

BA2

THE MAGAZINE FOR ALUMNI AND FRIENDS OF THE UNIVERSITY OF BATH
ISSUE 28

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How Bath research is battling loneliness.

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CLIMATE CONUNDRUMS & HOW TO SOLVE THEM



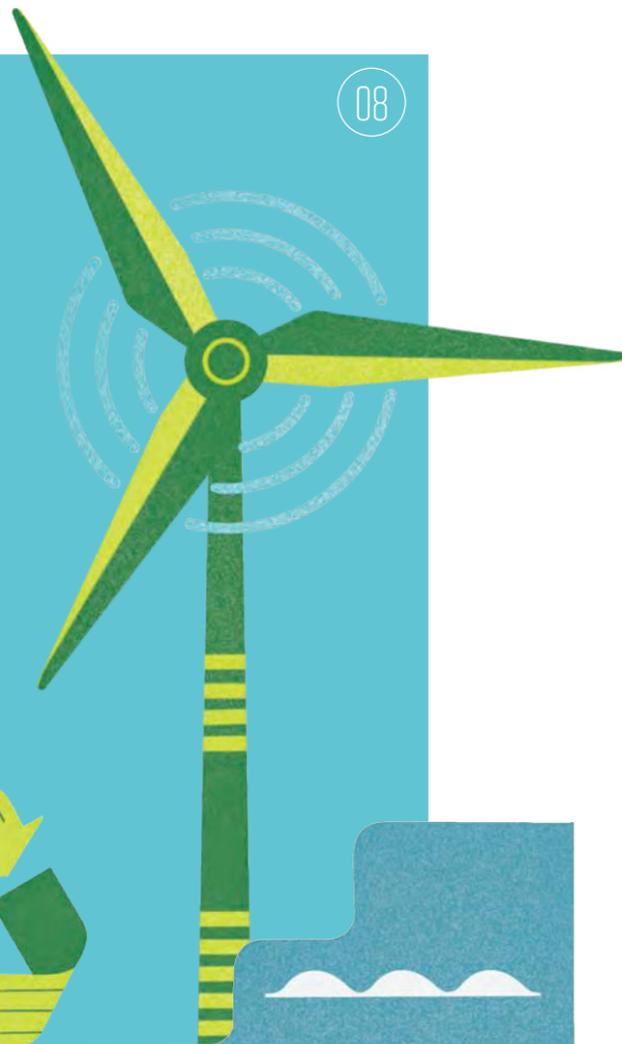
UNIVERSITY OF
BATH

While we all continue to face enormous challenges resulting from the Covid-19 pandemic, climate change remains a looming threat and continues to jeopardise our future. It's an issue that Bath has been committed to addressing for many years and in this **BA2** you'll discover just some of the ways our researchers are taking action, from lab-grown burgers to building better batteries for electric vehicles.

Their work is global in its reach and scale but combatting climate change starts at home, on campus. That's why this year the University declared a climate emergency, committing to take action through research and educating the next generation. In addition, we will continue to cut our emissions, with the target of becoming a carbon neutral campus by 2040.



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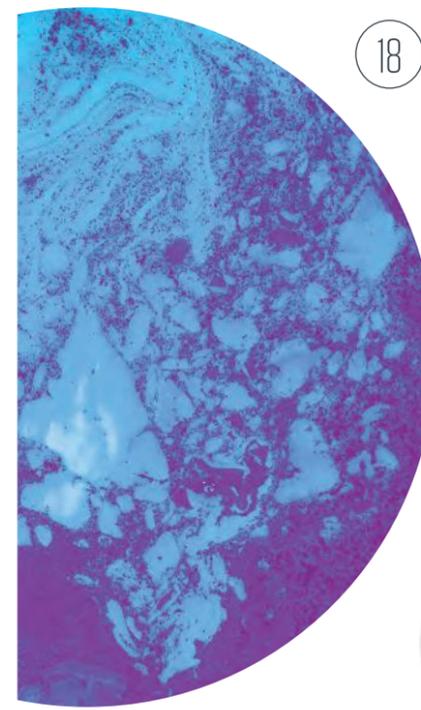
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Highlights from the University of Bath

Welcome

Welcome to the latest edition of BA2

I am delighted to be able to share some good news stories with you as we enter the final quarter of 2020. As I said when I returned to Bath last year, the University is fortunate to have great strengths in terms of its people, its professionalism and its pioneering spirit. During the last six months, a time of unprecedented change, these strengths have come to the fore and I have been so impressed by the way in which our community has responded to the challenges it has faced.

Whilst Covid-19 has been uppermost in our minds, we have also continued to tackle other global issues, such as climate change, loneliness and mental health, and diversity and inequality. In spite of the physical distance between us in recent months, our community has never felt more connected. The sense of common

purpose in responding to the pandemic has been overwhelming and has extended to our partnerships within the city as, together, we have sought to address the future sustainability of our local region.

Restarting our operations on campus has been a huge task and I am so grateful to our academic and professional services staff for their utmost professionalism in making this possible. The health, safety and welfare of our staff and students remains our key priority, but we are also keen to ensure that the University continues to offer a high-quality learning and teaching environment, as well as an excellent overall experience for our students. We are doing all that we can to offer innovative delivery methods and to provide opportunities for social interaction, recognising that university life is about more than just studying hard.

Thank you again to those of you who have supported individual students, enabling them to continue with their studies by providing the means to overcome financial hardship or enabling access to online teaching and materials. I hope you will enjoy reading about the first cohort of Gold Scholars who graduated this summer. The Gold Scholarship Programme is now more important than ever as we strive to offer fair access to a world-class education and attract the brightest minds to Bath, no matter what a student's circumstances may be. Your support in this area has been invaluable.

As we emerge from the shadow of recent events, I hope we will be able to harness some of the lessons we have learned. The University has seen many changes since its inception and we now have a considerably larger and more diverse student body, with alumni living and working in 171 countries over 6 continents. Lockdown has taught us how easily we can stay in touch, using technology to engage, communicate and solve problems, but it has also shown us the importance of compassion, tolerance and inclusivity. The death of George Floyd has opened up vital conversations about equality and we will use this momentum to think carefully about the contribution we can make, building on the work being done by the recently launched Black Student/Alumni Network.

As ever, we welcome feedback from you. Please do get in touch if there are any matters on which you feel able to offer your advice or guidance. We are always pleased to hear from you.

With warm good wishes,
Professor Ian White DL FREng,
Vice-Chancellor & President



£81,340

The amount donated by local philanthropists, trusts and businesses in support of our PPE production.



Community



Professor Richie Gill shows one of the face shields made at Bath

Bath comes together in PPE effort

Over 100,000 items of personal protective equipment (PPE) have been produced free of charge for local healthcare workers thanks to a project led by the Faculty of Engineering & Design. This includes around 90,000 face shields, as well as eye goggles, gowns and ear savers to prevent chafing from the elastic on masks.

At the start of the Covid-19 outbreak, staff developed a range of designs that could be produced with materials that were readily available – including foam and acetate – which were presented to the Royal United Hospitals Bath NHS Foundation Trust (RUH).

“It’s been really great to bring the University together,” says Dr Alexander Lunt from our Department of Mechanical Engineering. “We’ve got people working from outreach, finance, admin, security, catering. Not everyone is on the shop floor producing items, but without

them we couldn’t do it.” Support from the wider community has also been key, from financial aid to donated materials and help with delivering equipment.

Almost all of the items have been produced by teams of volunteers working at safely spaced intervals in labs in 4 East, spread across three shifts per day, and the gowns have been sewn by volunteers at Bath Spa University. The PPE is certified by the national standards body BSI, and is sealed in bags until it is guaranteed to be free of any traces of coronavirus.

“The team have protected our NHS staff from tens of thousands of high-risk patient encounters and allowed our workforce to stay healthy and resilient whilst caring for patients with Covid-19,” says Andrew Georgiou, Lead Consultant for Critical Care at the RUH. “For this, we cannot thank the University, their staff, volunteers and donors enough.”

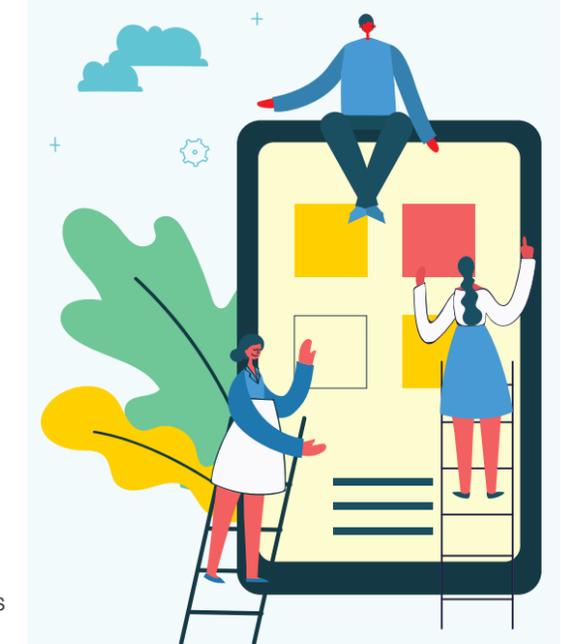
Students

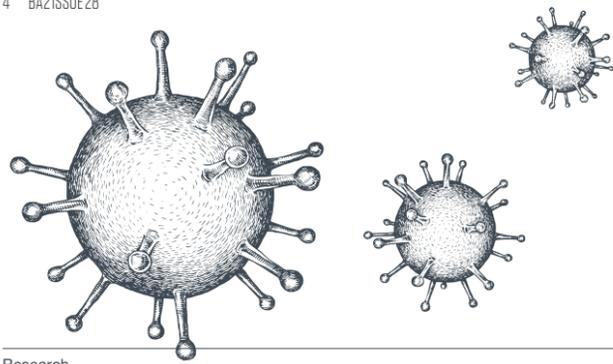
Campus in lockdown

Like the rest of the UK, Claverton Down went into lockdown on 23 March 2020. For the 300 students who remained in campus accommodation, however, there was a wide variety of support on offer – from free takeaway meals at the Lime Tree cafe through to online care from our Wellbeing Service. The Students’ Union also set up a ‘Corona Community’ Facebook group, with fitness classes, bake-alongs and even virtual nights out.

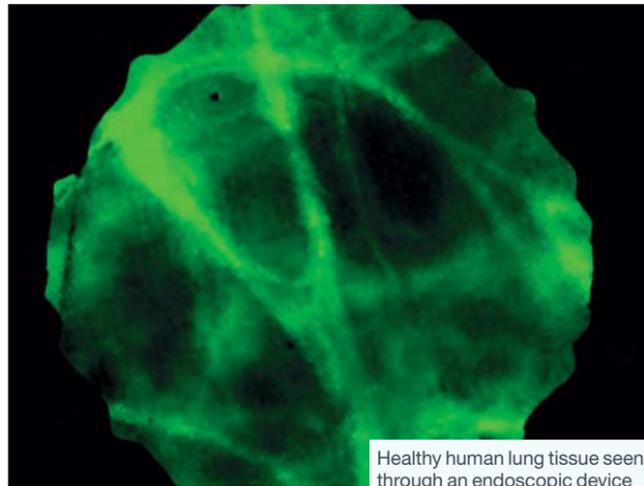
Writing for student magazine *Bath Time*, first-year Politics & International Relations student and Alumni Gold Scholar, Yasmin Western, said:

“Nothing has made me feel more like I ‘Belong at Bath’ than the response that both the University and the SU have made on the pastoral side and in the community during this outbreak.”





Research



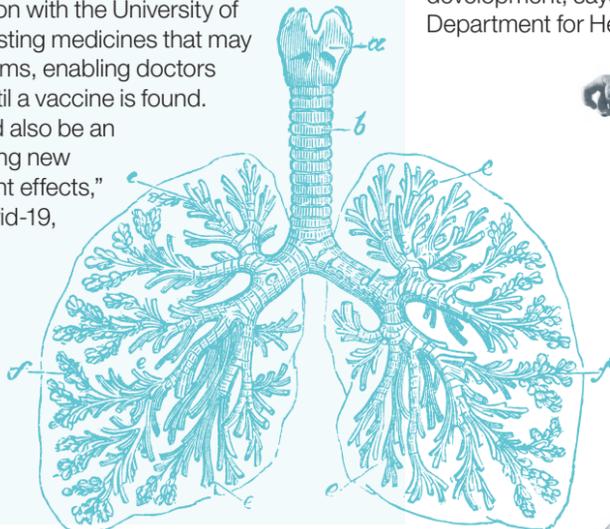
Healthy human lung tissue seen through an endoscopic device

Testing Covid-19 treatments

Scientists have developed new devices to help test the effectiveness of future treatments for Covid-19. The researchers from our Centre for Photonics and Photonic Materials have built several hundred optical fibre-based endoscopic devices, which can be used to take a look inside the lungs to check for damage, as well as collect fluid samples and deliver drugs.

