

BA2

THE MAGAZINE FOR ALUMNI AND FRIENDS OF THE UNIVERSITY OF BATH
ISSUE 27

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OUR PHD
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TACKLE
TODAY'S BIGGEST
QUESTIONS 08

?



UNIVERSITY OF
BATH

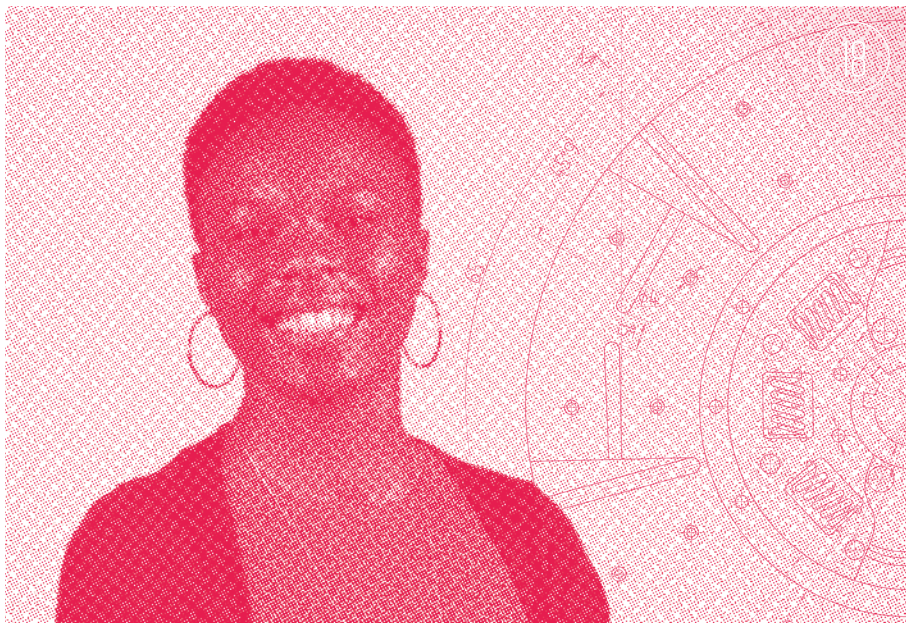
“AI IS A FUNDAMENTAL RISK TO HUMAN CIVILISATION IN A WAY THAT CAR ACCIDENTS, AIRPLANE CRASHES, FAULTY DRUGS OR BAD FOOD WERE NOT” ELON MUSK

The threat of machine-learning overlords has unnerved Tesla’s CEO, but should the rest of us be worried?

Our University will train a generation of experts in accountable, responsible and transparent AI by leading a new Centre for Doctoral Training. That’s not the only pressing issue our PhD students are exploring either, as you’ll find out on page 8.

Also in this BA2 we welcome our new Vice-Chancellor and President Professor Ian White and bring you all the latest news from campus and the community. Enjoy the issue!

Let us know by emailing alumni@bath.ac.uk – start your message with ‘BA2’.



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Bath reunited!

A snapshot of this year’s campus reunions.

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Martin and Julia on campus

Lost and found

We love to reunite classmates, but this link-up was extra special and we were delighted when the pair paid a visit to campus to share their story.

Julia Hobby (BSc Economics 1977) and Martin Blake (BSc Electrical & Electronic Engineering 1978) had briefly dated in the first year of university, introduced by mutual friend Richard Hobby (BSc Electrical Engineering 1977).

"I got terribly sick at the end of my first year and Martin had to go away on placement," Julia recalls. "He asked Richard to look after me and he looked after me so well I married him!" After graduating, the pair moved to the United States, started a family and were married for more than 40 years before Richard sadly passed away in 2018.

Julia got in touch with us to let his classmates know. "We'd lost touch with Martin over the years and I

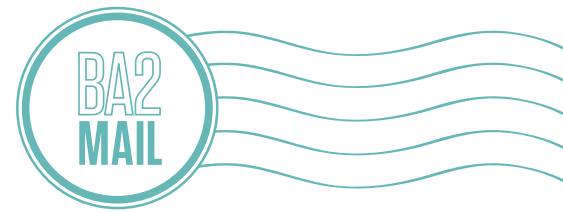
asked if you could get hold of him. The rest is history! Thanks to the Alumni Relations team, he responded straightaway."

"It was wonderful," says Martin. "We had a great time that first year [at Bath], we knew each other really well, so why not come back together again."

