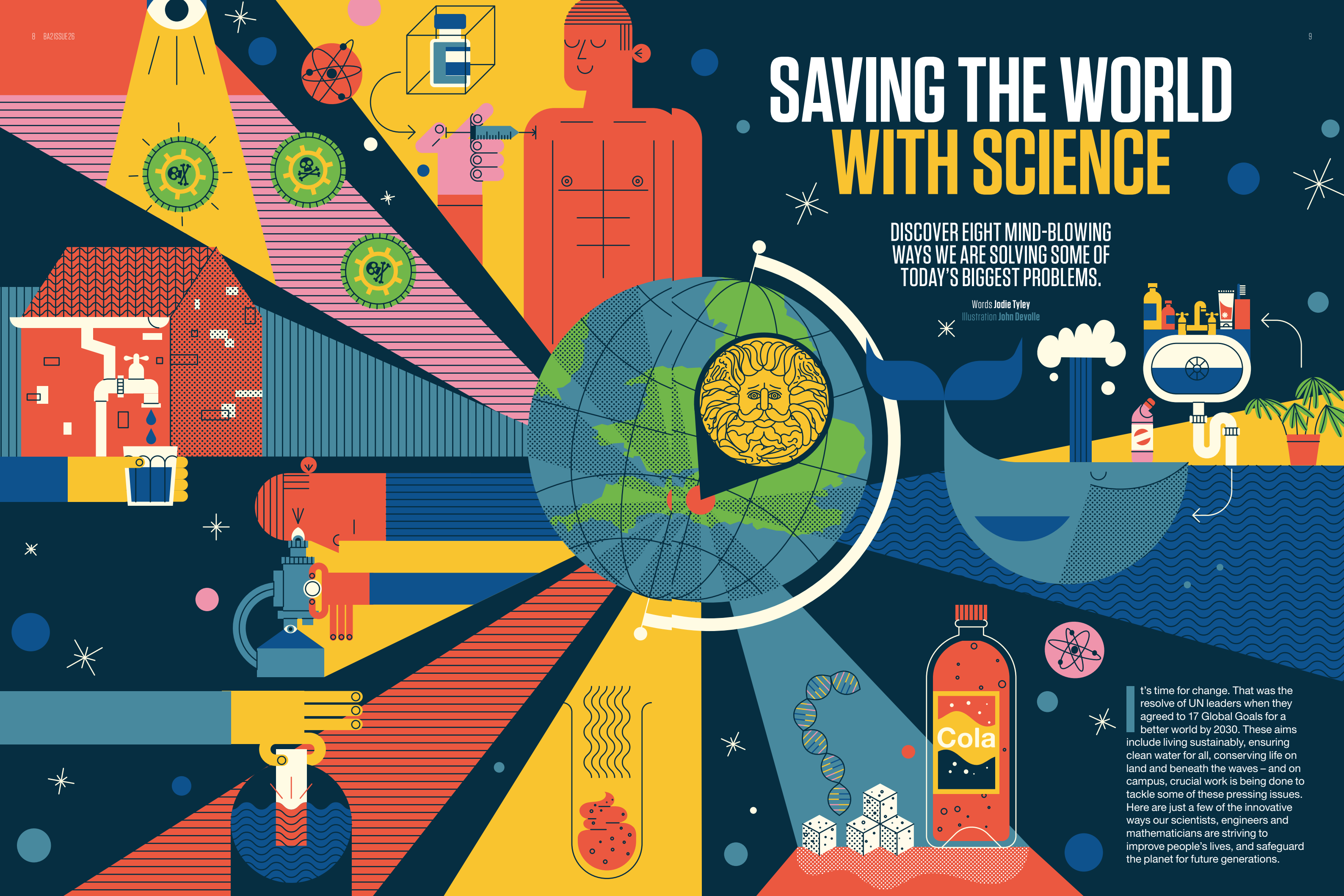
Fuelling cars with coffee, turning sugar into plastic and creating next-gen solar cells – just some of the ground-breaking research projects from our Centre for Sustainable Chemical Technologies. Discover more on page 8.

Thank you to all our donors who have helped our students and researchers look further than ever before. Making a difference to people's lives is what drives us after 50 years – and will continue to do so, for years to come.

SAVING THE WORLD WITH SCIENCE

DISCOVER EIGHT MIND-BLOWING WAYS WE ARE SOLVING SOME OF TODAY'S BIGGEST PROBLEMS.

Words Jodie Tyley
Illustration John Devalle



It's time for change. That was the resolve of UN leaders when they agreed to 17 Global Goals for a better world by 2030. These aims include living sustainably, ensuring clean water for all, conserving life on land and beneath the waves – and on campus, crucial work is being done to tackle some of these pressing issues. Here are just a few of the innovative ways our scientists, engineers and mathematicians are striving to improve people's lives, and safeguard the planet for future generations.



Turning plants into plastic

"The world must act now to save our seas," warns Sir David Attenborough. The naturalist, broadcaster and honorary graduate exposed the devastating effects of plastic on marine life in the BBC's *Blue Planet II*. "For years we thought the oceans were so vast and the inhabitants so infinitely numerous that nothing we could do could have an effect upon them," he says. "But now we know that was wrong."

This year, the government issued a UK-wide ban on one source of plastic pollution – microbeads – found in cosmetic products. It's estimated that a single shower can result in 100,000 of these tiny spheres washed into the ocean, where they are ingested by birds, fish and other marine life.

The industry must clean up its act, and scientists at Bath have found an ocean-friendly alternative to these polluting plastics.

They have developed biodegradable beads made from cellulose – a material that forms the tough fibres found in plants. Our scientists dissolve the cellulose and reform it into tiny beads that remain stable in a body wash, but can also be broken down in the sewage treatment works.

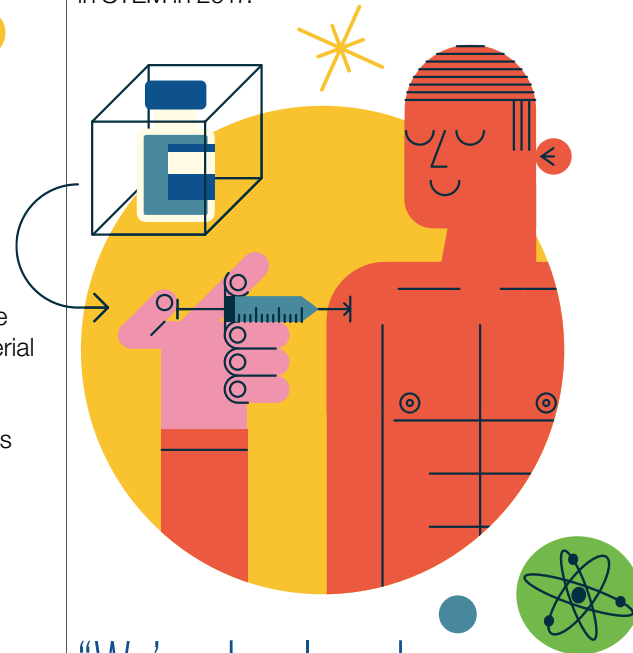
Professor Janet Scott from our Department of Chemistry and part of our Centre for Sustainable Chemical Technologies (CSCT) says: "Microbeads used in the cosmetics industry have previously been made from polymers that are derived from oil and take hundreds of years to break down in the environment. These are now to be banned, but we've developed a way of making microbeads from a renewable source, cellulose, which biodegrades into harmless sugars."

In the future, it's hoped that these will replace harmful microbeads, helping to reduce the flow of plastic in our blue planet.

Keeping vaccines safe

While taking her daughter for routine jabs, Dr Asel Sartbaeva noticed the vaccines were kept refrigerated, which keeps them from breaking down and becoming unusable. She was inspired to find a way of storing vaccines that didn't rely on refrigeration, which is not only expensive, but also a major logistical problem when delivering vaccines to remote areas of the world.

She and her research group have created a technique which keeps vaccines intact up to 100°C by locking them in microscopic silica cages. Silica – the main component of sand – is non-toxic, inert and can be removed chemically. This discovery has the potential to save millions of lives. Asel, originally supported by a donation from graduate Tim Ford, and now a Royal Society University Research Fellow, was recognised for her outstanding work at the WISE Awards for women in STEM in 2017.



"We've developed a way of making microbeads from a renewable source, cellulose, which biodegrades into harmless sugars"

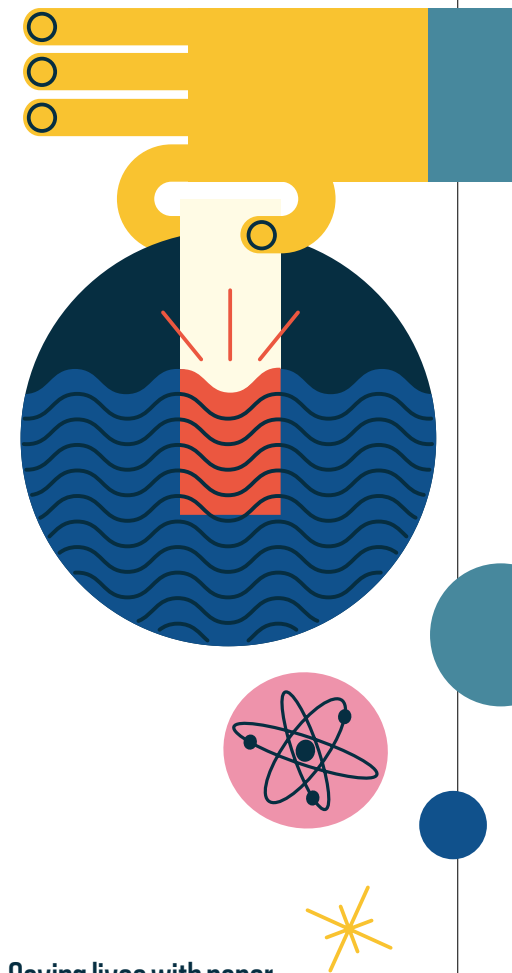
Tapping rain to quench thirst

Of all the water on Earth, less than one per cent is drinkable, and Mexico City's parched population is facing a crisis. Poor infrastructure has led to waste water contamination, and climate change has made matters worse by causing drought and increasing demand.