“We’ve been making fibres to address clinical needs for six years,” says Dr Jim Stone from our Department of Physics. “It’s a matter of adapting the work we’ve been doing on bacterial infections to focus on viruses instead.”

The devices will be used as part of STOPCOVID – a project in collaboration with the University of Edinburgh – to test existing medicines that may help to reduce symptoms, enabling doctors to treat the disease until a vaccine is found. “This technology could also be an interesting way of testing new drugs and their different effects,” he adds. “Beyond Covid-19, this could be a neat new tool to deepen our understanding of disease in general.”



Research

Buzzwords

What our researchers are talking about

Emotional masala

Academics carrying out intense, emotionally draining fieldwork are prone to experiencing a complex mixture of feelings that can’t be easily articulated, according to research from our School of Management.

Biological catalysts

Scientists at the Centre for Sustainable and Circular Technologies are developing greener ways of making chemical products such as paint, cosmetics and medicines. Their secret ingredient? Enzymes taken from fungi.

Biobanding

Grouping young athletes into teams based on their size and strength could level the playing field when it comes to training and development, says our Department for Health.

Hangovers

The next-day effects of hitting the bottle aren’t limited to a headache. A study from our Department of Psychology has found your abilities to plan, set goals and make decisions also take a nosedive.

Artificial neurons

Scientists from our Department of Physics have created the world’s first artificial neurons on semiconductor chips. These could be used to treat chronic diseases such as Alzheimer’s in the future.



Top 10

Bath was ranked in the top ten UK universities in the Complete University Guide 2021. We also ranked as the number one place to study Marketing.



Below: Malcolm Arnold (left) receiving the award from Sergey Bubka, 1988 Olympic pole vault champion and now Chair of the IOC Athletes’ Entourage Commission

Students

Graduating with Gold

This summer, our first cohort of Gold Scholars completed their studies. During their time here, the six scholars who received their degrees in July racked up 600 hours of volunteering between them, as well as making the most of personal development workshops and networking opportunities.

“Being a Gold Scholar has been an extremely rewarding experience and has aided me in developing myself professionally,” says 2020 Mathematics graduate Will Manley. “I am incredibly grateful to everyone who contributes towards the Gold Scholarship Programme. I will be continuing my



Our first 50 Gold Scholars in 2017

studies with an MSc in Mathematical Sciences at the University of Oxford next year.”

Thanks to the support of our alumni and friends, the Programme offers financial assistance as well as training and mentoring opportunities for up to 50 bright young people per year from disadvantaged backgrounds.

Research

In a nutshell

What are those weird bobbly things?

They’re fungi – *Aspergillus nidulans*, to be more precise. Each of the little balls contains lots of tiny spores, which enable the fungi to spread.

Looks like something I once scrubbed off the shower grouting.

Let’s hope not. As well as not being particularly pleasant to look at, fungi are a pest to farmers when they infect crops, contaminate our food with harmful toxins, and can also cause diseases in humans and animals. Thankfully, scientists in our Department of Biology & Biochemistry are in the process of developing a way to minimise their spread: by starving them.

Starving it to death – makes sense, no?

Let me finish. The nifty thing that Dr Neil Brown and his team have found is that hungry fungi don’t want to have sex, thus curbing their reproductive rate. Sexual reproduction is important for fungi as it helps them to mix their DNA, promoting diversity and enabling them to adapt to new surroundings.

Bet ‘fungi sex’ is a phrase you never thought you’d be typing.

Er, not really. But *Aspergillus nidulans* only likes to get frisky in a dark room and after a good meal – so if you can ruin the romantic mood, so to speak, you’re on the right track.

How do you get in the way of their date night?

Our researchers have found a group of receptors that only exist in fungi. Manipulating these receptors can trick the fungi into thinking that they’re starving, which can inhibit their sexual reproduction and thus slow down their evolution.

Sport

Team Bath coach receives Lifetime Achievement Award

Legendary track and field coach Malcolm Arnold OBE was honoured with the International Olympic Committee Coaches Lifetime Achievement Award in January 2020. Malcolm worked with Team Bath from 1998 to 2016, leading athletes to 41 major championship medals – including Olympic gold for honorary graduate Jason Gardner MBE in the 4x100m relay in 2004.



That’s a piece of evil genius.

True. The researchers also hope it could give us longer before fungi become resistant to our current antifungal chemicals, which take a long time to develop.

So you’re saying it could give us mushroom for manoeuvre in future?

With puns like that, you must be a fun guy at parties.

What time is dinner?





Alumni

First female pharmacist elected Fellow of the Royal Society

Alumna Professor Molly Stevens has become the first-ever female pharmacist to be elected a Fellow of the Royal Society, recognising her outstanding contributions to scientific understanding.

Since graduating with a degree in Pharmacy from Bath in 1995, Molly has worked at Massachusetts Institute of Technology in the world-renowned laboratory of Professor Robert Langer, a pioneering biomedical scientist. Now she is Professor of Biomedical Materials and Regenerative Medicine at Imperial College London, developing a test for Covid-19. We awarded her an honorary degree in 2019 based on her international reputation and for being a role model for young people.

She says:

“All my research stems from a strong team-based approach and I am delighted at this recognition.”



Students

Over £45k raised to support students

Many of our Bath community faced immediate hardship as a result of the coronavirus pandemic, whether due to the loss of part-time work or a placement, or not being able to afford travel home or equipment to study remotely.

We launched a crowdfunding appeal for the Student Hardship Fund in March 2020 and together we raised an incredible £45,838 in just three weeks, thanks to the generosity of alumni and friends.

The appeal also received support from the Alumni Fund and a match-funding grant from the University of Bath Foundation. The donations directly helped those who needed it the most.

One beneficiary says: “My mother was sent on unpaid leave and as she provides me with my monthly budget, my financial situation got dire immediately. My sincere thanks go out to everyone who donated, without which I really don’t know what I’d have done.”

Research



Credit: CERN

The Vice-Chancellor (centre) during his visit to CERN

Bath joins CERN physics experiment group

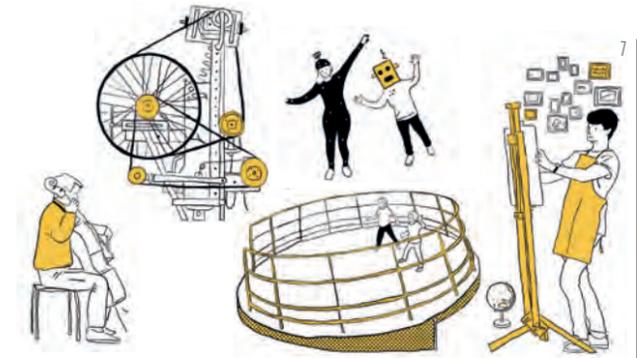
The University has officially partnered with CERN, the world’s largest centre for physics research. The collaboration sees our Faculty of Engineering & Design become a member of the Compact Muon Solenoid (CMS) experiment, which investigates fundamental physics questions. The CMS is one of the key parts of the Large Hadron Collider. Its work hit the headlines in 2012 when it confirmed the existence of the Higgs boson elementary particle.

Vice-Chancellor and President, Professor Ian White DL FREng, led a visit to formally sign the agreement in late 2019. The delegation toured the facility, which is located 100 metres underground, and also met with Bath graduates and placement students employed by CERN. He says: “Working with a world-leading scientific organisation such as CERN will create first-class opportunities for our students and research staff, and reaffirms our place among the UK’s leading engineering institutions.”

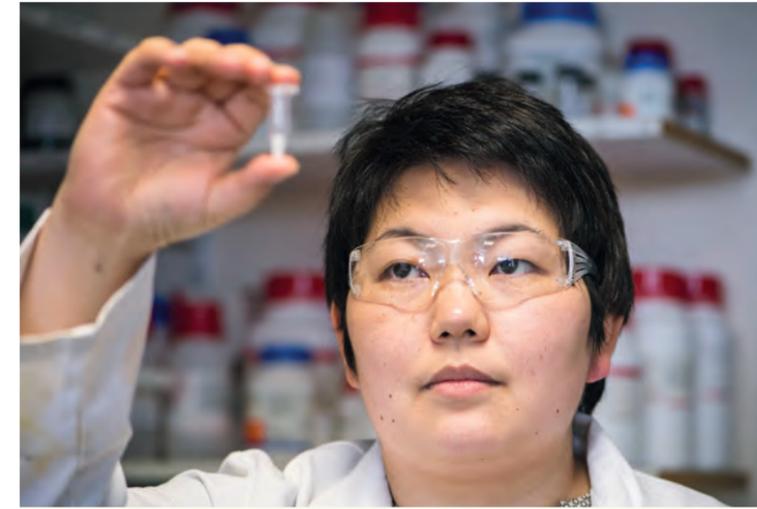
ON PARADE

44,000

The number of visits to The Edge’s Andrew Brownsword Gallery since it opened in 2015.



Research



Keeping vaccines safe

A new system for delivering life-saving vaccines to children in developing countries has taken a vital step forward, thanks to research from our Department of Chemistry. Vaccines are notoriously difficult to transport to remote areas of the world, as they spoil when not refrigerated. However, Dr Asel Sartbaeva and her team developed a technique that keeps vaccines intact up to 100°C by encasing protein molecules in a silica shell. Silica – the main component of sand – is non-toxic, inert and can be removed chemically.

This pioneering technology was seen to work in the lab two years ago – as featured in *BA2* Issue 26. Now it has proven effective in the real world, too. In their latest study, the researchers sent both ensilicated and regular samples of the tetanus vaccine from Bath to Newcastle by post. The University

of Newcastle found that the protected dose was still active, triggering an immune system response in mice, while the unprotected vaccine had been damaged in transit.

So far, the project has focused on tetanus, which is part of the DTP (diphtheria, tetanus and pertussis) vaccine given to young children. The team is now developing a stable vaccine for diphtheria and pertussis. “The aim is to eradicate vaccine-preventable diseases in low-income countries,” she adds.

This research has been supported by alumni and friends, whose generosity created PhD and post-doctoral positions that propelled the project forward. Vital members of the team include Dr Aswin Doekhie, funded by The Annett Trust; Dr Francoise Koumanov, sponsored by alumnus Tim Ford; and Matt Slade, supported by alumnus Roger Whorrod OBE and his wife Sue.

Campus

Five years on The Edge

This year marked the fifth anniversary of The Edge – the creative hub on campus. It was formally opened on 11 May 2015 by our Chancellor, HRH The Earl of Wessex, followed by a special event of music, dance and debate.

On the site where the Arts Barn once stood, The Edge is home to the Andrew Brownsword Gallery and provides a year-round programme of exhibitions, performances, workshops and family events for both our campus community and the general public. It’s also where our Arts Scholars develop their talents, collaborate with like-minded peers and perform at excellence showcases.

The Edge celebrated its birthday in lockdown but continued to provide joy and respite during difficult times with online dance and wellbeing classes. We look forward to the next five years of championing the arts at Bath. Visit www.edgearts.org to find out about upcoming events.



Campus

Transforming teaching

Future generations of pharmacy students will benefit from a new learning and teaching facility, which will enable them to develop leadership skills by managing a simulated pharmacy. This was made possible by a £100,000 gift from the Day Lewis Pharmacy in memory of co-founder and Bath honorary graduate, Dr Kirit Patel MBE.



CLIMATE CONUNDRUMS & HOW TO SOLVE THEM

FROM LAB-GROWN MEAT TO TACKLING ECO-ANXIETY, OUR RESEARCHERS ARE SOLVING SOME OF THE BIGGEST CHALLENGES AROUND CLIMATE CHANGE

Words Emma Davies

The world is getting warmer. Earth's average temperature has gradually increased since the Industrial Revolution, when fossil fuels were burnt on an unprecedented scale. The Intergovernmental Panel on Climate Change, made up of the world's top climate scientists, has drawn the line at 1.5°C to avoid the worst effects – and it already stands at 1°C. We've seen a rise in extreme weather events, including wildfires in Australia, floods in Indonesia and record-breaking temperatures across Europe. Carbon dioxide emissions have increased by 50% since 1990, and grew faster in the 2000s than in any of the three preceding decades. What's more, it's predicted that sea levels could rise by more than 60cm by 2100, putting coastal cities at risk. It's clear that radical changes are needed to the energy we use, the foods we eat, the cars we drive and even the way we think. Here are just five ways our researchers are bringing a greener future within our reach.