Julia and Martin are now engaged and we wish them every happiness for the future.

If you've lost touch with someone since Bath, we might be able to help!* Email us at alumni@bath.ac.uk or telephone +44 (0)1225 386824. We cannot provide details of other alumni without their permission but if we hold their current contact details, we can pass on a message on your behalf.

**Proposals not guaranteed.*



In response to BA2 26, The Last Word

Thank you for the latest edition of BA2 – a really interesting read, especially the pieces about the latest research being carried out at the University. However my enjoyment was somewhat spoilt by a phrase in the piece about the former Vice-Chancellor. It states: 'In the seventies attending the University of Bath was not something to boast about to prospective employers or at dinner parties.'

As someone who attended the University in the seventies I was immensely proud of the work of the Engineering and other departments. I know that you have a disclaimer saying that the opinions expressed in BA2 are those of the contributors and not necessarily those of the University but I still feel mildly offended by the implication.

Bob Welch
(BSc Electrical and Electronic Engineering 1974)

We received several letters to this effect and we asked the writer Sue Ryan (BSc Sociology 1972) to respond. Here's what she had to say:

"Bath was a brilliant university but as a relatively new institution in the 1970s, it had not had the opportunity to build its reputation across the board."



The view from E37.04 in 1990

Campus coincidence

I met my husband Steve at Bath in 1992 and our eldest daughter Charlotte chose to study Biomedical Sciences. Eastwood was her preferred accommodation choice but imagine our surprise when she was allocated the same room I had as a fresher 28 years ago – out of 600+ rooms!

It was exciting moving her into my old room, which actually hadn't changed much at all! I was pleased to see the bathrooms and kitchen had been updated, but the main difference was the view of the new accommodation blocks where there used to be playing fields.

Charlotte's now finished her first year and she loves Bath as much as we did.

Karen Moss née Haynes
(BSc Sociology with Industrial Relations 1993)



Above: Karen's room back then



Right: Charlotte and her mother Karen in E37.04

Stay in touch!

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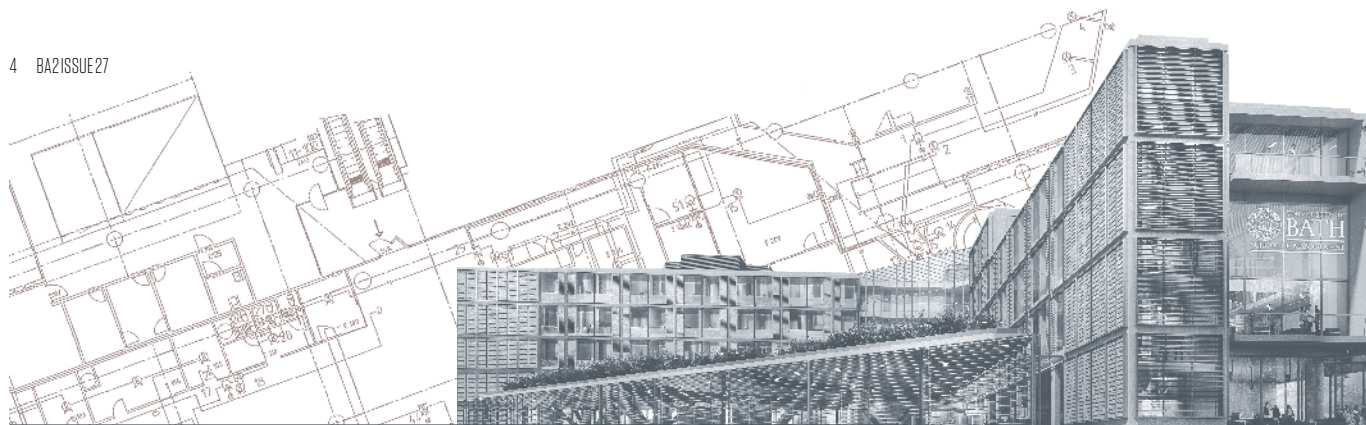
The man with the Gorgon tattoo

I studied Pharmacy and had a fantastic time. I made some very special friends and also met my wife Caroline. I try to visit Bath as much as I can and this year decided to run the Bath Half Marathon to support a charity close to my heart, the NSPCC. After completing the race I decided to treat myself to some more ink. The best man at my wedding and fellow alumnus Andy Beal (BSc Economics & Politics 1990) suggested the Gorgon's head as a link to the historic city and to the University. It was the natural choice. I am proud of my connection to the University and support workshops with fourth year Pharmacy undergraduates. My son Joseph (BSc Mathematics 2018) also studied at Bath. Will I get more tattoos in the future? Probably. Will they be related to Bath? You'll have to wait and see!