Jon Chouler, a chemical engineering postgraduate researcher from our CSCT, is working towards a solution. Having spent six months in Mexico City with the charity Engineers Without Borders UK, Jon has seen first-hand the hardship that citizens face. "It's eye-opening that so many homes don't have access to water," he says. "Sometimes the taps run once a week, sometimes once a month – people live in uncertainty. And when water flows, it's unclear and muddy." Instead, many depend on *pipas* – water trucks that command high costs for an irregular supply.

However, if disinfected and stored correctly, simple rainwater could address this problem. Jon is working with Isla Urbana, a non-profit organisation that's designing and installing rainwater harvesting systems in poor neighbourhoods. The device collects rain from the roof and uses a series of filters to remove debris before being disinfected by a chlorinator.

Jon is developing a chlorinator that's more accessible, reliable and easier to use than the existing model. "Trying to source specific materials for my work is certainly a challenge, especially with the language barrier," he says. "But it's incredibly rewarding. The people I've met have been so happy and thankful for the rainwater harvesting systems – they no longer have to walk long distances or wait in line for water from *pipas*. They feel better knowing that when the taps don't run, they have a water store to use." The improved chlorinator is not commercially ready, but by the time Jon returns he believes he'll have a clear set of recommendations on which to build.

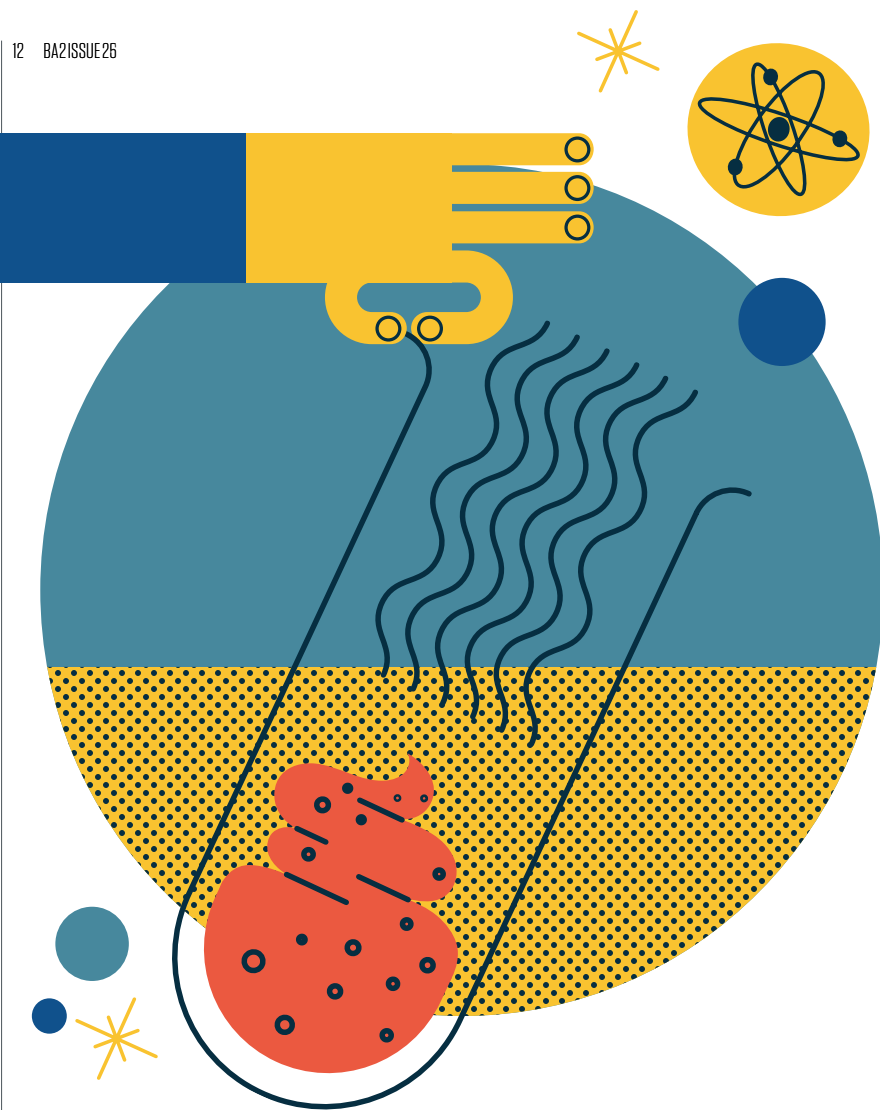


Saving lives with paper

Paper with the power to test for polluted water could save lives in poor areas of the world. That's the latest revolutionary development from our CSCT and the Water Innovation & Research Centre.

Inspired by the simplicity of litmus paper – a chemistry class favourite – the technology is essentially a microbial fuel cell (MFC) fitted to a piece of paper. An MFC uses bacteria that produce electrons as they break down food, which in turn generates an electric signal. However, toxic water will harm the bacteria, so they'll produce fewer electrons and the current will drop, sending a warning message that the water is unsafe to drink. As dirty water kills a child every two minutes, this work is vital.

"This research will especially benefit areas where access to even basic analytic tools is prohibitive," says Dr Mirella Di Lorenzo, lead author and Senior Lecturer in the Department of Chemical Engineering. "The device is a small step in helping the world realise the United Nations' call to ensure access to safe drinking water and sanitation as a human right."



Making poo in the lab to improve sanitation

"Developing and testing batches of fake poo isn't something many people can say they do as part of their day job," admits postgraduate researcher Naomi Deering. "At times it may not be pleasant but the potential impact of this project makes this work so worthwhile." Naomi is helping to find ways of treating human waste – an issue that affects 2.7 billion people without access to a flushing toilet – and this lab-created poo enables the team to carry out experiments safely.

In places where basic sewerage and waste water treatment are non-existent, drying beds could be the answer. Natural sunlight and heat dries out the sludge, and as it loses water, the temperature rises, killing off parasite eggs and pathogens such as E.coli and Salmonella and reducing the risks of illness and death. Eventually, the sludge can be composted for use in agriculture.

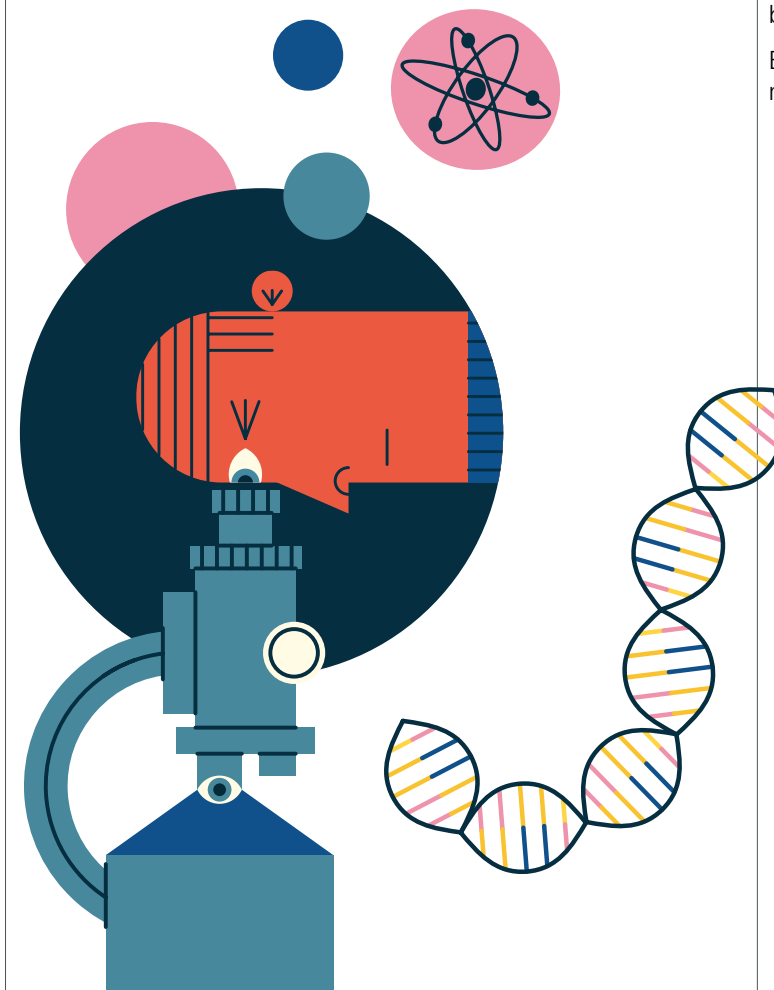
"Developing and testing batches of fake poo isn't something many people can say they do as part of their day job"

To better understand the drying process, the team is testing the sludge in drying beds exposed to a variety of humidity, temperature and solar radiation conditions. The aim is to take this research from the laboratory to the lavatory, providing best-practice guidelines that can be used in a range of countries and climates.

Printing microscopes to detect disease

3D printing is revolutionising medicine – not only in the production of prosthetics and implants, but also medical equipment. Dr Richard Bowman from the Department of Physics is working with the University of Cambridge and Tanzanian STICLab to create low-cost devices for disease diagnosis and scientific research. The project is made possible by the Global Challenges Research Fund, which supports studies that address issues affecting developing countries.