One cow produces up to 120kg of methane per year

Methane is 28 times more potent than carbon dioxide when it comes to trapping heat within Earth's atmosphere. With an estimated 1 billion cows on the planet – roughly one for every seven people – that's a lot of greenhouse gas emissions. Your Friday night burger habit may be part of the problem, but we're also going to need an additional 60 million tonnes of protein to feed the world's growing population by 2050. Is going vegan our only option?

Cultured meat could be the answer. "The huge advantage of eating something like cultured meat is that it addresses our global needs and the challenges of both food security and climate change," says Dr Marianne Ellis from our Department of Chemical Engineering.

To produce cultured meat, muscle cells are grown in a laboratory using biopsy samples taken from an animal. These tissue samples are then submerged in a solution of nutrients, including glucose and amino acids, to encourage them to multiply. The texture of the resulting meat is best suited to burgers at present, but scientists hope they'll eventually be able to recreate other items, such as steaks and bacon.

The process involves using cell-friendly materials formed into porous hollow fibres on which to grow the muscle cells and to provide the nutrient solution – much like blood vessels would in the body. This is much cheaper than current methods, which means it could be well suited to industrial production if it can be scaled up successfully. Marianne hopes you could be slapping one of these eco-friendly beef burgers on the barbecue in three to four years' time.

She explains: "This method compared to traditional beef production has much less greenhouse gas emissions, has much less water use, has much less land use and reduced energy use, so it really addresses those key global challenges."

"We can't make people recycle more, but we can make sure that there are pathways for these plastics"
Dr Paul McKeown



79% of plastic ends up in landfill or the environment

Cheap, lightweight and versatile – it's easy to see why plastic is so widely used. However, while many of us are avid recyclers, reusing plastic isn't a simple like-for-like replacement. Most plastic is mechanically recycled, a process that degrades the quality of the material and means that it can only be used a limited number of times.

Dr Paul McKeown from our Department of Chemistry is developing new ways of recycling polylactic acid (PLA), a more sustainable type of plastic made by fermenting starches such as corn. The process involves using metal catalysts to break down the material into its component chemicals, including lactic acid and methyl lactate. This can be done at temperatures as low as 50°C – far lower than those used in other types of recycling, which can reach up to 200°C.



"While PLA is biodegradable under industrial conditions, it doesn't biodegrade with home composting. But we're trying to maintain some of its usefulness," he explains. "We want to break down plastic polymers into their chemical building blocks so they can be used to make plastic again." This breakthrough means plastic could be recycled hundreds of times without losing the quality of the material.

Thanks to its plant-based origins, PLA is more environmentally friendly than many other plastics, but it's also more expensive to produce. "If you can break down PLA into monomers again, the idea is that the overall cost of the plastic will go down," says Paul. "It's a loop, but it's not going all the way back to the start."

At present, PLA is mainly used in food packaging and disposable tableware, but the hope is that lower costs and more efficient recycling processes could lead to an increase in its use. "We can't make people recycle more," he adds, "but what we can do is make sure that there are pathways for these plastics to go down at the end of their life."

45% of children suffer depression after a natural disaster

If you were to close your eyes and think about climate change as a living thing – whether that's animal or plant – what would it be? And if it had a voice, what would it say? If you conjured up some variety of predator, uttering ominous threats, you're far from alone.

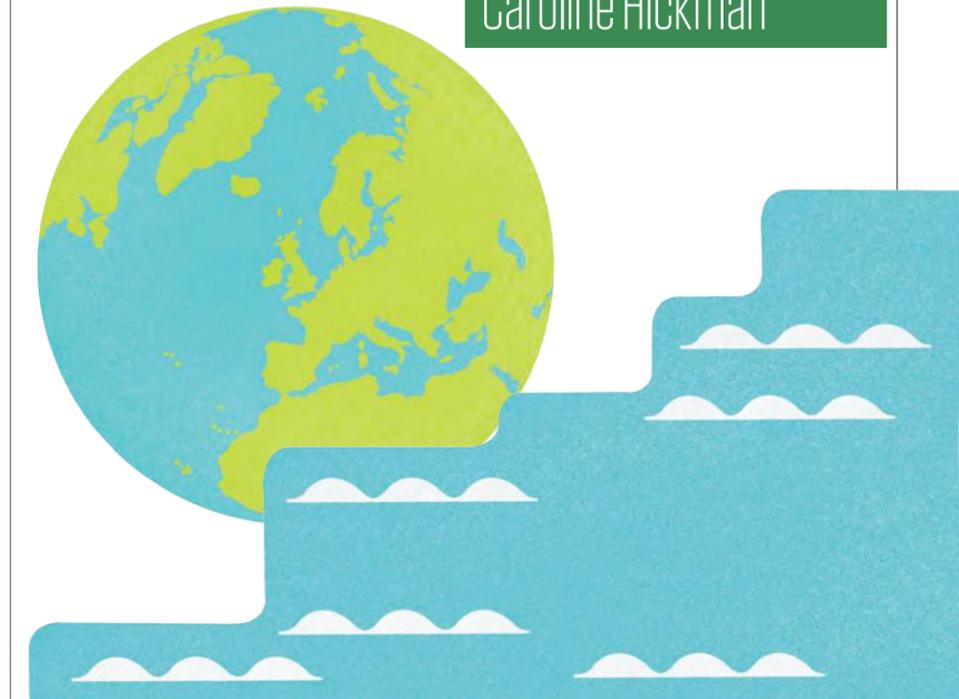
This is one of the key themes of Caroline Hickman's research into the ever-growing phenomenon of 'eco-anxiety'. Caroline, from our Department of Social & Policy Sciences, has been interviewing children and young people in the UK, as well as in communities affected by sea-level rises and natural disasters in the Maldives, Vanuatu and Bangladesh. It's these young voices that she believes should be at the centre of discussions around our impact on the planet.

"When I speak with children in the Maldives, for example, they say things to me like, 'You know the world doesn't care about us'," she explains. "They say things about how climate change is like Thanos in Avengers: Infinity War, with his ideologies to kill off half the world's population so the other half can thrive."

When things are laid out in such stark terms, it's hardly surprising that so many of us are concerned about the future of the planet. Caroline, who has worked as a psychotherapist for 25 years, believes that these feelings can inspire effective action on climate change. The key to this, however, is ensuring that emotions are processed in a healthy manner, rather than jumping straight into anxiety-based activism, which can quickly cause burnout.

"Anxiety is great because it shows you care, and then we can work from that feeling of care towards connecting with people," she says. "This is a global problem and we need global solutions. You move from the anxiety into caring and then what generally happens is there's some sadness and depression, because we're waking up then to the fact that we haven't cared. And the grief of what we've lost. Then acceptance is possible. Then we can take action." Caroline is working with the Climate Psychology Alliance and organisations around the world on raising the issue of eco-anxiety.

"Anxiety is great because it shows you care, and then we can work from that feeling"
Caroline Hickman





Fewer than 10% of EU citizens prefer to cycle

We all know that public transport, walking and biking are far better for the planet than driving, yet in 2018 these only made up just over a third of all journeys made in the UK. So how can we encourage people to make greener choices? According to research by Dr Alina Mia Udall as part of her PhD in the School of Management, we need to tap into one of the many 'identities' people hold.

"If people identify as being an environmentalist, that makes it easier for them to act pro-environmentally, because it's in the forefront of their minds," she explains. "People like to act in line with how they see themselves, because if there's a conflict between how they see themselves and how they behave, that can cause discomfort, which people usually try to avoid."

We each hold multiple identities, and Alina says they can be split into three categories: personal, people and place. These refer to how we see ourselves as individuals, as a group and in relation to places, respectively. So, for example, you could encourage somebody to choose cycling over driving by reinforcing their view of themselves as a cyclist, prompting them to recall how they feel when cycling as a group, or to imagine what it's like riding through beautiful Bath.

Alina's hope is that identity theory could be used by policymakers to nurture community-focused behaviour – particularly at a local level. "We know that if you're talking about policy for a country, that's not so effective," she says. "But if you talk about social identity and policies on a smaller level, such as for a city, you can get people to respond more positively to the ask of a policy."

A soft touch is necessary, as Alina explains that people react negatively when they're prompted too explicitly. So, next time you're weighing up whether you can be bothered to walk to the local shops, stop and consider whether you think of yourself as an environmentalist. Just forget we told you so.

"People like to act in line with how they see themselves"

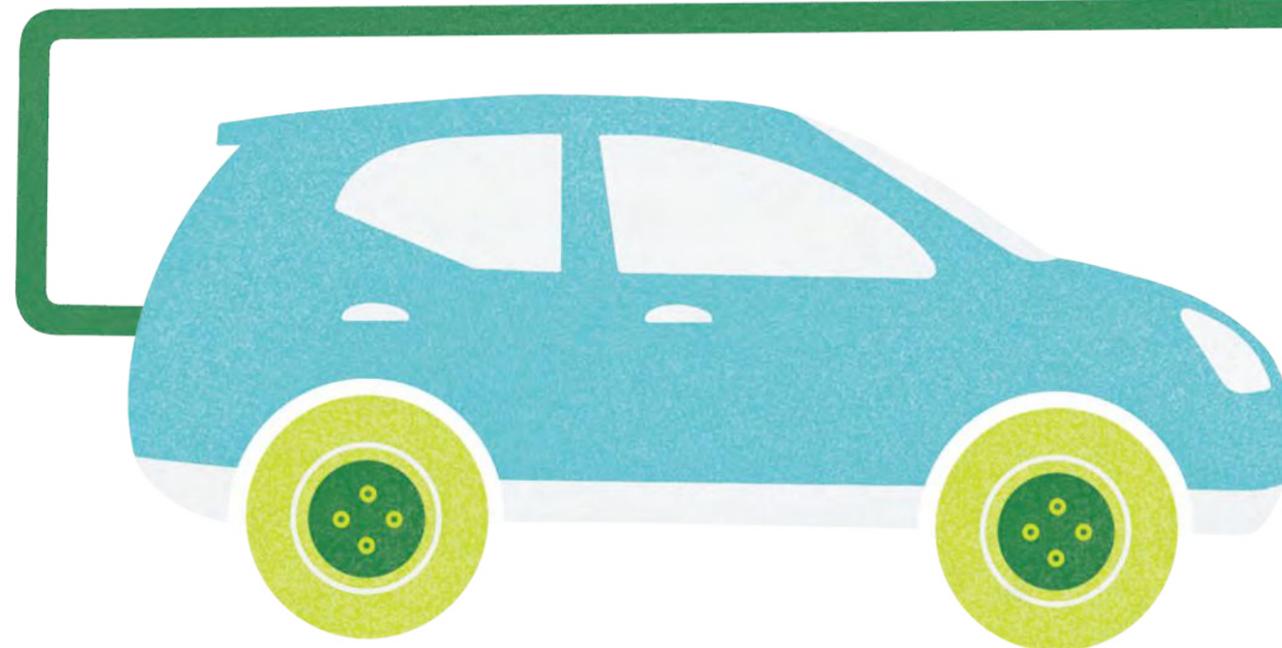
Dr Alina Mia Udall

Cars are responsible for over 60% of EU road transport emissions

To combat air pollution and reduce carbon emissions, the UK government plans to ban the sale of new cars with petrol and diesel engines by 2035. This may sound a long way off, but the road to exclusively electric vehicles will need some pitstops along the way.

The Institute for Advanced Automotive Propulsion Systems' Professor Sam Akehurst is the principal investigator in a partnership between Bath, the University of Oxford, Jaguar Land Rover and Siemens Digital Industries. Its goal? To develop a plug-in hybrid car that can run on liquid fuel at a lower environmental cost than charging from the grid.

"Most of the inefficiencies in an engine lie in the heat rejected via the radiator. That's waste heat that we normally don't do anything with – actually, we struggle to get rid of it. We also have heat that goes down the exhaust pipe and typically not a great deal of it is recovered," he explains. "We're looking at the whole systems integration, effectively trying to minimise energy losses in the propulsion unit so that we can get a global, highly optimised efficiency."