Graham Parsons
(BPharm Pharmacy 1990)



Graham's forearm tattoo



Campus

New Vice-Chancellor takes the helm

Professor Ian White FREng joined us as our new Vice-Chancellor and President in April 2019, the seventh person to have held the role since the University was established in 1966.

It was a warm welcome back for Professor White, who was Professor of Physics here at Bath in the 1990s. Most recently, he was the Deputy Vice-Chancellor and van Eck Professor of Engineering at the University of Cambridge and Master of Jesus College.

At a special welcome event at The Edge, Professor White met with students, staff, alumni and friends, and also received greetings and

congratulations from alumni around the world by video.

Thanking everyone involved, he said: "I am humbled by this event. Although I have much to learn, there are three key areas that already speak to me about what a special place our University is: its people, its professionalism and its pioneering spirit." Read an interview with our Vice-Chancellor on page 14.

The University also appointed a new Chair of Council this year. Pamela Chesters CBE takes up the position at the head of our governing body for three years initially, bringing considerable experience of strengthening governance in the Higher Education, public and third sectors.



Campus

New School of Management gets down to business

Visitors to the east of campus couldn't have failed to spot the site of the University's new School of Management building. After possibly the biggest hole ever dug on Claverton Down, we're pleased to report that the new structure is really taking shape.

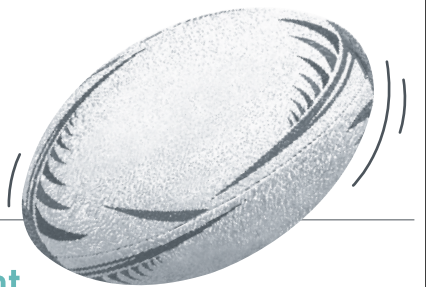
Jonathan Watts (BEng Architecture 2004, March 2007) from Hopkins Architects worked on the design for the new building. "As a former student it has been a hugely personal project for me," he said. "To be able to come back and contribute has been a fantastic experience."

Professor Veronica Hope Hailey, Vice-President of Strategic External Engagement, added: "It's the idea of bringing the students, business and faculty together that's so important and sums up what this School has been about over the last 50 years and is going to be even more about for the next 50 years.

"If you've studied anywhere you want the reputation of your university to be maintained and enhanced because it helps you through your career. I believe this School is only going to further enhance its reputation and profile as a result of this investment. It's so much more than just bricks and mortar."

The new building will include a 250-seat auditorium, eight lecture theatres, an Employment Hub and Behavioural Research and Entrepreneurship Labs.

150 The number of students at Bath on our pioneering Gold Scholarship Programme, supported by alumni and friends.



Alumni

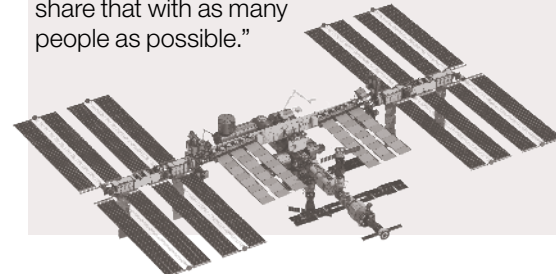


Credit: NASA/Bill Ingalls

Alumna astronaut returns to Earth

Many of you will have been tracking the adventures of alumna Lt Col Anne McClain via social media, after she joined the crew of the International Space Station in December. Anne – or @AstroAnimal to her Twitter followers – graduated from Bath with an MPhil in Aerospace Engineering in 2004. She landed back on Earth on 25 June after a successful six-month mission as part of Expedition 58/59.

Anne said the experience has left her with a new sense of perspective: "From space you don't see borders but you do see natural phenomena – storms, floods and hurricanes – and you realise it all affects us the same way. Not only are we dependent on one another but we're all in this together and that perspective has really touched me to my core. Going forward I really want to share that with as many people as possible."



Research

Bath research amongst UK's biggest breakthroughs

Our research featured twice this year in Universities UK's #MadeatUni campaign, which celebrates the differences universities make to people, lives and communities.