They have developed a microscope made from mass-produced lenses and a 3D-printed plastic frame costing just £30, paired with a Raspberry Pi mini-computer. Optical microscopes are normally prohibitively expensive, but can be used to identify deadly parasites, such as malaria, in blood and water samples. The designs are freely available online so local entrepreneurs can recreate this equipment in some of the poorest areas of the world.

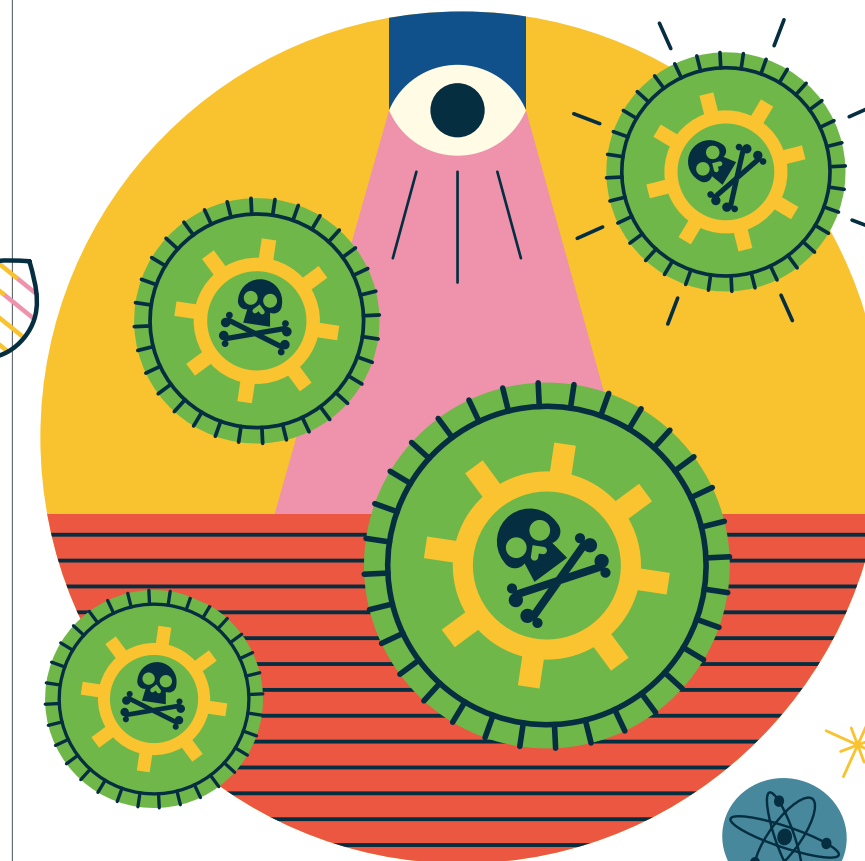


Fighting cancer with landmine research

Hidden landmines and cancerous tumours – two seemingly unrelated problems that have one common challenge. Both can only be detected with extremely accurate imaging techniques. That's what our Engineering Tomography Lab (ETL), led by Professor Manuchehr Soleimani, is helping to develop. This life-saving research began in 2015 with funding from footballing legend and honorary graduate Sir Bobby Charlton CBE and his charity *Find A Better Way*. Its aim: to clear the 110 million active landmines in place across the globe.

Since then, the team has produced a smart camera that uses copper electrodes to scan the ground to determine how insulating it is. As modern-day landmines are made of plastic – a good insulator – they can be detected. To avoid confusion with buried plastic rubbish, the researchers have used mathematical algorithms to convert the electrical signal into a 3D image. This technology is now being developed for use in the field.

But that's not the only way mathematics can save lives.



"This could be the work of a lifetime, but if it can one day help society, it's worth it"

The ETL has also been working with CERN – the world's largest particle physics laboratory – to create medical imaging software with the potential to significantly improve the treatment of cancer patients. Currently, patients have a scan to find out whether a tumour is present, usually in a CT scanner. An X-Ray source rotates around the body, creating multiple images from different angles that are assembled into one 3D image using mathematics.

The new TIGRE software can produce images faster and at a lower radiation dose than before. Importantly, it can account for movement, so when a patient is having a scan for lung cancer, breathing in and out, the images are clearer, enabling more accurate treatment.



Creating drinks bottles from sugar and fizz

Scientists from our CSCT have found a way to make polycarbonate plastics from sugars and carbon dioxide. In the future, these could replace unsustainable plastics made from crude oil. This new type of plastic is biodegradable and biocompatible. As some of the carbohydrates (sugars) that can be used are the ones found in our DNA, they could eventually be used for medical implants, or even to support the artificial growth of replacement organs for transplant.

"It's early days, but the future looks promising," says Dr Antoine Buchard, Royal Society University Research Fellow and previously a Whorrod Fellow. "This could be the work of a lifetime, but if it can one day help society, it's worth it."

Make a date for the Discovery Series

Join us to dig deeper into some of these remarkable discoveries with our researchers. Tuesday 13 November, 7-9pm in London. Tickets cost £15. Book at www.bath.ac.uk/events/discovery-series

THE LAST WORD

AS PROFESSOR DAME GLYNIS BREAKWELL PREPARES TO SAY FAREWELL, SHE REFLECTS ON HER TENURE AS VICE-CHANCELLOR WITH ALUMNA SUE RYAN.

When Professor Glynis Breakwell was interviewed for the post of Vice-Chancellor at the University of Bath she was asked how, as a woman, she would deal with it.

She replied that she carried a hammer around with her, just in case she came across the notorious glass ceiling. They laughed, but she was serious. The metaphorical hammer has been with her throughout her career.

She had been Pro-Vice-Chancellor and Head of Human Sciences at the University of Surrey. She had published 20 books and hundreds of articles, many highly cited, and she was already a public policy adviser.

It was the sort of CV that made her a head-hunter's dream. There were other offers but she chose Bath because "the people who interviewed me here were so challenging, so down to earth. They knew what they wanted and I thought these are people I can work with." It was 17 years ago – she had just turned 47.

"I felt they were taking a risk. I was an unknown quantity, relatively young, a woman, and I was not an engineer, I was not a physical scientist."

More recently she has been the recipient of a few hammer blows herself. Well known in the academic community, she only burst on to the public consciousness when salaries for senior university staff were made public. Heading the league table was Dame Glynis.

Amidst the hue and cry that followed the media scrutiny of her £468,000 pay packet, she announced that she would be stepping down as Vice-Chancellor this summer.

The attention was focussed on the numbers that made up her salary, pension, and housing allowance rather than the numbers that tell the story of her years in office.

And, by any measure, they are impressive.

In 2001, the University had a research portfolio of £51 million. Last year that reached £150 million.

There were 5,500 UK undergraduates and 590 from abroad. Today there are over 10,000 UK undergraduates and 3,000 from overseas. More impressive is the growth in masters and doctoral students from all over the world – currently nearly 5,000 study at Bath.

The University's turnover in 2001 was £89 million, compared to the current £276 million, and staff members have risen from 2,160 to 3,350.

Most CEOs would be basking in glory over such a record. But vice-chancellors are academics and are scrutinised under different criteria. But here too is astounding success.

In the seventies attending the University of Bath was not something to boast about to prospective employers or at dinner parties. Bath was not premier league.

Today the University is transformed into one of the global elite, with international stature abroad, and a string of accolades at home. The *Guardian* ranks it sixth in its latest league table with 13 subjects in the top ten and psychology, her own discipline, taking top place.

It is fourth in the *Times Higher Education* student experience survey and top in the South West. It was ranked 12th highest in the country for research in the 2014 Research Excellence Framework assessment.



About the author

Sue Ryan (BSc Sociology 1972) is a media consultant, Director of the Henley Literary Festival, and a former managing editor of the *Daily Telegraph*.



In this year's *Times and Sunday Times* influential Good University Guide it comes out as the top sports university. A thousand students compete every week in British Universities and Colleges Sport (BUCS).

On the day I arrived for this interview, the University was in the news for breakthrough research on diabetes, a visit from Prince Harry and Meghan Markle to the Sports Training Village and for notching up 17 medals in the Commonwealth Games.

"It's not one person," says Dame Glynis of the achievements. "None of the things that have been achieved over the last 17 years can be laid at one person's door – and particularly not mine."

I first met the Vice-Chancellor a couple of years into her tenure. She believed that alumni were an untapped resource and a few of us were rounded up to suggest how to harness it.

I was sceptical. Bath was not Harvard or Yale, or Oxford or Cambridge.

But I was wrong. Millions have been donated for research projects and alumni have opened up prestigious placement opportunities for students (contributing to the fact that Bath graduates enjoy a larger average starting salary according to the *THE*.)

They also provide scholarships. Since 2001 donations have accounted for 1,750 scholarships and more than a hundred are now awarded every year.

"These are students who would not be able to benefit from an education at Bath – and we have had some absolutely wonderful cases of people who have excelled who would never have been able to manage it without the financial support. And it transforms their lives.

"There is a virtuous circle here because what we realised was that our alumni, once they realise the impact they are having through the scholarship programme, become more engaged with the University."

This time we meet in her office. Cream carpets signal a change of status from the admin area, but otherwise her office is simple, elegant and unostentatious. A single painting hangs on the wall beside her desk. It is one she painted of her father as a young man, a factory worker who left school at 14.



“
I felt they were
taking a risk. I was
an unknown
quantity, relatively
young, a woman,
and I was not
an engineer or
physical scientist
”

She was brought up in the Midlands and her parents encouraged her to do whatever she wanted to with her future.

"I don't think they even knew what psychology was, but when I said I wanted to study psychology they said 'fantastic, go for it'."

She took her PhD from Bristol and an MA and DSc from Oxford where she held a prize fellowship at Nuffield College.