This energy could then be reused as electricity, or to heat the vehicle's cabin on cold days. Sam hopes we could see some of this technology in use in Jaguar Land Rover vehicles as early as 2027.

Longer-term, one of the biggest obstacles electric vehicles face is battery capacity. Rechargeable lithium-ion batteries – the same tech used to power your mobile phone – are key components in an electric car, and increasing their capacity will increase their range, but also drives up cost.

Materials chemistry lies at the heart of battery performance. Professor Saiful Islam from our Department of Chemistry is aiming to find new materials to replace cobalt – which is pricey, environmentally toxic and has ethical concerns – in the positive electrode (cathode) of the lithium-ion battery. "Cathodes are one of the hurdles to storing more energy, basically, to allow the cars to go further," Saiful explains.

As part of a large Faraday Institution project that he leads, the team uses powerful computer modelling to understand and design new cathode materials. "Computer modelling is like a virtual microscope," Saiful says. "We can develop sophisticated atomic-scale models of battery materials and predict promising candidates that can be tested in experimental labs. Our team is working with collaborators to speed up the transition from fundamental research to real devices for electric vehicles that will help to lower carbon emissions and improve air quality."

"We can develop atomic-scale models of battery materials" Professor Saiful Islam



Going green on campus

Here on campus, we've been taking significant steps to reduce our environmental impact. We have developed our Climate Action Framework as a whole-institution response to the challenge of climate change. This includes commitments to impact the agenda through our core mission – developing our research work and learning and teaching activities – alongside an ambitious plan to dramatically reduce our operational carbon emissions by 2030 and to be carbon neutral by 2040.

Through a variety of measures we have already reduced our carbon emissions by 35% since 2005, despite growth in the campus building space of over 40%. At present, 10% of the electricity we use is generated on campus, and the remainder comes from renewable sources. Find out more: bit.ly/BathCAF

THE HUMAN

LONELINESS HAS A HUGE IMPACT ON THE MENTAL HEALTH AND WELLBEING OF THOUSANDS IN OUR SOCIETY WHO ARE CUT OFF FROM THE OUTSIDE WORLD – BUT BATH RESEARCH IS HELPING TO REACH OUT AND RECONNECT US

Words Emma Davies



Above and top right, credit: Joss Barratt

CONNECTION



Since the coronavirus pandemic and subsequent lockdown measures, many of us have been feeling a little more isolated this year. But while solitude can be enjoyable for some, at least in moderation, loneliness is detrimental to both mental and physical health – studies have found that the impact is comparable to smoking 15 cigarettes per day. It's also a widespread issue, with around 9 million adults in the UK alone describing themselves as often or always feeling lonely.

There are still a lot of misconceptions surrounding loneliness. We commonly associate solitude with the elderly – exemplified by the viral John Lewis Christmas advert, Man on the Moon – when older people are by no means the most isolated in society. In fact, 16 to 24-year-olds are most likely to describe

themselves as lonely, explains Professor Julie Barnett from our Department of Psychology. "This may be because they are more willing to admit how they feel," she says. "But we really need to guard against the stereotype that it's only older people that suffer." She also links the experience to times of life transition, highlighting new mothers as another group prone to loneliness.

In recent years, Julie has been part of a research project on loneliness in the digital age. The work focused on groups that were especially isolated, including informal carers – those looking after friends or family. Part of the research involved working with carers to design and develop a device – 'Chatr', which enabled them to connect with a group of others in a similar situation by recording, listening and responding to voice messages.

“IT’S NOT ONLY OLDER PEOPLE THAT SUFFER”



means that they have not been online at all in the past three months – or ever, in many cases.

“We’re specifically interested in radio,” she says of future projects. “You don’t need a licence for radio; you just plug it in and it plays. It’s much less complex than television, and it can enable people to feel that they are part of a community.”

Policy is another vital tool in combating loneliness. Professor Rachel Forrester-Jones from our Centre for the Analysis of Social Policy has carried out research into the difficulties faced by adults with learning disabilities and the older parents acting as their informal carers. Many of the parents reported having to take on increasing responsibility for their dependents’ care, leading to greater isolation. This has been exacerbated on all sides by coronavirus lockdown measures, which removed the opportunity for face-to-face meetings of support groups and social activities. “People have ended up in a situation where they’re living with their older parents and will take on their parents’ everyday rhythms, which are much slower than they would be used to or might want,” explains Rachel.

Other dramatic cuts to social care provision have come as a result of the Coronavirus Act 2020, which allows local councils who declare themselves ‘in extremis’ (facing crisis point in terms of staffing levels and resources) to relax their legal duties under the Care Act 2014.



“The Care Act was very much about helping people to remain independent as long as possible – it’s all to do with enabling their wellbeing,” she says. “The other thing that it did was to remove the postcode lottery whereby the kind of support you received depended upon where you lived. Instead, the Care Act introduced one national eligibility threshold.”

Rachel hopes that governments will look to policy analysis experts regarding the Covid-19 crisis and its aftermath, as they seek new ways of supporting vulnerable members of society. She adds: “I’m encouraging students to do a degree in social policy, because that’s where the need is going to be!” She is also seeking funding to carry out research through Policy Labs to bring together decision-makers, older people and older carers to provide insights into how they have been affected by lockdown and post-lockdown measures.

The idea of research shaping care is also central to the University’s partnership with Guild Living. The organisation is committed to building retirement communities that promote happy, healthy living for older people, and is planning a development in Bath – all underpinned by our academics’ work.

“It’s not a greenfield site in the middle of nowhere, which is where almost all British retirement villages are, but right in the heart of the city,” explains Professor Malcolm Johnson from our Centre for Death & Society. “It will be a centre of

intergenerational activity, with lots of facilities that are not simply for the people who live there.”

Interaction across age groups is a key theme running through Malcolm’s research, which includes work on Channel 4’s successful documentary series *Old People’s Home for 4 Year Olds*. The project brought a group of pre-schoolers into a Bristol retirement community, rejuvenating the residents as they bonded with the children. The results were incredibly positive: the older people scored lower on depression questionnaires and demonstrated increased mobility at the end of the six-week experiment. As a result, Guild Living plans to include a nursery at each of its sites across the UK.

“Intergenerational doesn’t just mean four-year-olds and 80-year-olds, but that happens to be an effective way of demonstrating things,” says Malcolm. “Guild Living is looking at all kinds of ways of drawing people into the villages in a way that’s mutually beneficial. That’s the key word: reciprocity.”

Bath research will be a driving force behind all elements of Guild Living’s project, from the architecture through to the technology used to support healthcare provision. The first study undertaken as part of the project is led by Dr Sam Carr from the University’s Department of Education, examining the emotional experiences of older people living in retirement communities in the UK and Australia.

“Over half of the people we talked to have lost their spouse, who for the last 50 or 60 years had been their most significant close support,” he explains. “Some people don’t have another [partner] after that. The emotional space it leaves in your psyche when you lose your significant other is a unique kind of loneliness.”

Sam found that many older people experience loneliness due to relationships in their life falling away over time: “Your life, your memories, the things you remember from 50, 60, 70 years ago – no one talks about those anymore. No one seems to want to ask you about them. Who you are and what you’ve known in your life are sort of lost in the annals of history, so to speak.”

These findings can be used to inform training programmes for care staff within Guild Living’s communities, empowering



“LOSING YOUR SIGNIFICANT OTHER IS A UNIQUE KIND OF LONELINESS”

them to draw out stories and memories from residents. Sam also hopes that building intergenerational connections can help to prevent older people from feeling that their experiences are irrelevant or have been forgotten about. Collaborations could even be undertaken with local schools to make the most of the experiences the residents have to offer.

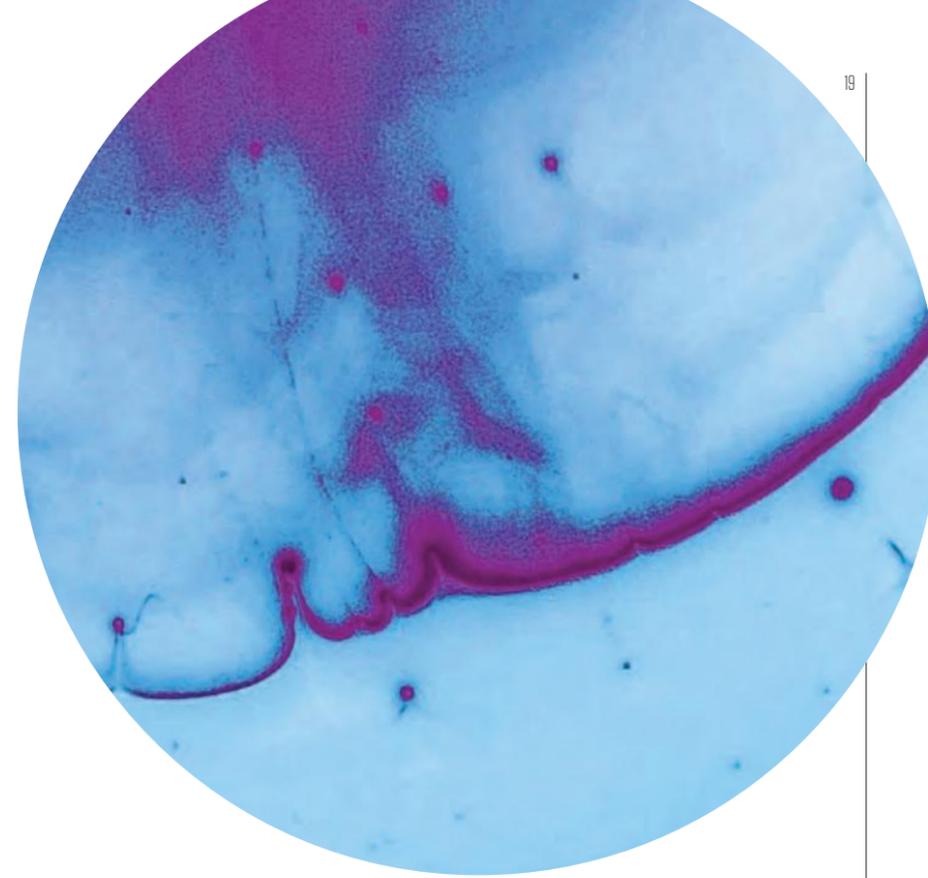
Given the profound impacts of loneliness on those affected by it, and our growing awareness of these, it’s no surprise that coming up with solutions has become a priority. We will all go through transitions at multiple points in our lives – whether it’s moving away from home to study, becoming a parent or sadly facing the loss of our loved ones – and the aim is to ensure that these don’t have a lasting negative effect in terms of our mental and physical health. “Loneliness is a perfectly normal experience,” Julie concludes. “But what we don’t want is for it to become established such that people feel lonely for most of the time.”



Find out more

To learn more about our research in this area, please visit www.bath.ac.uk and search for:

- Centre for the Analysis of Social Policy
- Institute for Policy Research
- Guild Living



COVID-19: UNDER THE MICROSCOPE

INVESTIGATING THE ORIGINS OF THE VIRUS, HOW TO PREDICT THE SPREAD, AND ITS IMPACT ON THE FUTURE

Words **Jodie Tyley**

Since the Covid-19 outbreak began, universities around the world have responded to the crisis, working in collaboration rather than isolation.

At Bath, our engineers worked tirelessly to produce over 100,000 pieces of PPE for medical staff, while our scientists began developing devices that will be able to access tiny airways deep within patients' lungs. Researchers worked with Public Health England to develop Germ Defence – the only digital app proven to reduce the transmission of infections in the home. Meanwhile, our Institute for Policy Research offered its guidance to policymakers, and our School of Management developed models for vaccine supply chains.

On top of balancing research and teaching, our academics also provided numerous media interviews to separate the hard facts from the fake news.

These are just a small number of the fantastic contributions our colleagues and friends have been making in the global effort against the pandemic. However, beyond the immediate threat, there is still a great deal we do not understand about the virus, including its origins and what long-term impact it may have on our world.

Over the next few pages, four experts from across our faculties share their insights into epidemiology, how we can model a pandemic, and how coronavirus has changed society forever.