The 'Nation's Lifesavers' list compiles the top 100 individuals or groups based in UK universities whose work is making a life-changing difference to people's health and wellbeing. The list featured initiatives from our Centre for Applied Autism Research to improve access and opportunities for people with autism. This includes the UK's only autism summer school, a unique autism employment school and free online courses designed to help parents and carers.

Earlier this year, our sports science research that has gone on to make rugby safer for the 9 million players around the world was included in the 'Best Breakthroughs' list. We developed the pre-binding scrum technique, now known as 'crouch, bind, set', as well as a new injury prevention programme.

We're proud that the work we do on campus translates into real-life impact around the world.



Research

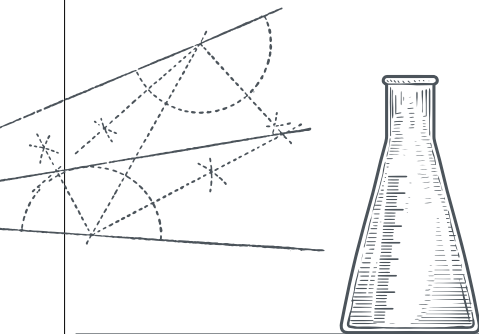
Royal reception for research

Her Majesty The Queen met University of Bath researchers involved in innovative projects aiming to reduce injuries in horse riding, as part of a Royal Visit to Somerset in March.

At the stables of leading horse trainer Paul Nicholls, Her Majesty heard from Professor Keith Stokes and Dr Dario Cazzola from the Department for Health, who presented their new project with the British Horseracing Authority which focuses on reducing the risk of spinal injuries for jockeys.

Her Majesty then met Dr Ben Metcalfe from the Department of Electronic & Electrical Engineering. Ben is developing a wearable device for racehorses that would give trainers and veterinary professionals more accurate, real-time data on horse fitness and wellbeing.





Alumni

Most inspirational woman in STEM

Professor Marcelle McManus scooped the award for Most Inspirational Woman in STEM at the West Women of the Year Awards 2019. She was one of 100 women across the region to be recognised in categories including STEM, sport, business and the charitable sector.

Marcelle is a Professor of Energy and Environmental Engineering in the Department of Mechanical Engineering, and graduated from Bath with a PhD in 2001. She primarily studies the life cycle impacts of different technologies, trying to find ways that we can produce energy and power with the lowest carbon emissions, and the most sustainable options which work with all of the other resources that we have.

When asked for her advice for women thinking of pursuing a STEM career, she said: "There are so many global challenges with climate change, energy security, resource management, water scarcity, and we need so many different types of people who can solve these problems. When you get to a point when you're working on something and you realise you've figured out how you can do it, it's an amazing feeling. So stick with it!"

"There are so many global challenges to solve"



Research

Buzzwords

What our researchers are talking about

Accents

Broad regional accents can hold people back in their careers, new research from our Department for Education finds.

Betting

Our School of Management researchers are calling on betting firms to introduce 'risk warnings' to label the relative risks of different football bets.

Dengue fever

Researchers from our Department of Electronic & Electrical Engineering are developing a new tool for detecting the presence of Dengue fever early on, helping prevent people from suffering potential life-threatening complications.

Cannabis

Cannabis resin and herbal cannabis have significantly increased in potency and price, which could lead to increased risk of harm, says a Department of Psychology study – the first to investigate changes in cannabis across Europe.

Don't you know the Queen's English?



Why, yes, I'd heard she was.



Sun cream

Researchers from our Department of Pharmacy & Pharmacology have designed a brand-new molecule which could be added to sun cream to protect people with a rare genetic disorder from damaging UVA radiation.

Work experience

Paid work experience and 'sandwich degrees' help boost social mobility, says new research from our School of Management. (Good news for graduates who took placements!)

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



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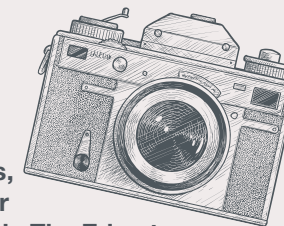
The number of our subjects which rank in the UK top 10 in the Complete University Guide 2020. Architecture and Marketing are rated the best in the country.



Campus

A Platform for talent

Creativity was top of the bill at Platform in March, when alumni, special guests, donors, members of the public and our campus community gathered in The Edge to witness the talents of our new arts scholars.



Platform is an annual opportunity for students to share how the arts are an integral part of their university experience in Bath, and this year's was extra special because it celebrated the highest number of arts scholars since the programme began and the most diverse range of art forms.