Unusually for a vice-chancellor she has continued with her research throughout her tenure and in 2014 was named in the Science Council's list of 100 leading UK practising scientists. In 2012 she was appointed Dame Commander of the Order of the British Empire in the Queen's New Year's honours list in recognition of her role in championing scientific and technological innovation in universities and its knowledge transfer to business.

She works long hours but prefers to downplay that in case colleagues feel pressured to do the same. "It's not actually about the hours," she says, "it is the focus, the concentration and the determination that matters."

I suggest that stepping down from being V-C will be hard. Even in the supermarket people she bumps into will say 'hello Vice-Chancellor' not 'hello Glynis' and she replies: "No, if you ask me what I am, I would say I am a psychologist. I don't say that I am a vice-chancellor. Everything else I do is a corollary to that central identity.

"I have been doing this job for 17 years. It is very rare for a vice-chancellor to be at an institution for 17 years, very rare. It's also very rare for a vice-chancellor to continue with research. I have maintained my discipline interests so now that is the obvious road forward. I have an extensive set of research commitments and books waiting to be written. It will also be great to have more time to paint – my second, creative, love."

She had always planned to go soon after the 50th anniversary. "I had expected to leave either this year or next year and it will be half way between the two," she says.

At times the abuse hurled at her must have hurt. Did she go home at night and cry into her pillow?

She shakes her head and confirms she is not the crying sort. "It would be silly to say it was a nice experience. The thing



that hit me though, was that the majority of people had two things to say simultaneously. The first was that 'she has done a tremendous job. She is good at her job. Bath is a great university.' But then they were saying she earns too much. It struck me that a lot of what they said was being said in the general, rather than about me personally. It was a general attack on vice-chancellors who earned a lot. The fact that I was, at that point, the highest paid vice-chancellor made me an obvious target."

She says Oxford, Birmingham and Southampton V-Cs were also 'slammed'. "I recognise this is a sign of the times. It is really important to recognise what is happening and not to ignore it. I think universities as a whole, and Bath in particular, are going to have to take account of this public concern. And I think that will change the way that vice-chancellors operate and the role that they have. We are in line for a huge change for higher education.

"From a personal point of view it has without question been hard, really difficult, but I don't feel there has been an attack on my integrity, or my talent, or the contribution I have made to Bath. I would have been hurt if that happened."

The job is a complex one, part CEO, part defender of all things academic, part jack of all trades. She has learned more about asbestos replacement in sixties buildings, more about planning and infrastructure and more about heat exchange systems "than is possibly

“
None of the things
that have been
achieved over the
last 17 years can
be laid at one
person's door –
and particularly
not mine
”

good for a psychologist," she says laughing. There are of course many experts who work closely with her including a "brilliant" head of estates but she says in order to make decisions as to what the financial priorities are, the problems need to be understood. "And that means understanding the detail.

"I think our Government needs to think about what it wants. If you want a great university like this which contributes massively to corporate success for the UK then you need a certain sort of approach, certain structures in place, a certain sort of regulatory framework.

Having clarity about what we want from our universities is tremendously important.

"We want universities that are confidently partnering with business as well as with the public sector to solve problems and to deliver the sort of skills in graduates that businesses need.

"And we should not forget that we are existing in a global higher education network. If we don't think about how we allow our universities to compete in that global environment we are going to be seriously in trouble. Other countries are not investing in fantastic universities because they are altruistic. We need to understand as a country how we can afford to do the things we want to do.

"We need to continue to attract international students.

"I am not talking about international students coming here, paying their fees and subsidising the system. I am talking about international students as future leaders in their own countries. Higher education has been building strong international mutual understanding and respect for generations and we could lose that."

I ask what she is most proud of. She pauses for a long time and then says, "I think what I am most pleased about is that when I came here I thought it was a brilliant university that lacked self-confidence. Over the last few years the University has started to recognise its own excellence. It knows in itself that it is a global player. It is confident in all areas – the quality of research, the standard of its teaching, the ability of its students to get jobs – and in its alumni."

What message would she give her successor? "Bath is a great university with a great community and you need to work hard to make sure you do the best for it."

She does not know yet where she will live in the future, but Bath, she says, will always be her spiritual home.

Throughout the good times and bad times she says she has had enormous support from her family and her partner. "I have been very lucky, very, very lucky."

As I leave the vast campus, I reflect that setting aside the politics of the public purse, I think the University of Bath has been very lucky to have had Dame Glynis as its Vice-Chancellor.



OPENING UP ABOUT AUTISM

THERE'S GROWING UNDERSTANDING ABOUT AUTISM ACROSS SOCIETY, BUT WHAT DOES IT MEAN TO BE A STUDENT AND AUTISTIC?

Words **Andrew Dunne**

Life to date has been far from straightforward for first-year Computer Science undergraduate, Hannah Khan. Having been diagnosed with Asperger syndrome (a form of autism) while at secondary school, her GCSE and A-Level years were dogged by personal and emotional challenges – the type that could have derailed many.

“I was about 13 or 14 and a doctor just said to me ‘I think you have Asperger’s – look it up’. That really was the extent of it. It was a complete nightmare and sent me into denial about what I had and what I could do,” she recalls when we meet on campus.

In those early days, appropriate support was hard to come by. Long waits for specialist referrals and what it meant in her school made daily life a grind and took its toll on her mental health. Asperger’s for Hannah manifests as hypersensitivity. “It’s noise, touch and sometimes smells,” she explains. “If there are loads of sudden noises I get overwhelmingly anxious and sometimes I’ll have panic attacks or meltdowns.”

As she approached final A-Level exams, Hannah’s grandfather – who was playing an integral part in her life – became ill. Having previously relied on him for a lift to college, she now had to tackle noisy, public transport by herself. “I ended up missing a lot,” she admits.

Despite her natural abilities, the experiences of A-Levels left her at a real cross-roads as to what to do next. “I had always wanted to go to university, but then I started to consider that there might be better options for me. My concerns were mainly to do with the autism support, because I have quite complex needs.”

The first in her family to consider higher education as an option, her decisions were not just influenced by courses, teaching quality and other criteria common to many would-be undergraduates. It was also a case of weighing up which university could best help her navigate work, studies and social life, and where she could feel most at home.

“My mum spent a huge amount of time looking at which universities were supportive of Asperger’s, as well as which ones had accommodation that would suit me,” Hannah explains. “She really went into great detail trying to find somewhere that would work.”

A taste of university life

That detailed searching paid off, and Hannah came across an advert for our Autism Summer School. The three-day initiative – run through our Centre for Applied Autism Research – gives autistic students the chance to experience all aspects of university life, helping to reduce anxiety and build confidence. It is offered for free thanks, in no small part, to generous support from our alumni.

Encouraged by her mother, Hannah applied to take part. “A couple of days before I was having doubts about going and very nearly didn’t at all. But I did and I found it a lot better than I expected.” Some of the social challenges she predicted were there, but alongside people who were anxious about socialising were

“It’s me
being
open and
accepting
that this
is ok”



those who threw themselves into the experience. “We just had a lot of fun, we played some Dungeons and Dragons, and we made great friends.”

Still unclear about university – the summer school is open to all students with autism, irrespective of where they want to study – the experience gave her a flavour of academic life and a sense of what proper support might look like. As a consequence, she began to consider Bath as a logical next step.

“The summer school team explained what support there was here and that gave me a lot of confidence. Bath seemed open. To me, a place that is able to supply you with that much information must know a lot themselves, and this really encouraged me.”

Fast-forward two years and Hannah stands as a symbol for triumph over adversity. As one of 50 new Gold Scholars, each benefitting from dedicated financial but also social and mentoring support, she’s making

new friends and taking advantage of the range of opportunities the University has to offer.

“I’ve coped better than I imagined I would. I expected I’d come to university and have a meltdown every week... it’s now more like every other week! But generally it’s just more manageable than I expected it to be.” Most crucially, she now wants to draw on her experiences – the good and the bad – to positively influence others who are facing similar challenges as a result of autism.

This is who I am

According to Professor Mark Brosnan, Director of the Centre for Applied Autism Research, one of the key challenges for students to overcome is opening up about their autism diagnosis. He explains how many people are reluctant to do so, often influenced by past negative experiences. But, by drawing on his recent research, Mark suggests that being open about the diagnosis is not just key to getting the right support, it has benefits socially too.

“We investigated how the decision to disclose might play out for autistic students. Significantly, we found that generally students had a much more positive response towards their peers who might display unusual behaviours when they knew about an autism diagnosis.”

Hannah agrees: “To me, disclosing my Asperger’s and saying ‘this is who I am’ and ‘I need support,’ it’s me being open and accepting that this is ok. It puts me on more of a level playing field with everyone else. If you don’t disclose your diagnosis then they can’t help. And without the support that I’ve had as a result of telling people about my condition, I really don’t think I’d still be here.”

700,000

The number of people on the autism spectrum in the UK.

1 in 3

autistic adults experience severe mental difficulties due to a lack of support.

16%

of autistic adults in the UK are in full-time paid employment.

Before starting her first year, Hannah worked with our professional service teams to ensure things were in place to support her when she got here and that the right people knew about her condition, which has helped reduce anxiety. “If I leave a lecture halfway through it’s not because I don’t feel like it, it’s because I feel anxious and need to go,” she says. “My lecturers are aware and aren’t going to chase me up.”

Transitioning to the world of work

The kind of care put in place to help talented young people like Hannah into higher education is now being replicated at the other end, with a newly-introduced Bath Employment Spring School for Autism.

It’s a shocking fact that fewer than one in six autistic adults are employed full time and those that are too often end up in jobs significantly below their true abilities. Mark Brosnan thinks we’re all missing out by not better integrating autistic graduates into the right sort of jobs. “We know that many autistic graduates have a unique set of highly-attuned skills, such as being trustworthy, reliable and with great attention to detail, that can make them incredibly valuable to a whole range of organisations. But all too often, barriers are put in the way that prevent them from applying for the right kind of jobs, being successful at interview or transitioning into work.”