The science behind the spread

Professor Ed Feil reveals what evolution can teach us about deadly diseases

"I work in the Milner Centre for Evolution, specialising in infectious diseases that spread between animals and humans – so-called zoonotic diseases. Covid-19 is caused by a virus called SARS-CoV2 which likely evolved in bats. Bats are associated with many other viruses, including rabies and Ebola. They have extraordinary immune systems that can repair damage in their DNA and they also live a very long time relative to their body size. This means they go through life picking up all sorts of diseases and end up as a little bag of viruses that don't affect them but can be passed on to other species.

"It's possible that humans have been in contact with bats for a long time. Some societies would have lived in caves so it may be that some diseases evolved during primeval times to spread between bats and humans because we were living in proximity. Making the jump from animals to humans is a difficult thing for a virus to do, because every mammal has specific immune defences. It usually takes a virus a while to adapt to a new host before it can start to transmit, but Covid-19 seemed to have developed its own skeleton key.

"One theory behind this is the pressure on ecosystems around the world. Not only are humans encountering exotic animals more than ever before, different species are also coming into contact with one another. Different bats are hibernating together in caves at a higher

density, and it may be that this has put pressure on viruses to jump from one bat species to another, so they're getting better adapting to new hosts. Once a virus can get from one bat species to another, it's a smaller jump to infect another mammal, such as humans.

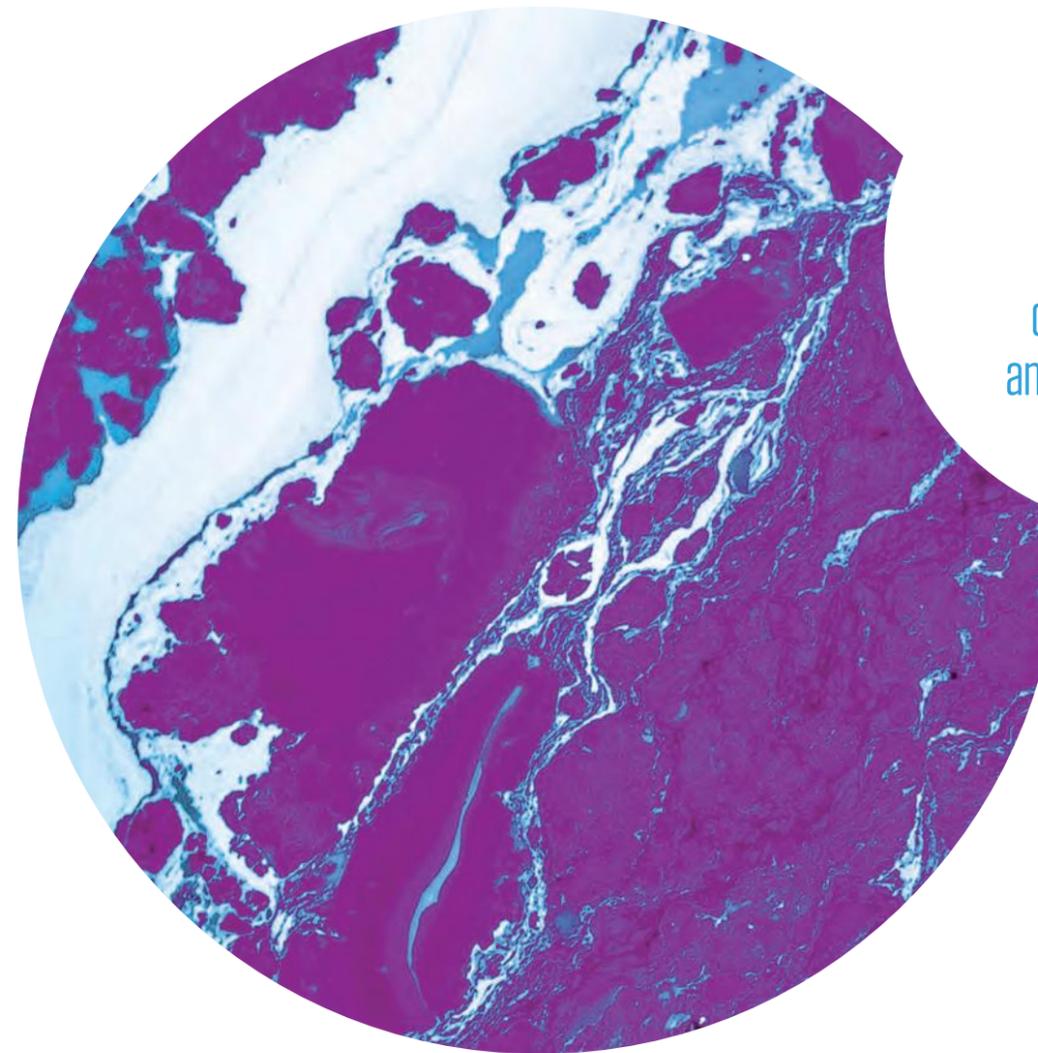
"There are three major forms of disease transmission – one is ingesting dirty water or contaminated food, the second is via an intermediate vector such as a mosquito that can pass on malaria, and the third major route is respiratory, which is what we think we're seeing with this virus. At the time of writing, it's believed that droplets of moisture are released by simply exhaling and virus particles can travel up to two metres before falling to the ground and dying. This is distinct from true airborne diseases such as measles and foot-and-mouth, which form aerosols. These are much smaller particles that can remain suspended in the air for hours and remain active.

"We haven't seen this strain of coronavirus before and neither have our immune systems. It's like when Columbus went to the New World and brought with him measles and TB and whole societies were decimated. Before the outbreak, all eyes were on flu, which would have been simpler in terms of producing a vaccine and therapeutic drugs. The coronavirus family of viruses is completely different so we're starting from scratch.

"I'm working with colleagues in Chemistry who have pioneered what's called 'wastewater epidemiology'. Sewage reveals all sorts of information about the population and we're developing a test that will give us some clue as to the overall burden of the disease on the community where the sewage comes from, which will complement the tests on individuals.

"Looking forward, this pandemic can be seen as part of a pattern of an increasingly frequent 'spillover' of pathogens from animals to humans over recent decades. Hopefully we will emerge from this crisis with a clearer perspective on the public health risks resulting from increasing pressure on natural ecosystems, as well as those from intensive farming."

"Bats end up as a little bag of viruses that can be passed to other species"



R₀

dictates whether an outbreak spreads or dies out

"Whether an outbreak spreads or dies out is largely dictated by the basic reproduction number, or R_0 . If a disease has an R_0 less than 1, then the infection will die out quickly as each infectious person passes on the disease, on average, to less than one other individual. This means the outbreak cannot sustain its own spread. If R_0 is larger than 1 then the outbreak will grow exponentially. R_0 can typically be broken down into the size of the population, the rate of infection, and the rate of recovery or death from the disease. Increasing the first two of these factors increases R_0 , while increasing the recovery rate reduces it, as there is less time to pass the disease to others.

"Then there's the *effective* reproduction number, often just called R . This is the average number of secondary infections caused by an infectious individual at a given point in the outbreak's progression. If, by intervention, the effective reproduction number can be brought below one, then the disease will die out. This is what mathematicians are doing when they model the impact of an intervention. They suggest ways in which that intervention will alter one or more of these factors and by how much. They then build that into their calculation of R and see what impact it has.

"I hope that by explaining the ideas and the concepts clearly we can encourage more people to appreciate that ours is not only a living and breathing subject, but also one of vital importance."

Formulas for survival

Co-director of the Centre for Mathematical Biology, Dr Kit Yates, explains how maths is at the heart of life-and-death interventions

"As a mathematical biologist my job is to take biological systems and to represent them either as a series of equations or in lines of computer code. Once we have these models of the real systems, we can start to ask questions that are either infeasible or unethical to investigate in real life. This way, we can make predictions about how the systems will evolve as time goes on. I've worked on everything, from understanding the way locusts swarm and how to stop them, to predicting the complex development of an embryo, to modelling how deadly diseases spread through a population.

"For some time now, mathematical epidemiologists have been working away in the background to unpick the

mysteries of infectious disease. They have been suggesting preventative measures to halt the spread of HIV, bringing the Ebola crisis to heel, highlighting the risks to which the growing anti-vaccination movement is exposing us and fighting global pandemics. We've been building our expertise in this area for over a century now. Indeed, models are now informing how we respond to Covid-19.

"One of the simplest mathematical models of disease spread splits the population into three categories: everyone who is capable of being infected ('susceptibles'), those who have contracted the disease ('infectives') and those who have recovered and are now immune, or have died ('removed'). This is the S-I-R model and it has been used to understand dengue fever in Latin America, swine fever in the Netherlands and norovirus in Belgium, providing vital lessons for how to prevent diseases spreading.

120%
increase in calls
to Refuge, one of the
UK's largest domestic
abuse charities

Mind the gender gap

Are we really 'all in this together'? Dr Jennifer Thomson from the Department of Politics, Languages and International Studies explores the impact of the pandemic on women

"It's said that the virus doesn't discriminate, but Covid-19 is playing out in a world that is deeply unequal in many ways. Governments and policymakers need to be aware of how the virus could exacerbate these inequalities in the future to minimise that impact.

"Lockdown has seen a huge increase in reports of gender-based violence, with many women having to share homes with abusers. Refuge, one of the UK's largest domestic abuse charities, reported a 120% increase in calls to their helpline in early April. There are also reports that domestic femicide in this country has doubled compared with stats from the last five years, and we've seen these figures replicated across Europe and around the world. Some governments have been responding to this – France made about 20,000 hotel rooms available for victims, for example – but this needs to continue to be a top priority.

"Healthcare is another concern. Emergencies like this obviously make it more difficult for people to access regular health services. This can have a specific impact on women when it comes to areas such as maternal and sexual reproductive healthcare, as governments may be tempted to reallocate resources from these areas to frontline services. This can also be seen as a window of opportunity for some policymakers in areas where reproductive rights are already heavily politicised, and we've seen attempts at restrictions made across a number of settings in the course of the pandemic, from Texas to Poland.

"Also on the subject of healthcare, women make up 70% of the global health workforce. At the time of writing, the UK has seen a disproportionate number of female and BAME workers dying. Then there are the issues around protective equipment. Aside from the nationwide shortages, PPE is designed for male bodies, meaning it's often too large for the female-dominated workforce, making it uncomfortable at best and ineffective at worst.

"Not only has there been a profound impact on people's lives, but also their livelihoods. Unprecedented measures have been taken to stabilise economies, including guaranteeing salaries. However, at a global level around 70% of women's employment is in the informal sector, meaning that women are more likely to miss out on these government-backed schemes. And when recessions result in cuts to government spending, we know that women are more likely to be impacted. An appreciation of the gendered impact of any financial downturn should be key to policymakers.

"But the government briefings are a stark reminder of how unrepresentative the UK is in terms of politics, civil service, scientific and academic fields. In light of this, it's difficult to hope that the response to Covid-19 is going to be inclusive when the decision-making so far has been the reserve of a racial and gendered elite. The pandemic is at risk of exacerbating gender inequalities in our world and we need to be aware of that as we hopefully move beyond it."

Warnings from history

Dr Brad Evans, Professor of Political Violence & Aesthetics, on the pitfalls and power plays of pandemics

"The history of modern government is a history of its relationship with plagues and pandemics. They've resulted in a profound transformation in the organisation of power – even the very idea of the modern state was born in response to the Black Death.

"We've also seen how responses to infectious diseases have compounded some of the worst aspects of society. For instance, blame for the Black Death was very much pinned on Jewish travellers and traders – it was the birth of anti-Semitism in Europe. Fast-forward to today and we're seeing racist sentiment towards Chinese people. We know the politicisation of pandemics can lead to racialised politics and we must be alert to that danger.