The evening included theatrical performances from Psychology and Civil Engineering students, musical compositions from scientists and mathematicians, and an exhibition of photographs from students studying Sociology, Sport & Social Sciences, and Architecture.

Research

In a nutshell

Take a butcher's at this! Tissue engineers at the University of Bath are growing animal cells on blades of grass.

Did you say blades of grass?

Yup.

Where?

Down by the lake.

I'm confused.

Just kidding. In the labs in 9 West.

Not funny. Why are they doing that?

To eat, of course.

But how does it work?

A biopsy is taken from a pig or a cow, then stem cells from the sample are placed in a bioreactor, where they are fed a solution of glucose, amino acids, vitamins and minerals. This allows the cells to develop into mature muscle cells that form meat.

Mmm. Tasty.

It is, actually. Although the current texture means it's best suited to making sausages and burgers.

But why do we need lab-grown meat?

For two very important reasons, says Dr Marianne Ellis, who's leading the research.

First, we need something like an additional 60 million tonnes of protein to feed the world's growing population by 2050. Current food production methods won't scale to keep up with what we need to feed everybody.

Second, it's better for the planet, producing fewer greenhouse gas emissions, and using less water, land and energy compared to traditional beef production.

So when can I get it in the supermarket?

That's still a few years off. Right now, Marianne's team is working on reducing the costs – and the energy – required to grow it. But their work is helping the UK understand how to scale up production most effectively. The aim is for lab-grown meat to be the same price as traditional meat in the shops.

Well, burger me.

Hey, watch your language! This is a family magazine.



Students

Crowdfunding launches at Bath

There are now even more ways to support our students and researchers! Crowdfunding at Bath is our brand-new platform which makes it easy for alumni and friends to donate towards research projects, activities, student societies and sports clubs. There are no fees, which means every project you support benefits from 100 per cent of your donation.

In its first year, you've supported a range of good causes through Crowdfunding at Bath, from helping student volunteers put on a Christmas party for children in Twerton and sending Architecture and Civil Engineering students to Zambia to build sports facilities, to funding Team Bath Racing Electric's entry to the Formula Student competition in China.

Look out for even more great causes to support this year at bath.hubbub.net/

BIG QUESTIONS

New funding from UK Research and Innovation (UKRI) and EPSRC will bring another 250 bright minds to Bath over the next five years, to unpick more big questions around AI ethics, future mobility and big data.

OUR PHD STUDENTS SHARE WHAT'S DRIVING THEIR THINKING.

Words **Rachel Skerry**

University gives people the space to think big. To learn from others. And to discover and share new knowledge that could impact on the world outside. We asked five current and recent doctoral students about the big questions that motivate them.

Is AI changing the way we think?

When will machines be smarter than us? It's the most common question students ask me. My answer is "They already are". Smart machines can already do things that humans could never do; a spreadsheet can calculate a table of numbers in a fraction of a second, for example. There's a lot of hype around artificial intelligence. The tech industry in particular is always looking for something new, even when it's not new, so in a sense AI is just a new label for technology.

That said, at the beginning of this century, computer scientists made a big breakthrough in being able to build much deeper neural networks, with more layers in between them. Because we're building faster and faster computers, people argue that we're effectively building intelligence, and soon there'll be no limit to what this intelligence can do. It plays to Western fears about creating something which then destroys the creator – from ancient Greek mythology, where Pygmalion fell in love with one of his sculptures which then came to life, through to Frankenstein and the Terminator.

This doesn't mean we shouldn't be worried about AI, but we need to reframe the question: instead of focussing on what this technology can do, we should be focussing on what we should do with this technology.

That's why I ask my students to think about the ethical implications of

whatever they go on to build. For example, the government is moving its services online, but that doesn't mean everyone can access those services. We need to ask, is it going to discriminate against people, or lock some people out from certain benefits that they might otherwise have had?

For my PhD I built a robot and conducted experiments to observe how people interacted with it. What I learned was that if the machine nature of a robot is overt, then humans are able to see it as a mechanism, and therefore better understand its purpose. For example, what's the economic transaction that's going on? Who's benefiting from this robot? How much of the benefit that's being derived is ours? By making technology transparent, it's less likely people will be deceived by it.

I think there are dangers in continually trying to optimise life because we learn when we search and explore for ourselves. For instance, when tech companies replace search functions with recommendation engines, we start to defer to the technology, which could then weaken our own decision-making capabilities.