By teaming up with JP Morgan – whose Autism at Work programme in the US is already making important inroads in tackling these challenges – Mark and colleague Dr Chris Ashwin are trying to address this here in the UK. “This collaboration is about valuing the incredible contributions autistic people can make and finding new ways to help them secure meaningful work,” he explains.



Hannah on campus

JP Morgan’s programme is designed to improve employment opportunities for autistic graduates by developing their job hunting and interview skills. The company also aims to capture strong talent by improving their own interview techniques, deploying new training for managers and non-ASD colleagues.

For Hannah that transition to work may still be some way off, but she is confident that when the time comes she will have options. “I’m between two paths at the moment. I know a lot of companies working in computer science are really good with autism and part of me would like to focus on that, and cybersecurity. But on the other side, I’d really like to go into music and perform for a living.”

Somewhat unexpectedly, she announces that she’s also a talented musician and in between her studies finds time to front a metal band. The noise, it transpires, doesn’t affect her if she’s the one making it.

At the time of writing, ‘Synthetic Mutations’ have just played Battle of the Bands in Bath.

Whether hers is a career in cybersecurity or performing in a metal band, Hannah’s story serves as a timely reminder that being autistic need not limit your opportunities.

A golden opportunity

Our Gold Scholarship Programme, funded thanks to support from our alumni and friends, gives students from disadvantaged backgrounds the chance to build social and cultural capital. In addition to a grant worth £5,000 per year of study, it features a personal development programme including support with placements and internships, alumni mentoring and a commitment to undertake 50 hours of volunteering per year.



PORTRAIT OF AN ENGINEER

**IN THE UK'S
#YEAROFENGINEERING,
WE MEET SOME OF
BATH'S BRIGHTEST
ENGINEERS AND FIND
OUT WHAT DRIVES
THEIR AMBITIONS.**

Words **Rachel Skerry**

In December, a University of Bath graduate will be orbiting the Earth. NASA astronaut Major Anne McClain (MPhil Aerospace Engineering 2004) has been selected for a six-month mission on the International Space Station. Major McClain will join a long line of women who have been into space but, while there are some stellar role models out there, inspiring more girls to become the next engineering stars remains challenging.

Ask a class of 10-year-olds in the UK to draw an engineer and most of their pictures will look the same: a man, in overalls and a hard hat. It's a stereotype that starts early and sticks stubbornly. Despite women now outnumbering men at UK universities, men are five times more likely to gain an engineering and technology degree than women. I wanted to go behind the statistics, to find out what makes some of our female engineering students tick.

"It's still a surprise when I meet a woman in tech," admits Integrated Mechanical & Electrical Engineering (IMEE) student Lizzy MacLennan. Lizzy was elected 2017-18 project manager for Team Bath Racing Electric (TBRe for short), the UK's number one electric racing team in the Formula Student competition two years running.

"I've always wanted to be an engineer – I just didn't know what it was called," she says. "When I was young I said I wanted to be an 'inventor'. I played a lot with K'NEX – plastic pieces that you can use to make triangles with really nice angles, so you can



Left:
Hannah Crewe

Right:
Leen Jabban

Previous page:
Lizzy MacLennan

“I’ve always
wanted to be an
engineer – I just
didn’t know what
it was called”

build structures easily. We had so much of it that my sister and I used to build six-foot-high rollercoasters for our toys.”

Lizzy’s love of “nice angles” is infectious. This enthusiasm, together with her organisational prowess, is a powerful combination which spurs on her TBRe teammates – most of whom are men – in designing and building their racing car. “The project is very expensive, but we have hit the electric vehicle market at a perfect point so the funding is definitely increasing, especially as we’ve become more successful,” she says. TBRe attracts donations from alumni and corporate partners worldwide: “The boys hate me because I’m really thrifty, but I really try to be a good steward of the money that’s given to us!”

Lizzy isn’t the only woman heading up an otherwise all-male tech project on campus. Former University Air Squadron member and Mechanical Engineering student, Hannah Crewe, swapped two wings for

two wheels as project manager for Bath Zero, our electric motorbike racing team, which also receives alumni support.

Like Lizzy, Hannah was also clear what she wanted to be from a young age. “I see engineering as problem solving,” she says, “so doing a degree in it will teach you how to work through it and get to the solution.” Having parents who are engineers (and Bath graduates) helped steer Hannah towards a Mechanical Engineering degree at Bath, and it’s the hands-on aspects of the course, and the opportunities the University provides for extracurricular projects like Bath Zero, which really appeal to her: “What’s great about Bath is how it gears up its students for going into industry.” And, thanks to Hannah’s Air Squadron connections, the team do their testing at the airfield in nearby Colerne. “My strength is getting things done,” she says, “but I don’t think that’s necessarily a woman thing.”

Despite the prevailing argument that your gender confers certain strengths or traits, there’s no evidence for any biological difference between males and females that could explain why so few girls go on to study engineering and technology beyond school. So, is engineering’s pipeline problem psychological rather than physiological?

Dr Nathalia Gjersoe, a developmental psychologist at the University, thinks that part of the answer lies in the idea of ‘self-efficacy’, or the belief that one can succeed in certain areas. “People tend to approach domains where they feel they are competent and avoid those in which they do not,” she explains. “Studies have shown that girls, on average, had much lower self-efficacy ratings in STEM subjects, even though they outperformed boys across school subjects. Despite the evidence of their own marks, some girls still seem to succumb to the stereotype that they aren’t as capable in these subjects.”

Thankfully this wasn’t an issue for fourth year IMEE student Leen Jabban, who grew up in Abu Dhabi. However, her parents weren’t so keen at first – “because they said engineering is so dominated by men,” she explains. “But once they saw how motivated I was, they were really supportive of me.”

Leen isn’t fazed by being in the minority on her course. “When I started at Bath, what I noticed more was the cultural differences of being in a new country and trying to keep up with people’s accents!” she laughs. It’s clear that Leen has an understated, but strong, sense of self-efficacy. “Sometimes when I’m doing group work and everyone else in my group is a man, they might not listen to me. But I know I’m as good as they are, and I contribute as much as they do.”

Alongside her demanding course, Leen has joined the kick-boxing society, is learning Chinese and is co-chair of Bath’s Women in Engineering Society (WES), which aims to inspire more women to choose engineering as a career. WES Bath takes inspiration from the national WES which, until last year,

“I know I’m as good as
they are and I contribute
as much as they do”

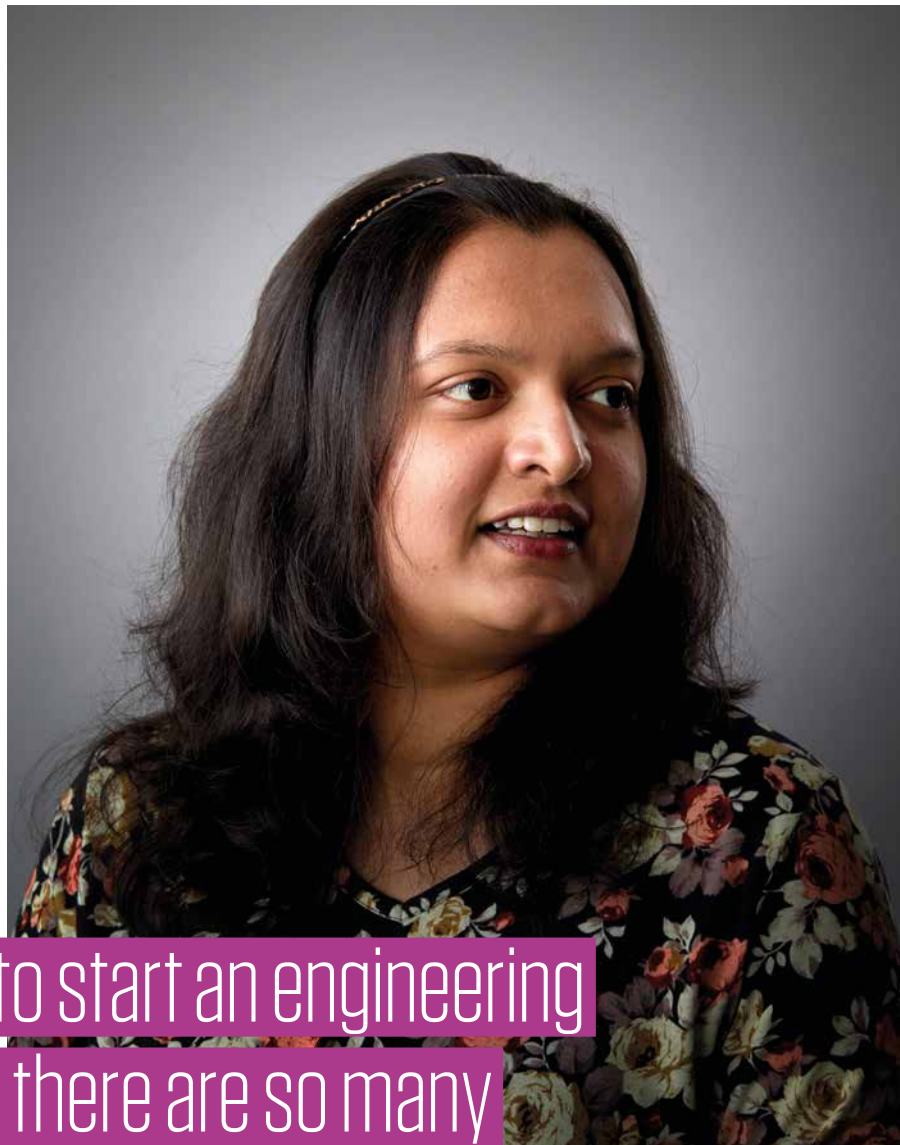
was chaired by alumna Dawn Bonfield (BSc Materials Science 1987), whose work to promote diversity in this field earned her an MBE in 2016.