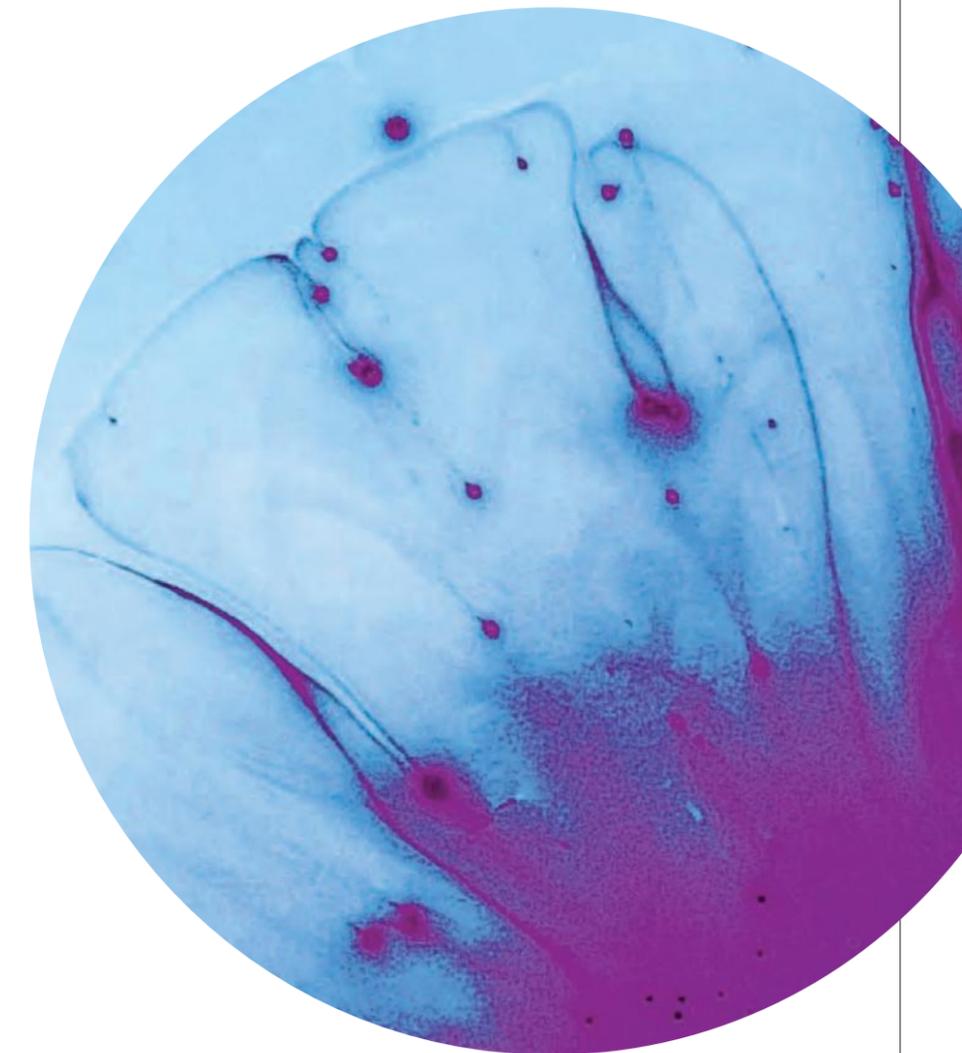
"We've also seen a negative fall back into predictable war metaphors. It's no coincidence that leaders play to this because they know it improves their popularity. It also means you can easily discredit any form of dissent. This idea

that we're all in this together and the virus is indiscriminate is not true – we know that certain vulnerable groups are far more susceptible, especially when it comes to poverty and class as we've seen in the United States.

"It's hard to have a war with an invisible enemy; we knew that with the War on Terror. A war requires enemies and when the virus is embodied, people start looking for scapegoats. This language of war gives rise to a certain order of politics that normalises militarism and leads to a creeping authoritarianism.

"After the Black Death we also saw the emergence of policing – not in response to crime but the need to regulate and survey populations. We've seen the introduction of temporary policing measures during this outbreak and we must be mindful that this doesn't become something that re-orders the policing of societies in ways which can be normalised very quickly, and are very difficult to reverse after that.

"This will be a pivotal moment in history and I'd like to think it will lead to better global cooperation and understanding, because one thing this virus shows is that borders mean nothing. I recently interviewed the Humanitarian Director for Save The Children, Gareth Owen, who said this feels like a case of humanitarianism coming home. We're recognising everyday insecurities – notably food and health – things which many people around the world are affected by daily. Hopefully things won't 'go back to normal' and we will have a better ethical appreciation of people who live with these vulnerabilities every day. We should have gone through this process transformed."



VOTE

VOTE NOW!

FOR

IN A YEAR WHERE SOCIAL ACTIVISM, PROTEST AND POLITICAL DEBATE HAVE NEVER BEEN MORE IMPORTANT, WE SPOKE TO SEVEN FORMER STUDENTS' UNION PRESIDENTS WHO HAVE SEEN IT ALL. TOGETHER THEY HAVE BEEN A PART OF OVER FIVE DECADES OF REVOLUTION AND EVOLUTION ON CAMPUS

Words Jodie Tyley

PRESIDENT!



1960s: WHERE IT ALL BEGAN

It was 1965 and the Bristol College of Science and Technology was about to gain university status and find a new home in neighbouring Bath. John Murdoch, the Students' Union president,

found himself at the centre of the planning and negotiations for this major milestone. "I remember swimming in the Roman Baths with the Mayor when we began developing links with the city!" he laughs. "The main issue was what the University should be called, and I represented the students' views to the college leaders, arguing that it should be the University of Bath. But we lost."

It was named the Bath University of Technology, but John has nothing but fond memories. He has supported the Alumni Fund for 26 years: "My experience at Bath was the foundation for my career," he says. "The course, placements and being president gave me such great training and shaped the rest of my life."



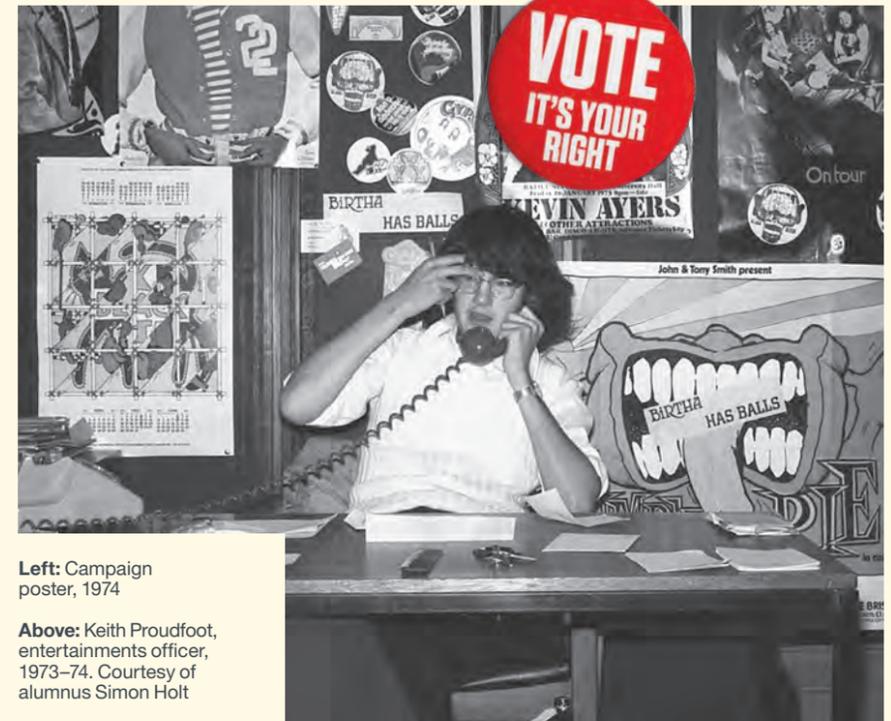
1970s: THE CAMPUS OCCUPATION

The students' wisdom was seen eventually, however, and the name was changed to the University of Bath in 1971. This change kicked off a decade of rapid growth, as former president Richard Hall tells us: "It was a young institution that was open to trying out new ideas. I was part of that vanguard of exploration and experimentation." Heading up the Students' Union in '74, Richard helped establish the first arts centre on campus – the Arts Barn (now The Edge). He was also responsible for setting up the student counselling service, Nightline, and even a driving school.

It wasn't a completely smooth ride, however. "Inflation was rising to over 25% and the University proposed that rents should increase by 30%," he says. It led to an occupation of the Vice-Chancellor's office and the University temporarily closed. Richard called off the protest in order to move forward, but was met with a vote of no confidence.

"The Students' Union was highly politicised," he recalls. "There was a vocal contingent from the Socialist Workers Party and the International Marxist Group, supporting a far-left leadership of the National Union of Students."

Richard successfully navigated the vote of no confidence, but later found himself in hot water. "On a summer's day in '75, we held a general meeting around the amphitheatre and there was an emergency motion that the president be thrown in the lake. Inevitably the motion was carried, and so was I."



Left: Campaign poster, 1974

Above: Keith Proudfoot, entertainments officer, 1973–74. Courtesy of alumnus Simon Holt

1980s: THICKSHAKES AND THATCHER

A decade later, Bath was not the political hotbed it had been. "You wouldn't have known that anyone at executive level had any political affiliation," says 1985 president Martin Trainer. "We were on the fringes until it started to directly impact us."

When Prime Minister Margaret Thatcher proposed cuts to student benefits, Bath rallied in opposition. "In those days you received a grant and you could claim support for rent and employment benefits during vacations," says Martin. "By today's standards, we were very well off (although it didn't feel like it at the time) and the government was trying to change that. We took a fleet of minibuses to London to protest."

Meanwhile on campus, Martin pushed for the SU to take ownership of the bars and catering facilities – something for which many presidents have campaigned. "We didn't have the commercial power that the SU has today, and one of our great victories was to get a thickshake machine installed in Norwood Refectory!" he laughs.

1990s: THE BATTLE FOR THE BAR

The Nineties saw a period of transition, according to 1990 president Chris Green: "We were developing the travel outlet, the shop, and we were making a bid to take over the bars."

"I learnt a lot during that year," he continues. "In my handover notes I wrote that the only person who understands what it's like to be president is another president, because of the stresses and strains you're under." For Chris this included a fire that left Wessex House out of action for months, with hundreds of students needing re-housing.

Vanessa Ruparel (née Workman) credits her experience as president with landing her first job. She took over from Chris in '91, becoming one of the first female SU presidents at Bath. "I opened a few eyes at council meetings," she recalls, "but I was fortunate that the vice-president and sports officer were also female, which was fantastic."

The team upped the stakes in the bid to get the bar under SU control. "We boycotted the busiest night, Sunday, and sold raffle tickets in return for alcohol and a film in the TV lounge," says Vanessa. "Things really changed when the new VC came in a year later and the SU was finally granted ownership of the bars."

2000s: A NEW UNION RISES

Developing the social spaces was at the heart of Alex Nicholson-Evans' tenure. After successfully lobbying for votes on the Parade ("My team decided that tie-dye was 'the thing' – the photos still come back to haunt me on Facebook!"), Alex became president in 2008.

It was the year the SU lost the 'pound-a-pint' offer but got the greenlight for renovations to begin. "Every student survey said they needed more space," she says, "so we had an architect draw the plans and began our campaign. In the end we had over 3,000 student voices saying, 'This is what we want and need', and the Vice-Chancellor said yes. Now the student experience is all the richer for it." A bigger, better Student Centre opened in 2010, which was designed by 2005 architecture alumnus Andy Battle and made possible thanks to £100,000 from the Alumni Fund.

Alex would recommend the role to anyone, saying: "Learning how to represent different people's voices in a coherent way and finding that balance between being firm without overstepping the line has set me up well for life."



"I OPENED A FEW EYES AT COUNCIL MEETINGS"

Vanessa Ruparel (1991-92)



Above: Alumni reunite in the SU at the University's 50th celebrations, 2017

Right: 2018-20 president Eve Alcock campaigns on the Parade

TAKE A STAND

UNIVERSITY OF BATH

WE ASKED PAST PRESIDENTS: WHAT WAS YOUR STANDOUT MEMORY?

MAKE HISTORY

1968-69
"My single best achievement as president was upholding Britain's centuries-old right of free speech and protest."
Tony Kerpel MBE

1971-72
"I remember NUS Conferences buzzing with ideas and coming across people like Jeremy Corbyn and Jack Straw."
David Johnson

1972-73
"We bought a coach to take students to and from RAF Colerne, which had excellent sports facilities. We had none, apart from a dart board."
Bill Moger

1973-74 ▶
"Our mass demonstration in 1974 prevented the Portuguese education minister from visiting the campus. Months later his right-wing regime was overthrown." (Right)
John Kidney



1976-77
"Helping to persuade the University to disinvest from apartheid South Africa, and a sit-in over ever-increasing student rents."
Stuart Appleton

1982-83 ▶
"The president was allocated a larger-than-standard room at the top of Norwood House. This was the view from that room during One World Week." (Right)
Neil Jarman



1993-94
"Fantastic memories, from successfully campaigning to remove clauses in the Education Act ('94) that would have severely damaged SU funding, to opening the first student-run bar and nightclub (The Venue and The Plug)."
Lee Nugent

2016-17
"Seeing our amazingly talented student groups at the heart of the University's 50th Anniversary celebrations made me very proud, and I'll never forget the incredible atmosphere when the Men's 1st XV secured the win in the last few minutes at The Rec!"
Lucy Woodcock

LOOKING TO THE FUTURE

Outgoing president Eve Alcock agrees: "Realising that you can genuinely make change by mobilising voices is really empowering. And that feeling when it results in a win; for example, with the buses – hundreds of students made their voice heard and we managed to get a private company to change their routes back to ones that suited students."