AI also has huge implications for human to human contact. Take sex robots, for example. As we build smarter machines there will be a tendency to start to treat them like people, but conversely this could mean we start to treat people like machines. Or the self-scanning supermarket checkouts might be more efficient, but for people who live alone, talking to another human at the checkout might be the only contact they get in a day. So it's important to explore what the implications are of optimising human contact to the extent where relationships are replaced by transactions.

Guiding principles around AI already exist, but we really need standards of professional behaviour that are enforceable, like the norms that we have in other areas, such as genetic engineering. And that's a new attitude in this area, because technology is all about being disruptive. To put it simply, just because you can do it, it doesn't mean that you should.

Dr Rob Wortham, MEng Electrical & Electronic Engineering 1986, PhD Computer Science 2018

HOW CAN WE MAKE AIR CLEANER IN CITIES?

How can we make air cleaner in cities?

I enjoy working on things which have the potential to solve big problems. This year, my maths PhD took me to Mongolia, which has a really big problem: air pollution.

Although Mongolian people are traditionally nomadic, more than half of the population now lives in the capital city Ulaanbaatar. One million people live in gers (yurts) on the perimeter; in winter they burn coal to keep themselves warm. The city is surrounded by mountains, which keeps the wind out but also keeps the smog in – every morning and evening when I was there, I'd look out into a grey cloud. The smog is threatening public health.

Policymakers want to correlate the levels of air pollution with the numbers of patients who are admitted to hospital with respiratory problems. This will provide evidence that will help to drive

change from the government, such as making cleaner fuels more easily available. However, they don't have a lot of reliable data because there are only 12 air quality sensors across the whole of Ulaanbaatar – London, in comparison, has 200 sensors.

I'm building a probabilistic model to predict atmospheric dispersion, which means how particles move in the air, whether that's volcanic ash, radioactive waste or air pollution. It's the kind of maths which is particularly useful in situations where you don't have a lot of data.

One thing that struck me when I visited, was that we need to make mathematical models as simple as possible so they can be used on the ground. Helping to build capacity in mathematical skills in academic and government organisations is really important if this work is going to be successful.

Getting these kinds of opportunities isn't something I'd anticipated when I started my PhD. I did an actuarial placement as an undergraduate – calculating statistics for insurance companies – but I didn't enjoy it. That's a great thing about doing a placement while you study, because if you waited until after your degree to try it you'd probably just stick at it!

Teo Deveney, PhD candidate in Statistical Applied Mathematics at Bath (SAMBa)

WHEN ANTIBIOTICS STOP WORKING? WHAT ARE WE AT?

What happens when antibiotics stop working?

Antibiotics are ceasing to be effective. In 2016 there were 700,000 deaths worldwide, which should have been preventable by antibiotics. The frightening thing is that, as more bacteria and organisms become resistant, by 2050, 10 million people could die every year. It could come to the point that you could die from getting a tooth removed.

Finding alternatives to antibiotics is crucial, and people are questing in different directions. Some people are looking for plants on the tops of mountains in the middle of the jungle, others are going to the bottom of the sea to find plankton that may have properties that could lead to new treatments. I'm looking back to 1,000 years of history.

A colleague had read about how scientists had created and tested an eye salve from a recipe they found in a 9th century text. In basic lab tests they observed how it cleared up the staphylococcus aureus infection

– one of the most common bacteria that will typically invade a surface wound. It got me thinking 'how was this remedy working? Which was the active part? How was it killing off the infection?'

Our research will identify, recreate and test around 50 different remedies for wound infections, found in mediaeval manuscripts written in ancient Greek, Latin and Anglo-Saxon, by monks and apothecaries. The recipes mostly use naturally occurring ingredients, things like garlic, leek or onions, typically bound with wine or beer, and then all sorts of plants, herbs and offal. We'll recreate them exactly – brew them up in a cauldron or brass pot or pewter vessel – whatever the remedy asks for!

If we find that a molecule, or a peptide, or a combination of these, seems to be a really potent way of killing off bacteria, and we can see how it's doing it, then we can potentially recreate it synthetically in the lab, in order to find new treatments for wound infections that don't require treatment with antibiotics. We can learn from the past to protect our future.

Ben Hutchinson, PhD candidate in Chemistry

CAN WE MAKE SUSTAINABLE FASHION MAINSTREAM?

Can we make sustainable fashion mainstream?