Another active member of Bath WES is Parimala Shivaprasad, who moved from Bangalore to do a PhD in Chemical Engineering. “I was really surprised that there was such a thing as WES in the UK,” she recalls. “At home, you are really encouraged to do engineering, irrespective of gender. At my school, girls outperformed boys in science and there was not that misconception that girls can’t do science or engineering.” However, post-education, it’s a different story. “In India, employers aren’t keen on recruiting women in shift work or plant-based roles, but in the UK it’s the other way round,” she says. “Companies really encourage women to apply, whatever kind of job it is.”



Going out to schools with WES Bath, Parimala has noticed a difference between the younger and older girls' enthusiasm for STEM. "In younger cohorts, we see a lot more girls wanting to pursue science or maths, but when we do the outreach for 14-year-olds, if they've already made up their minds, they don't want anything to do with it." Again, this could be explained by psychology. The idea of 'social belongingness' – where teenagers feel they fit better in classes that will be taken by more of their own gender – may also help explain why fewer girls choose to study subjects like physics post-compulsory education, which is required to get a place on a university engineering course.

Not everyone, male or female, is cut out to be an engineer – it's a challenging subject that, at Bath at least, requires top grades to get into. Perhaps the real test is spotting those many more girls like Lizzy who enjoy making models out of K'NEX, or Leen who grew up watching MIT videos on YouTube – and empower them to explore their potential.



"It's a great time to start an engineering degree, because there are so many opportunities"

her dream career designing prosthetics or working for an engineering giant such as Rolls Royce, where she did her placement. Parimala hopes to continue her teaching and research, while also developing an ingenious entrepreneurial sideline: recycling floral waste from religious places, ceremonies and festivals by extracting the essential oils and producing organic manure – an idea which recently won her the Bath Business Plan competition and a £15,000 Innovation Award.

And as for Major McClain? She's preparing for her mission to go about as far as you can in the world – by leaving it. Her achievements are a shining example of where talent, dedication and hard work can get you, and back here in Bath we wish her the best of luck.

Our female engineers may be outnumbered, but they're certainly undaunted.

Above:
Parimala Shivaprasad

THANK YOU

Thanks to all our alumni and friends who support the Bath Business Plan competition, Innovation Awards, the Women in Engineering Society and the amazing Team Bath automotive projects, which are helping our students to succeed. If you would like to find out more about how you can play your part, please get in touch at alumni@bath.ac.uk

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SNAP BACK IN TIME

Highlights from this year's reunions

1980: University of Bath netballers take on Warwick in the Founders' Hall. We continue to produce world-class players: this year, the England Roses clinched a stunning last-second victory against favourites Australia in the Commonwealth Games and alumna Kadeen Corbin (Sports Performance 2012) played in the final. Kadeen received a scholarship from the Trendell family to study at Bath, and still plays for Team Bath in the Vitality Netball Superleague, alongside fellow England star Eboni Beckford-Chambers.

Share your memories with us by emailing alumni@bath.ac.uk





MEET THE TEACHER

Stephen Kelly entered his last year at Bath as newly appointed lecturer Ian Colville began teaching Organisational Control and Design to final year students – all during a time of upheaval for British business. They met up again at the University of Bath in London, Pall Mall.

After graduating in 1984 with a degree in Business Administration, Stephen embarked on a hugely successful career. He's led a Nasdaq-listed company, served as COO for UK Government and become CEO of Sage, one of the UK's largest technology companies. In 2016, the University awarded Stephen an honorary degree, and his former lecturer Ian delivered his oration.

Ian is Professor of Organisation and Management Studies in the School of Management. As well as designing and delivering every change management course on the Bath MBA programme since it began, he is also Director of the influential Change Management Forum which connects alumni, consultants and academics on practical issues facing organisations today.

SK At 18 you haven't got a clue about anything. I was one of the first generation in my family to go to university, I had no benchmark. I went to a state school and I thought, wow, free education for three years. Why not?

Bath was a young, vibrant community – the antithesis of the dreaming spires of Oxford. A high degree of non-British students and a lot of state school kids. I made really great friends – we still get together to play football against the Eurostuds and the Architects.

It didn't really feel like a university. It was much more applied, more practical and connected with industry, at a time when the new world of business administration was just starting off.

“We had fun.
You challenged us.”

Stephen

IC There weren't that many courses around, which actually gave you a greater sense of freedom. I wasn't told how to teach. I still don't hold any teaching qualifications whatsoever, but it gave me the freedom to explore how to go about it. Professor Iain Mangham, who was Head of the School at the time, said to me, “You're taking a final-year compulsory course”. I said, “What's it about?” and he replied, “Whatever you want, but it'd better be bloody good!”

Iain had previously worked for Eli Lilly, the US pharmaceutical company, and knew the importance of the link between theory and practice.

SK Coming into the 1980s, much of the country's industrial strength was dying and the relationship between the state and the individual was changing fundamentally. Meanwhile the Far East was creating a whole different competitive proposition. So there was massive disruption and massive change, but there was no plan. The question was how do you get people in an organisation aligned to the strategy and the execution and the customers? At the time there was very little practical material about how to bring organisations to life and inspire their people and, once you've done that, how to make them change.

IC Whatever the future would be, it would be high-end thinking and people who would make the difference. What is the country going to do for a living? Who's going to lead this? How are you going to manage it? That was the inspiration for the course, and it still is.

SK Because the University was finding its feet in terms of business and management, the course wasn't narrow. The modularity of it meant that you could say, actually I want to go into sociology, I love psychology, or accounting; I like law a bit more. You had great choice, and that really allowed you to be expansive and test drive.

And the connection with industry you got through the placement system was second to none.

IC That connection to business is still a strong suit of the School of Management.

SK If you don't know what you're going to do, the best thing you can do is try it. The only way you find out about a job is to do a job.

IC Teaching final year students was great, because what they came back with after their placement year was experience. So you'd take a book on operations research and they'd say, "But it doesn't work like that".

SK We never took ourselves too seriously. We always had respect for the lecturer, but in this case the lecturer had respect for us. Based on my university experience, there were very few brilliant teachers who could host a feisty discussion where it was invigorating, enjoyable and you learned loads. Some lectures you're not too keen on going, it's 9.15 in the morning, but we had fun. You challenged us.

IC I had to enjoy it as well! I set up debates – *In Search of Excellence* by Peters and Waterman for example. One side had to argue that it was shallow nonsense, the other that it was insightful and ahead of its time. So you have got to do two things. You have to read it, and you have to be able to argue a point of view even if you don't agree with it.

"If management doesn't have a practical outlet, what is the point?"

Ian

SK You were rare, in that there was probably only one or two lecturers at my time at Bath who brought their subject to life with real practicality – streetfighter experience – that made it really compelling. My learning was probably tenfold that from one of the researchers who gave a lecture and left without giving anyone eye contact, just spent his time looking at his shoes!

IC If management doesn't have a practical outlet, what is the point? It's not philosophy. If you can get people's attention and then their intention, you can get them to change. It sounds simple but it is really an art, of which you're one of the best exponents of in business, anywhere in the world.

We need to make a difference in our teaching and in practice. That's why



alumni like you, who come back to share their experiences with other alumni, are so great. That's probably the thing I'm proudest of, creating a virtuous circle, so you just don't go away, you come back, and bring together the theory and the practice.

SK I can't believe what has happened to me in my career. Beyond my wildest dreams. I feel very humble. Great education, great opportunity and I made the most of it. But, from my cohort I would have definitely backed others before I backed myself.

IC In your honorary degree oration, I said that you were an average student but you were different. What I didn't say was that when you got a good 2:1 degree, another student complained that you must have cheated because you were always the last one to leave the bar! But what she didn't know was that you need very little sleep. You would leave the bar and go to work. You were working really hard and nobody knew it. And look where it got you!

SK The job of Chief Executive is the best job in the world, because you get to do a bit of everything. You give people space to be empowered, to lead and manage, but the CEO is accountable, so you need to know every piece of the puzzle and how it is going to play out.

IC You've got to enact in your environment. One: it's your responsibility to do something with your career. Two: you have to be positive. Three: you have to be talented. And I think you picked that up during the years you worked in America, and brought it back and added to it.

SK The US is much more open to in-the-moment, constructive feedback, which can be negative. But they bounce back. They don't withdraw and get defensive; they ask, what do I need to do to change? Great leaders are never satisfied, they're constantly challenging themselves.

IC The parallels with great sport teams are there. Sir Alex Ferguson has written a book on leadership. How do you create a great culture among a winning team and how do you keep it going?

SK You come up with a plan that's coherent, holistic and serves everybody's interests. And that's the job of leadership, to step in and create that plan. People love to follow great leaders, then they become leaders themselves.

IC One of the things you said at the Change Management Forum is you need a golden thread. You need to reduce ambiguity for people, you've got to be able to talk to all of them in a language they understand, to move them forward, to give them confidence.

SK Britain needs amazing universities to teach the next generation of business leaders. We want people to come from Stanford and Harvard to Bath, because we're the exemplar. It's the culture, the excitement of what you're trying to create, and the cachet of saying, "I went to Bath and I'm really proud of that."

If you would like to get back in touch with your former lecturer, tutor or supervisor, email alumni@bath.ac.uk – start your message with 'Meet the teacher'.

OUR HIGHEST HONOUR

Every year, the University recognises a handful of people whose achievements set them apart. Here's what some of this year's honorary graduates had to say about what their award means to them, their connection with Bath and their advice for fellow new alumni.