As president, Eve helped to recruit the current Vice-Chancellor and the Chair of Council, as well as implement governance reform. Now she ends her two-year term at a key point in the University's history, too. "Nothing prepares you for coordinating an organisational and representative response to a global pandemic," she says. "The SU is a charity, which means all the officers are trustees, and I also sit on the University governing body. So, I'm 24 years old and hold legal and financial responsibility for two multi-million-pound organisations during coronavirus and I sometimes think, how has this happened?"

While she prepares to hand over to 2019 activities officer and incoming president Francesco Masala, what does Eve feel are the issues that will continue to be on the priority list? "In the past couple of years we've had much more diverse sabb teams than ever," she says, "and I feel confident that the work we've done around widening participation and



"IT'S NEVER ABOUT YOU, IT'S ABOUT WHAT YOU LEAVE BEHIND"

Eve Alcock (2018-20)

prioritising equality and diversity within the institution will continue to grow and flourish. That's what you really want to achieve – to make changes that will outlast you – because it's never about you, it's about what you leave behind."

Much has changed at Claverton Down over the decades but while some of the issues come up time and time again, new president Francesco is under no illusions that this coming year will present an entirely new set of challenges. "Every year is unique and challenging in its own way, but I don't think anything will compare to the year that the officer team is about to start," he admits. "Covid-19 has reaffirmed the importance of the SU and its activities in providing the rich, all-encompassing experience our students deserve."

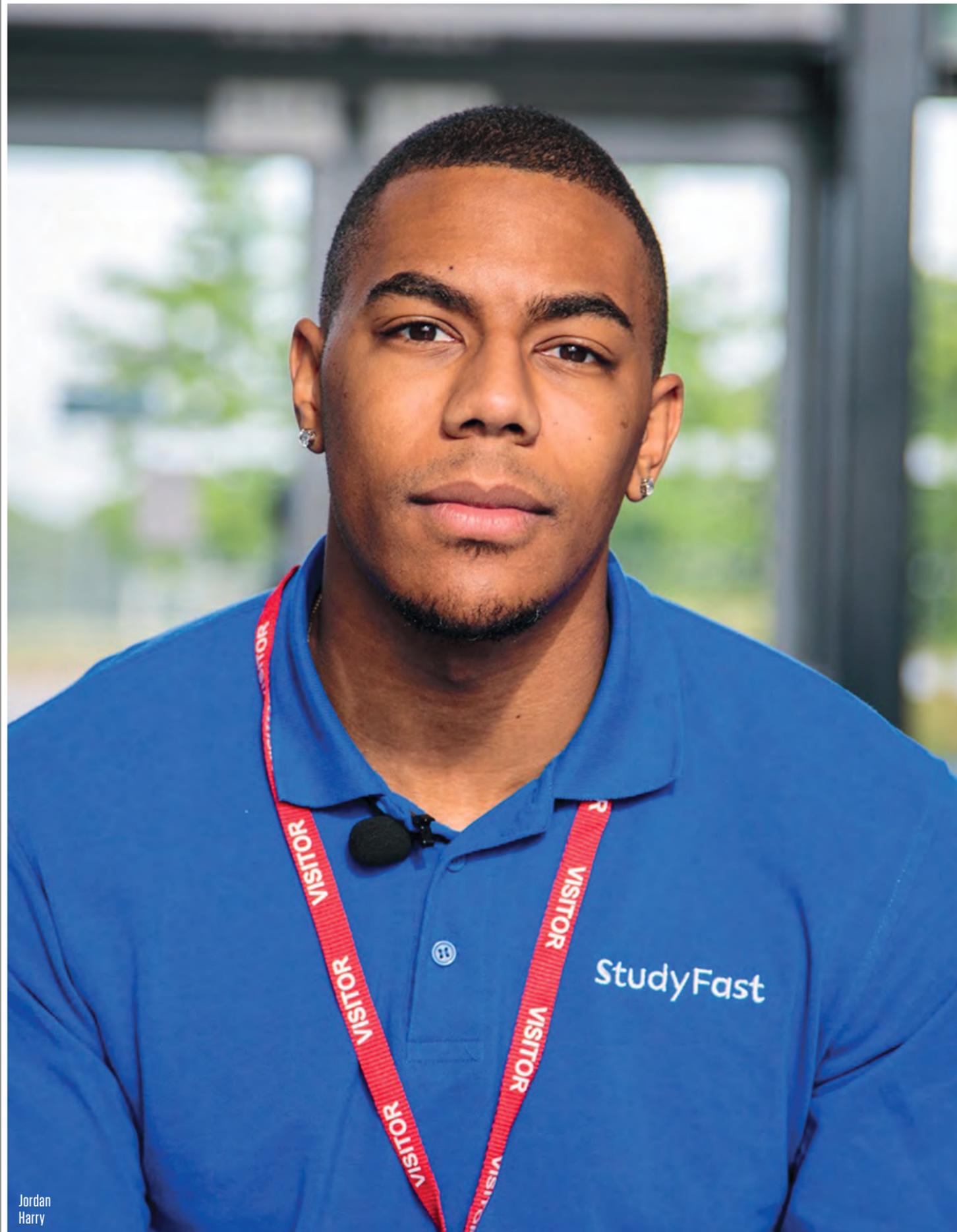
HANDOVER NOTES

FORMER PRESIDENTS PASS ON THE TORCH THROUGH TRAINING AND MENTORING

Thanks to support from 1974 president Richard Hall, a pioneering student leadership programme was recently established at Bath to provide the skills and support for managing everything from teams to committees to finances. "I came through the clearing system and now I'm an alumnus of a much-respected institution with a reputation around the world," says Richard. "I feel very proud to be part of the University today."

Chris Green (1990) has also maintained his connection to Bath, volunteering as an Alumni Gold Mentor for our Gold Scholars, many of whom are the first in their family to go to university. Chris says: "I was lucky that I was one of the last people to come to university with a grant, otherwise I wouldn't have been able to go. The Gold Scholars' passion and drive is fantastic because they have access to something they didn't expect to have."

His best piece of advice for students is to strike a balance between studies and societies: "You don't need to be president but being involved in extracurricular activities makes you stand out. I'd always recommend sabbatical positions to people; it's a fantastic opportunity."



Jordan Harry

WORKING TOWARDS EQUALITY

CEO of StudyFast and TEDx speaker **Jordan Harry** speaks with defence engineering veteran **Rakesh Sharma OBE** about how we can close the BAME leadership gap and better promote diversity in the workplace

Jordan Harry (BSc Sport & Exercise Science 2018) is an international public speaker, as well as the CEO and founder of StudyFast, a company that delivers speed-reading and memory training. He is half Nigerian and half Russian, was born in Essex and now lives in Norfolk.

Rakesh Sharma OBE (Executive MBA 1993) was born in Kenya to Indian parents and moved to the UK in 1966. He holds a number of senior industry roles and was elected as a Fellow of the Royal Academy of Engineering in 2016. In 2017 Rakesh was honoured with an OBE for services to defence capability and was named as a BAME 100 Business Leaders finalist in 2019.

This conversation was originally part of our Get Connected series of panel discussions, which are free for alumni and students to attend. Please look out for future Get Connected and other alumni events at bit.ly/UoBAumni

JH How are brands responding to the Black Lives Matter movement?

RS There are a number of brands who have taken it very seriously and have taken an inward look as to what they need to do in order to become more equal. You also get a set of brands who feel that they have to jump on the bandwagon because it's the latest thing on social media, and suddenly start putting up pictures of black squares, but they don't actually do anything internally – to look at their policies, look at the diversity and inclusion within their business, and look at how to make themselves more meritocratic. So it's trying to distinguish which are serious and which are treating it as marketing.

JH We don't just want people to listen to us because, you know, there are 101 webinars where people are just talking. We want you to be able to go away and make your own conclusions, make your own actions – and part of that might be creating your own BAME network.

We also need to be aware of what could potentially happen now, which is this idea of tokenism – this idea that because a company's not diverse and they hear that they need more diversity, they just address higher management levels. We need to be cautious of companies just hiring people based on ethnicity. I can attest to this, that I have probably succeeded faster in my field of work because I break the stereotype. A lot of people will see someone that looks like them and see what they can do to help them.

RS No one in the BAME community shies away from hard work. What we're looking for are three things. The first is aspiration: if you believe growing up that you can't be a CEO or a doctor or a

scientist, then you never try. The next thing is education: give the younger generation a decent education so that they can do something with their aspiration. And then finally, to make it all come together, you have to give opportunity. So even if someone in the BAME community has the aspiration and education but never get the opportunity, because they're not connected and they're not white, then it's all for nothing.

“What I hope to see is equal opportunity for BAME candidates in life and in society”

Rakesh Sharma OBE

JH What impact do you think all of this is going to have on the UK employment landscape?

RS It's very difficult to say what I think we'll see. But what I hope to see – equal opportunity for BAME candidates in life and in society – is not an overnight thing. The Black Lives Matter movement and George Floyd's murder in the United States is not going to change things overnight. It's going to put that topic on the agenda for discussion. This is what we've been seeing over the last 50 years. During my school years, in a comprehensive school, teachers used to make statements that today would see them fired immediately.

It may seem that we've made no progress at all in this country – we have, but there's a lot more to come. I hope that when companies are looking at recruiting and promotion, they look

beyond skin colour to the merit, capability and work ethic that people have. If you have that, you'll have the natural increase of BAME people, and eventually start to see more BAME chief executives. At the moment, only 6% of the FTSE 350 have a BAME chief executive, when actually the BAME community make up 14% of this country. We hear a lot about gender equality, but we haven't heard a lot about racial equality in companies.

JH We all have unconscious biases. What's important is that we acknowledge what they are. I've been bought into many companies by referral by other black people – again, an unconscious bias on both sides. I believe what we all need to do is educate

ourselves and understand what biases we do or don't have. Who you know will get your foot in the door, but what you know will keep you there. I really do believe that.

“We all have unconscious biases. What's important is that we acknowledge what they are”

Jordan Harry



Rakesh
Sharma
OBE

Moving on from the workplace as it stands right now, what could universities be doing?

RS I think universities could do more with aspiration. They should be going more into schools to stimulate that demand from the BAME community. When you think about how we can make sustainable change for the non-white community, it's a bit like the R number for Covid-19. If one person succeeds in life and helps two people to succeed, and those two people then help others, that's how we're going to get meritocracy and equality.

JH As we keep echoing, this conversation has to keep going. The Black Lives Matter movement didn't just start – it's been going for long time. But it's now at the forefront of media, we're locked down and we have nothing else to do but look at our phones. It's an opportunity to really educate yourself on what's been happening and what's going to happen.



MAKE A DIFFERENCE

Chair of the University's African and Caribbean Society, Paul Joel, explains how you can help

“There are a variety of ways you can help BAME students. Create specific networking opportunities targeting BAME students. Studies in the UK show that graduates from black African and other black ethnic groups are the most likely to have no destination five years after graduating, standing at 9.4% and 10% respectively. Networking is one of the key ways of entering the workplace and will help to bridge this gap. Career-building tools – such as job fairs, CV workshops and job postings geared towards BAME students – can also help them to apply for higher-paying and more competitive roles.”

If you're interested in getting involved with ACS events such as panel discussions, please email alumni@bath.ac.uk.

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BATH'S BEST...

Street: St Lawrence
in Southgate



1969: If you go down to the woods today, you're sure of a big surprise – if you compare this snap of Westwood when it was under construction back in October '69 to the seven

accommodation blocks that now stand on the site. More than 650 first-year undergraduates live there each year, across a mix of single bedrooms and studio flats.