The fast fashion industry is responsible for five per cent of all global CO₂ emissions and produces around 20 per cent of waste water, which contaminates rivers, oceans and soil. If we're going to find a way to address climate change, its impact needs to be reduced urgently.

While sustainable fashion is becoming 'fashionable' in as much as it's talked about, I'm exploring how we can make it 'normal' and something in which we can all participate.

I've always been interested in fashion, but my interest in sustainability came in a roundabout way. I used to design and make jewellery using polymer clay, which is derived from plastic. After I messed up a piece, I didn't know how to dispose of it or how to reuse it. I wanted to get better at making it so I would waste less, or pivot into a completely different business that was less wasteful.

I watched the documentary *The True Cost*, which got me thinking about fast fashion and what living in a more sustainable world might look like. A lecturer then recommended I read *Silent Spring* by Rachel Carson, which really opened my eyes to the damage we do.

The barriers to sustainable fashion are very complex because it's not just about how consumers act but also how brands and the media and governments act. It's a really hard sell to tell people that they shouldn't buy something when they have everyone telling them that they should. And it's not just about what we buy but how we use it. I can buy all the sustainable fashion pieces in the world yet still throw them away!

Social media is such an influential platform and I'm investigating how people can use it to drive sustainable fashion rather than fast fashion, through interviewing a diverse range of influencers and bloggers, and their followers, and analysing social media content and data. The aim is to understand if and how these influencers and media are driving change in the way people think about fashion so that we can apply the brakes to carbon emissions.

Amira Battle, PhD candidate in the Centre for Business, Organisations and Society



Are electric cars the new normal?

Towards the end of my degree I helped launch the University's first electric Formula Student racing team. We built a car from the ground up but none of us knew anything about electric powertrains, so we were basically doing our own research about how to build an electric car! As someone who grew up loving internal combustion engines, it was a turning point.

What's exciting about electric vehicles is that there are still lots of unknowns. The energy density of the batteries is increasing rapidly, and the cost is dropping, which has made electric powertrains more appealing, but they're still not at the level of internal combustion engines. It's also important to keep performance consistent across the life of the car. The life of your phone degrades the more it's charged, and it's the same with a car battery, so another challenge is how to slow down this degradation.

Usually, when you're creating energy optimised batteries they trade off on their power performance. I'm researching split (or hybrid) energy storage, putting energy and power-optimised technologies in the same system, which work together to give an improved overall performance.

I'm looking at how to size this system, how to control it, and how to improve the life cycle of the battery within it. I love understanding how different systems interact. My research means I can draw on my mechanical engineering knowledge while also getting to grips with the electrical and electro-chemical challenges.

In the next 10 years or so, most vehicles sold will have some level of electrification, but this doesn't mean that there will no longer be an internal combustion engine as part of that



system. And even if we could tick all the boxes of battery technology and costs, then infrastructure becomes the biggest challenge. It's expensive to install things such as charging points, so it may not be viable in countries that are less well-off economically. I think that's probably the main reason why electric vehicles won't wipe out the internal combustion engine immediately.

Greg Tzermias, PhD candidate in Mechanical Engineering



“BATH’S PIONEERING SPIRIT IS DISTINCTIVE...

IT’S A PRIVILEGE
TO BE BACK”

IN APRIL WE WELCOMED OUR NEW VICE-CHANCELLOR AND PRESIDENT, [PROFESSOR IAN H WHITE FREng](#). IN HIS FIRST INTERVIEW WITH BA2, PROFESSOR WHITE TAKES STOCK OF RECENT SUCCESSES AND LOOKS AHEAD TO THE FUTURE.

Welcome, Vice-Chancellor! Or welcome back, we should say. Some alumni might recognise you from your time as Professor of Physics in the 1990s. How does the institution it was then compare with the one it is now?
Thank you for your welcome. It is kind of you to say that some alumni might recognise me, since the photos at the

welcome event demonstrated how much I have changed since those days! It is, more seriously, a great privilege to be back at the University of Bath, recognising that it has grown so much since my arrival as a Professor in the Physics Department almost 30 years ago. When I joined the University then, there were 3,742 undergraduate





“
I am impressed by
the support that alumni
provide to students

students, and a much smaller group of campus buildings, some of which I still recognise. To have grown from that level to a student population which now exceeds 18,000, while maintaining – and indeed improving – on quality, is a very great achievement for which the members of the University deserve much credit.

The first 50 years of Bath saw great growth in STEM education, Sports and Arts provision and the positioning of ourselves as a leading UK university. What are the strengths of the University that has allowed that to be the case?