"I have such fond memories of my time and experiences here, and clearly it was the start of my journey to two Olympic Games. For the students graduating today, there are so many opportunities open to them, but the most important thing is they have a firm foundation to build whatever future they like."

Heather Stanning



This year's honorary graduates in full:

Comedian and musician **Bill Bailey**; Chartered Engineer and leading computer science professional **Professor Amanda Chessell CBE FREng**; Willis Research Network CEO and Fellow of the Royal Geographical Society **Rowan Douglas**; CEO of Rolls-Royce Holdings **Warren East CBE FRS FREng FIET FBCS**; world-class orthopaedic-neuro veterinary surgeon and Supervet star



"I hope I can inspire those around me that, despite the challenges one faces while trying to fulfil one's ambitions, it really is possible to make a difference when you work very hard and believe whole-heartedly in your dream."

Professor Noel Fitzpatrick

Professor Noel Fitzpatrick; former researcher in the Department of Pharmacy & Pharmacology and Trevena CEO **Dr Maxine Gowen**; alumnus and CEO of Schroders plc **Peter Harrison**; former Tottenham Hotspur and England footballer and Diabetes UK campaigner **Gary Mabbutt MBE**; alumna and Professor of Plant Sciences **Jane Langdale FRS CBE**; distinguished process

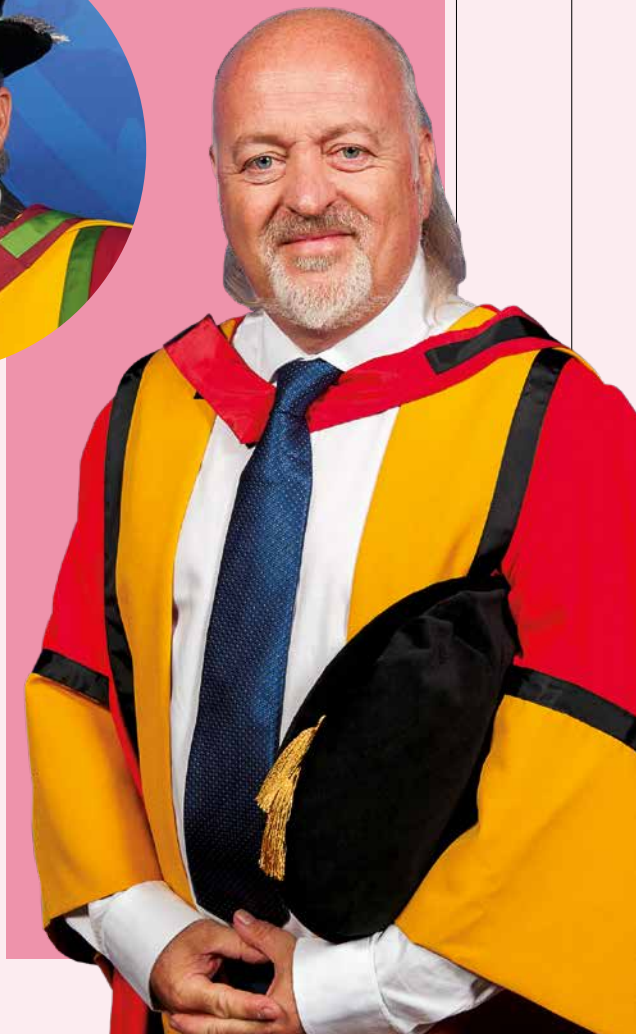


engineer **Professor Stephen Moore**; alumna and former CEO for the Science Council **Belinda Phipps**; alumna, Olympic rowing gold medalist and Royal Artillery officer **Heather Stanning OBE**; former bobsledder and the Lawn Tennis Association's head of performance **Simon Timson**; Nonlinear Analysis mathematician and former head of the School of Mathematics **Professor John Toland**.



"This award has a huge emotional weight, as Bath is a city which is always in my heart. It's where I grew up, went to school, lived my formative years, played in my first band and performed my first ever comedy gig."

Bill Bailey



CHANGING ROOMS



Eastwood, 1976



Eastwood, 1976

"Oh how glamorous the idea of a Terrazzo seat sounds! Not quite the same as the bum-numbingly cold concrete shelf we actually had! My lovely Granny crocheted me a huge blanket to cover it, so it was quite a handy seat from which to watch the buses arrive and then race down from level 9 to the bus stop to avoid waiting outside in the cold."
Sarah Lee, (née Leyland)
 (BA MLES 2002)



Wessex House, 1977
 Courtesy of Caroline Boisset

Your memories of campus digs through the decades.



Westwood



Westwood under construction

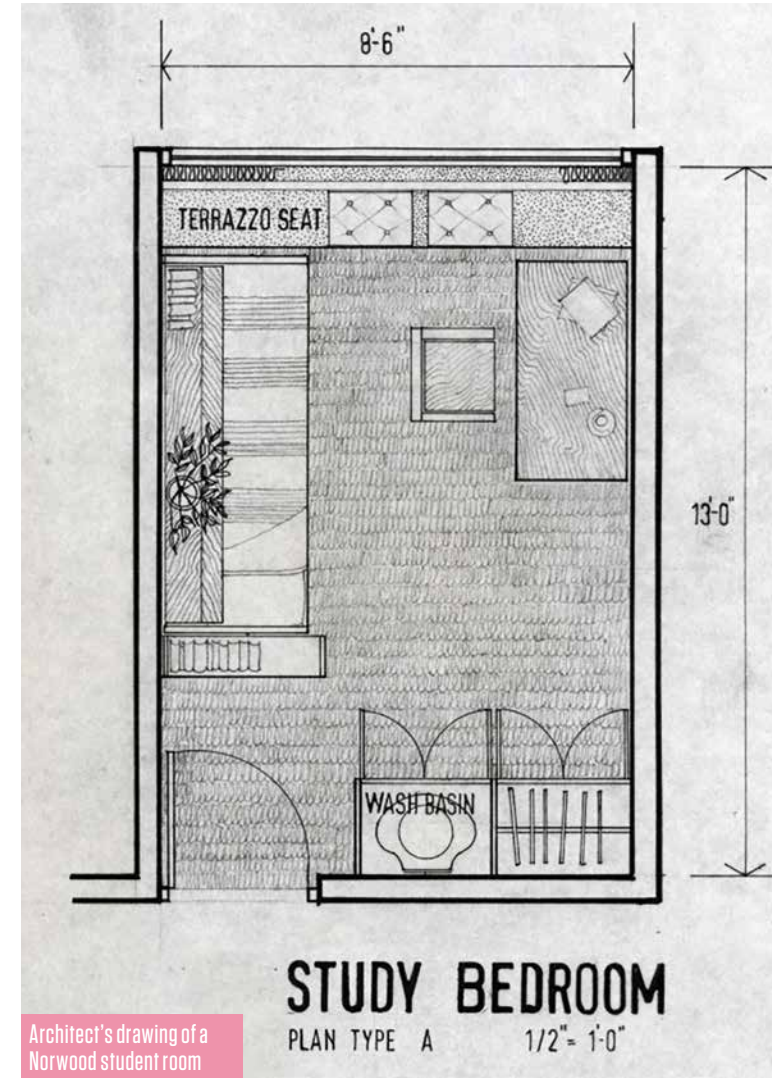
"I met my husband Jon in Westwood. He was on the third floor and I was on the fourth. I also remember a water fight – people throwing milk cartons filled with water and then getting a thorough telling-off from the cleaners!"
Karen Wickham
 (BSc Mathematics & Computing 1983)



Norwood House, 1995



Norwood House, 1980s



"A whole host of SU band posters from Norwood foyer and a life size cardboard cut-out of Rowan Atkinson (liberated during Freshers' Week)!"
Allan Mansfield
 (BEng Materials Science & Engineering 2000)



1986

Who was on your posters?
 "1982-83 – I remember it well. Lenin and a load of revolutionary posters I picked up in Moscow! A friend nearly fell backwards out of the window!"
Debbie Kennedy (née Gray)
 (BSc Statistics 1985)
 "My friend had a poster of Debbie Harry. I think I had Pink Floyd."
Dyson Wilkes
 (BSc Physics 1983)
 "Patsy Kensit!"
Rich Wilkinson
 (BEng Aeronautical Engineering 1994)
 "Olivia Newton John"
Phil Alldridge
 (BSc Engineering with French 1979)



1995

"I was in Mendip in 1991. I had a Playboy duvet set and Pink Floyd and Knight Rider posters on my wall. In those days it was an all-male level with shared bedrooms, shared kitchen and communal showers."
Matthew Holmes
 (BSc Applied Physics 1995)

BATH'S BEST STUDENT DIGS

Laura Pettitt (BSc Psychology 2020)

The night before accommodation applications opened I realised I'd completely forgotten which ones I had liked the look of. A hurried message to a friend at Bath told me that "Norwood was full of nice people," and combined with one of the lowest rents on campus, it got my vote. However, she forgot to mention something somewhat crucial: the location.

Norwood House is directly above the Students' Union. And no, for the 77th time this week, that does not mean we get free Score and Klass tickets. That's just floor 5.

On the day I moved in URB was blasting out some Top 40 tunes on the Parade directly below, and a tiny part of me started to panic I'd never get a good night's sleep again. I was suddenly grateful that my mum's ridiculous over-packing had involved several pairs of ear plugs. But if Norwood taught me anything, it's that sometimes you just don't realise how much you need a Wednesday 2am sing-along to *Mr Brightside* or *Seven Nation Army* from your bed.