Share your memories of Bath student accommodation with us by emailing alumni@bath.ac.uk

BA2 Extra

ALUMNI SPOTLIGHT

Movie producer Stewart Till CBE on student life in the '70s and how Bath set him up for a career in Hollywood

In 1999, a preview of *Notting Hill* – the best-selling movie of that year – was screened by the lake on campus. That's because the man who greenlit the film was none other than alumnus Stewart Till CBE (BSc Economics & Administration 1973). For over 30 years, Stewart has been an influential figure in film production and distribution, and was awarded a CBE in 2000 for his services to the industry. He has been responsible for movies such as *Trainspotting*, *Being John Malkovich* and *Fargo*. Now a producer in Hollywood with Till Entertainment, Stewart has previously worked as an executive at companies including 20th Century Fox, Universal and Sky TV, as well as being the former Chairman of the UK Film Council and one of the largest film distributors, United International Pictures.

What are some of your memories of being a student at Bath?

I joined in 1969 when the University was quite embryonic. There was a sense on campus that we were part of something new that could be very special. While some universities were all about their history, Bath always looked to the future, and I found that very exciting and empowering.

I was a keen footballer and played for the University 1st XI. We were the underdogs and no one expected us to beat the bigger universities but we did. I was also social secretary and then vice president of the Students' Union, responsible for entertainment. We got top bands at the time to play at our events, like Fleetwood Mac and Pink Floyd. We were creating history, though we probably didn't realise it at the time.

Have you been back to visit campus?

I've been back a few times and the growth of the facilities is staggering, but because it expanded from the core it feels like a bigger version of what it was, rather than a different place.



“There was a sense on campus that we were part of something new that could be very special”

Right: Stewart as a student at Bath

Top right: The Parade in the 1970s

What's the secret to spotting a hit film?

It's essentially intuitive but a good script is vital. There's a famous saying that there's been many a bad film with a good script but there's never been a good film with a bad script. Is it a compelling story? Could you imagine audiences going? Is it distinctive and unusual? You read a hundred scripts before you find one you like.

Which movies are you proudest to have been involved with?

The two biggest ones are *The Usual Suspects* and *Four Weddings And A Funeral* – in part because other people didn't want to make them – they had been turned down. More recently I've enjoyed working on *Taboo* with Tom Hardy.

Movies are a form of escapism for most of us – can you still enjoy a good film?

I still enjoy watching TV and going to the cinema but I can't help watching it both as a consumer and as a professional at the same time. Half of me is thinking, 'where did they find this script? Oh I wouldn't have cast him'. But I love it. Recently I really enjoyed *Jojo Rabbit* and *Parasite* – films I had nothing to do with, but they were so intelligent and entertaining and could possibly change people's views about things.

What advice could you give to recent graduates who want to get ahead?

I think you need three things to be successful: you need to be bright, you need to work hard and you need luck. There's a quote from Thomas Edison that says genius is 99% perspiration and 1% inspiration. [When I'm hiring] I always look for team players. Maybe it's because I'm a sports fan, but I do like people who not only want to be successful themselves but who want the team that they're playing for to be successful too.

How did your degree at Bath impact on your career?

I've worked in London and America; I've run international divisions of companies; I've worked in ad production and film and television. I've got a business brain and I've also got a creative side to know whether a script will work.

You could argue that my degree taught me the theory of business, accounting and marketing, but the entrepreneurial atmosphere of the campus nurtured my creative skills – putting on social events, choosing the bands and deciding how we marketed it.

Bath had an enormous impact on me. I arrived unsure about life and uncertain about my future career and left four years later a better, stronger and more optimistic person. Several decades later I am living in Santa Monica and am enjoying some success in film and television. I owe Bath a lot.

THE TOP SPOT

We asked our Facebook followers: what was your favourite place on campus or in the city?
Join the conversation @bath.alumni.community

“On the way to the golf course from Eastwood there was a small cave with a rock pillar in front. Fantastic view down into the valley with just rolling hills beyond!”

Carole Greenall
(BA MLES French & German 1978)



Views towards Bathwick Hill and the Sham Castle



Near Eastwood accommodation, circa 1978



Abbey Square

“I used to sit on the benches in the square by the Abbey and eat my chocolate-coated strawberries from a lovely little shop there on the corner.”

Jackie Wilson
(French & Russian 2001-02)

“The Saracens Head pub in town. On Saturday evenings after playing rugby in the '60s, lots of the local teams would be there.”

Dr Andrew Symons
(PhD Pharmacy & Pharmacology 1971)



The Parade on campus



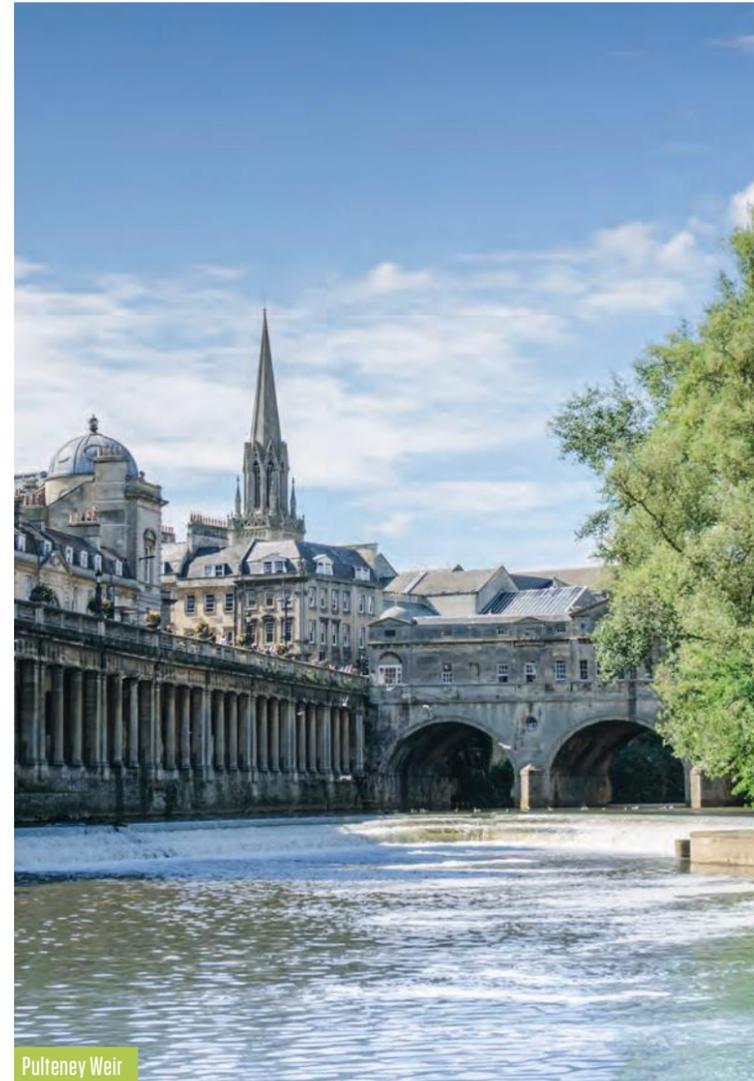
Looking across the Royal Crescent from Marlborough Buildings

“The view across the Royal Crescent (and the whole of Bath) from my top-floor flat in Marlborough Buildings. I miss waking up every morning and looking out over such a beautiful city.”

Allan Mansfield
(BEng Materials Science & Engineering 2000)

“There’s something relaxing about sitting and listening to the sound of the water going over the weir and covering the everyday noise of the city.”

Dr Ioanna Stamataki
(PhD Civil Engineering 2020)



Pulteney Weir



Looking down from the Skyline Walk

“I certainly liked sitting and reading by the lake, but it could get very busy and not too quiet at times. I used to like sitting by the wall between campus and the golf course, too.”

Dr Russ Sims
(PhD Chemistry & Education 1978)



The campus lake

“The view from the Bath Skyline walk never gets old. After a stressful day, it helped to put things in perspective and gave you time to breathe.”

Jackie (BSc Physics 2012)

“St James’s Square – a Georgian square behind The Circus. My favourite, because we lived there! It was my first home with my boyfriend, in 1990, and we’re still together now.”

Dr Di Cope
(PhD Biochemistry 1994)



LEADING QUESTIONS

Preet (left) during her time in Bath

Preet Sanghvi (MSc Marketing 2013) is co-founder of food curation company Gourmet Tales Co and a freelance marketing consultant and strategist based in Mumbai, India. As one of our International Ambassadors on Bath Connection, she offers advice to postgraduate offer-holders about studying at Bath.

What are your favourite memories of your time in Bath?

Every minute in Bath is a memory for me – from taking the bus up to campus, to the classes. I particularly miss the study and discussion sessions. One of my favourite memories is organising the graduation ball in 2013!

What was the best thing about being an international student?

The fact that you have so much to explore, and the interactions you have with other international students. I made long-lasting friendships with people around the world and have learnt so much from them. It was amazing to share each other's experience, cultures and expertise.

What led you to become one of our International Ambassadors?

I was an active member of various committees and organised a lot of events during my year in Bath. My time at the University taught me to become an extrovert, be more socially active, participate in events and network with people. As a result, I've regularly attended alumni events in the UAE and India since graduating and so was

approached by the University to become an Ambassador – I couldn't have been happier to take it up. I love this University and am a spokesperson for it everywhere. A lot of students, especially from India, consider Bath every year and they have a lot of questions. They can relate to someone from their country, so it feels great to be advising and helping them out!

What do you enjoy about being an Ambassador?

I enjoy sharing my experience and giving prospective students a very practical and honest review of what life in Bath looks like, as well as helping them with their career paths. I also enjoy networking and meeting new people. I love being associated with the University in every possible way to give back to Bath.

Are there any interesting questions you've been asked by offer-holders?

A lot of students often ask about how life at Bath helped me to grow not just professionally but also personally. I also get asked a lot about career prospects in the UK following a master's.

What would be your top piece of advice for someone starting out in their career?

Try gaining experience in your field, whether that's professionally or via extracurricular activities to really understand whether you like what you're getting into. And don't just bank on bookish knowledge – get out in the world, network with people from your field and share your knowledge!

More than
40,000
alumni live outside the UK

If you were an international student during your time at Bath, why not share your experiences by becoming an International Ambassador? Sign up at go.bath.ac.uk/bath-connection

BATH'S BEST STREET

Ellie Andre (BSc Management with Marketing 2022)

It was a rainy day in Bath when I visited for the University open day. My Dad and I took shelter under an arch next to the famous Fudge Kitchen as rain battered shop windows and caused tourists to tuck cameras in their bags as they hurried away from the Abbey. Putting our hoods up and realising this wasn't a fleeting shower, we began to make our way back to the car – not that we knew the way. It was along this hurried journey that I discovered Southgate for the first time, and the personality of St Lawrence Street. I've never stopped loving it since.

St Lawrence Street is known for its art installations and décor in line with city-specific or wider global events. On this particular day (and aptly so!) hundreds of multi-coloured umbrellas stretched across the street, suspended in a bright canopy overhead. Dim light filtered through the gaps between the umbrellas and gave the street an atmosphere that stopped me in my tracks.



Umbrellas and wisteria over St Lawrence Street

I took a photo and uploaded it to Instagram: 'very in love with Bath' was my caption. Little did I know this wasn't a permanent fixture, so when I returned to the city that September as a fresher, I was disappointed to discover the absence of brollies above what I'd been referring to my friends as 'Umbrella Lane'. However, it wasn't long before a new theme greeted the skies over Southgate. My favourite themes have included vibrant ribbons and skulls in ode to Mexico's Day of the Dead, and the pastel-coloured wisteria walkway to celebrate the Bath Festival.

Towards the end of my second year, I was heading towards the bus stop after a night of clubbing when I saw workers installing a new theme on the street. I'd never considered this before; how they would work late into the night, unseen... the décor suddenly appearing the next morning as if by magic, ready to become the next Instagram backdrop for tourists and locals alike.

I think what strikes me most about St Lawrence Street is how it brings life and movement to a city of deep heritage and age. While the stone buildings remain unchanging in their golden hue, Southgate's decorations enable Bath to evolve with culturally significant events, giving tourists a reason to visit time and time again. Not to mention, it serves as a reminder of the changing of the seasons, with the wisteria walkway giving an inevitable spring to the step of passers-by.

Although there are periods of time when the street is stripped of its rich themes, I always wonder what could come next. After living in Bath for two years now, I find that a city that can keep its locals guessing is one that serves its inhabitants (and not just its tourists) well.

Do you agree? Let us know!

✉ alumni@bath.ac.uk

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“ I can't praise the alumni volunteers enough for all the advice, answers and thoughtful comments they've given to help me make some important decisions about my future. ”

Tianna
Sociology and Social Policy student

Visit go.bath.ac.uk/bath-connection



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