And what Norwood lacked in silence, it made up for in views. The number of times I'd go onto Snapchat to find the entire floor had posted that evening's sunset on their story. It was something to brag about every time someone from another accommodation block came over for pre-drinks. Bet you can't people-watch the Parade from Westwood, can you? Norwood is, quite literally, the centre of campus. I doubt I'll ever again live in a place where I can go to Starbucks without going outside. Or Little Fresh. Or, heaven forbid, even the library.



Laura (above) with her Norwood flatmates

I truly think that those of us in Norwood had the best start to Uni imaginable. We were like all the other flats around campus in some ways; attempting to host a classic Christmas dinner, but unlike every other flats' apparent ability to coordinate a roast for more than 20 people, we realised our humble oven and stove were not worthy and ordered takeaways. Honestly, once you've pulled a cracker and put a paper hat on, you don't notice the difference, even when our Christmas decorations were taken down due to being considered a fire hazard.

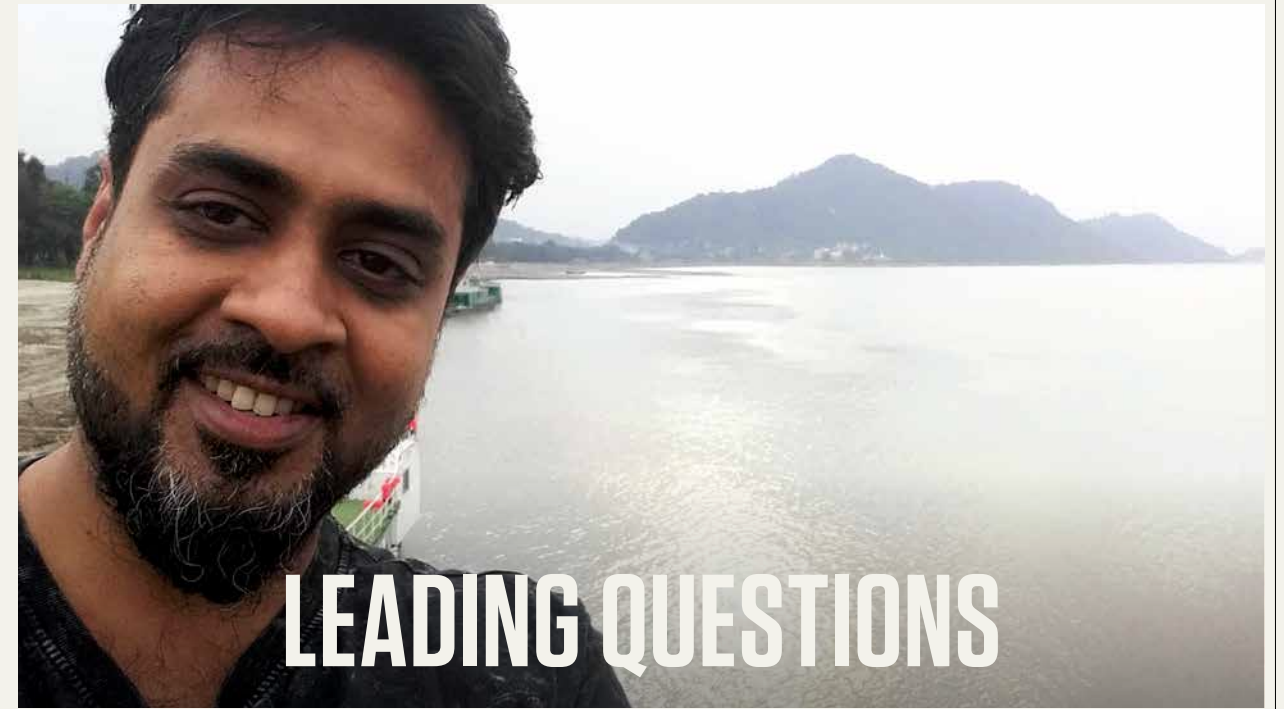
Our first year was so unique, too; I doubt many other freshers recall the night one of their flatmates made a slip-and-slide in the corridor after one too many at the SU cocktail night, or had to take a flatmate to A&E after she attempted to do 'the worm' at pre-drinks and left a bit of her chin on the floor. But we didn't just drink; so many of our nights were spent in the kitchen having long chats until 2 or 3am, going for walks around campus when a flatmate felt stressed, and even once playing hide-and-seek in the library in our pyjamas (the people working on deadlines gave us the strangest looks).

Yes, the rooms did feel a little like prison cells, and the corridor wasn't quite the dream backdrop for aesthetic pre-night out photos, but who hangs out in the corridor anyway? No mood lighting? Fortunately, the Circuit dryers were so

unreliable that my flatmate would hang his wet bedding over the kitchen lights, which I imagine provided a similar effect. And now I'm able to sleep through bass levels high enough to make the whole room vibrate, so in some ways, the rent I paid to live in Norwood was almost an investment.

It's funny to think that on the first day at Uni, when I demanded my parents drove me home because I was so scared to speak to the strangers in the rooms around me, that these people would go on to become some of my best friends. We may not all live together now, but we still see each other all the time, and I can confirm that the girl who told me that "Norwood was full of nice people" was right. It really was.

Do you agree? Tell us at alumni@bath.ac.uk



LEADING QUESTIONS

Mufaddal Topiwalla (BEng Electrical & Electronic Engineering 1999) is the Managing Director for a consulting firm, Techstep, and COO for software development company Soda in Mind. He's also one of our international volunteers based in Singapore.

What do you remember from your time at University?

Being the international students' representative for the International Office helped me make friends from all over the world. This gave me access to many parties too!

What's the best thing about Singapore?

Definitely the food! Every cuisine in Singapore is considered local as the country is a melting pot.

Why did you become a volunteer for the alumni network?

I had been working all over the world. Upon returning to Singapore, I thought to myself, what's a good way to reconnect with my old friends and do something helpful at the same time?

How did it happen?

I had attended an event in Singapore hosted by the University and suggested starting a network in Singapore. There was no one available to be a contact point so I offered my help.

What does being a volunteer involve?

So far it has been more of a social network where we try to meet every few months. We had a visiting academic – Dr Despina Moschou – whom I helped

connect with various institutes in Singapore to help with research grants. Eventually, I would like us to build a network where members can help each other improve their lives, careers and business opportunities.

What is the best thing to come out of your time as a volunteer?

The ability to reconnect with my old friends and make new ones.

What's your advice for anyone thinking about joining an alumni network?

Don't worry about not having time to contribute. Any suggestions or activities that you can help with is always welcome. If not, just come join in the fun.

Who do you most admire?

Batman.

Is there anyone you'd like to thank?

The old lady next door for finally keeping the cats home. Seriously, my kids for giving me purpose in life and parents for always being there, no matter what.

How do you relax?

Cycle over to the beach.

What's your favourite place in the world?

Persepolis.

And in Bath?

Where I can see Pulteney Bridge and the river.

What's your favourite joke?

Life! I used to take it seriously but realise that it can be a very entertaining joke.

More than
20,000
alumni live outside the UK.

We hold events worldwide so local alumni and placement students can get to know one another. These events are organised by international volunteers like Mufaddal, with support from the Alumni Relations team. If you'd like more information about our networks, or if you're interested in arranging an event in your area, please email alumni@bath.ac.uk



Average Joe's



April saw past and current members of the University Hockey club go head to head in a campus tournament. Their exertions were rewarded with dinner, then drinks in The Cork.

SNAP BACK IN TIME

It was truly a snap back in time moment when Seán Murray (BA European Studies 1976) arranged for every member of the 1974 UAU football championship-winning team to return to campus in May. It was first time that all 11 members had met up for 44 years. The team had a great day donning the new University kit, and catching up with Tom Hudson, the University's first Director of Sport, over lunch.



Seán Murray (front row, far right) and teammates in the 1974 UAU-winning football team, with coach, the late Ivor Powell.

BATH REUNITED!

If you'd like to organise a reunion with your class group, sports team or student society, please get in touch at alumni@bath.ac.uk

Back to Bear Flat

Four friends returned to their old flatshare at 47 Devonshire Buildings in Bear Flat last November. Graham Armstrong, Ivan Couchman, Colin Walker and Stephen Ward all played for the first XV Rugby team in the 1970s.

Over lunch at The Bear, the four shared stories of their time at Bath, from walking back from campus drinks to their digs in a straight line, clambering over whatever hedge, wall or other obstacle that happened to be in their path, to arranging an impromptu makeover of Colin's treasured Ford Anglia, with terrible consequences!

Graham and Ivan also joined us for our annual Rugby at the Rec event in October. After befriending members of the first XV – including 2017-18 Club Chair, Doug Crawford (BSc Psychology 2018) – Graham even ended the evening with a brief appearance in Score. Well played!



Left to right: Stephen Ward (BEng Engineering 1975), Graham Armstrong (BSc Materials Science 1975), Ivan Couchman (BSc Economics & Administration 1975), Colin Walker (BSc Economics & Administration 1973)

"We had a brilliant weekend!"
 Caroline Millest (née Mutton)
 (BPharm Pharmacy 1979)



"We were amazed how much had changed since 1978 (several wondered initially if this was a parallel universe – vaguely familiar, but not the same). However, once up on the Parade, we realised that it was indeed the university that we remembered so fondly, just bigger, more capable, more impressive and in many ways more mature."
 Mike Taylor
 (BSc Economics 1978)





LIFE AFTER UNIVERSITY A BIT OF A CHALLENGE?

“ I enjoy helping people make decisions about their career. I've spoken with some really interesting students who have given me a different perspective on things. ”

Heather Naylor
BSc Mathematics 2011

Our alumni have the answers.

Join Bath Connection to get advice from fellow Bath grads on CVs, networking and taking the next step in your career.

And, if you have advice to offer, you can sign up as one of our Alumni Experts too.

Visit www.bath.ac.uk/alumni and select **Bath Connection**.



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