I am acutely aware of three factors that have been at the heart of the University's success. Firstly, both the staff and students have demonstrated such commitment and excellence. The international prizes and other achievements being won by University members, often benefitting from the involvement of alumni, are testament to how special they are.

Secondly, I have been very impressed by the professionalism of the University. The quality of activities and the agility of the organisation have allowed it to position itself very carefully over the years for maximum benefit.

Finally, Bath's pioneering spirit is distinctive. It has an outward-looking style and forward-facing approach that reflect its goals and values.

What impresses you most about the education that the University provides to students?

In my view the style and quality of education here are very special. The students who join the University are highly qualified and on graduating have learnt much and to a very high standard. They are encouraged to achieve at the

highest levels, as demonstrated by the large number of international prizes awarded, including the Association of MBA's award for the top MBA student globally, and the SESAR special prize gained by Team Bath Drones at the European Robotics League. This level of achievement is rare.

Bath students are typically well-experienced, particularly if they have been on placement. The extra-curricular activities are outstanding, with students having won 27 international sporting medals this year alone. Such successes are an indication of how well-rounded they are as people, something ensured and supported by the campus community. These attributes are very special and, I would argue, unique in combination. It makes them very attractive to employers, some of whom have impressed me in recent weeks by their respect for the University, as they have made clear their desire to recruit as many of our students as they can.

What was your experience at university like?

I feel very privileged to have had a university education, and enjoyed my years as an undergraduate and graduate student very much. Like most students, I recognised the challenges of living away from home – and at quite a distance, having come over from Northern Ireland to study in England. I was grateful for the strong and happy family values with

which I was brought up, and which stood me in good stead as I started out away from home.

I enjoyed my field of study greatly, specialising in Electrical Sciences (within Engineering) for my primary degree and carrying on in my PhD by researching semiconductor lasers. My student years have had a huge impact on the rest of my life and, as I think is true for many students today, the friendships I made as well as the academic side of life have been highly significant. As well as meeting my wife Margaret at university, my fellow engineers and academics with whom I studied remain life-long friends, and that is very special.

Nationally and globally there is increasing concern about mental health issues. What is your vision for wellbeing among our staff and students?

There has been a clear growth in pressures on staff and students in universities in recent years for a wide range of reasons – from increasing competitiveness within the sector to the impact of new technologies.

I am pleased that the University has taken steps to respond more fully, with a new separate wellbeing centre being developed to enhance working life at the University and proactively provide greater support to staff, and enhanced opportunities being provided for student counselling.

We are fortunate to have extra-curricular activities that can bring benefit to the wellbeing of members of the University, and the support that the Students' Union provides through the work of Nightline, which my wife Margaret and I recently visited.



I have also been particularly impressed by the support that alumni provide to students through activities such as mentoring. Margaret and I were fortunate to attend the recent Gold Scholars' dinner, and the engagement of alumni there, clearly so successful, was in advance of anything I had previously encountered.

What do you believe are the strengths of research in the University and its challenges?

There is an emphasis on making a difference and this makes research at Bath distinctive. This emphasis and its impact are reflected in the fact that our achievements in rugby and autism research have featured in Universities UK's list of the country's most important discoveries. Our research quality was also recognised in the last Research Excellence Framework, with 87 per cent of submissions judged to be world-leading or internationally excellent.

The challenge will be to increase our research power by increasing the volume and intensity, and I welcome the key new research activities instigated recently (see pp 8–13). Indeed the role of research at Bath is not seen as an end in itself but used in increasingly diverse ways. In recent years, there has been a very substantial change in the scale and role of research centres and institutes within the University.

Take the Milner Centre for Evolution, for example, which is truly world-leading in terms of paper citations and very active in outreach and educational activities. It has developed a new way of teaching

evolution in schools which enhances children's understanding of genetics. The Institute of Mathematical Innovation is seeking to roll out advanced research for rapid take-up by industry. The Institute of Coding is seeking to take digital skills to groups that otherwise would not have access to them. Most recently we were delighted to witness the unveiling of the foundation plaque of the Institute for Advanced Automotive Propulsion Systems, which will act as a major research and translation facility. These are all cases of not just doing new research, but using it in new ways, in most interesting and beneficial manners.

What opportunities are there for Bath to grow its reputation on the global stage?

I have been delighted, in the most recent QS international rankings, to see the University recognised with five subjects ranked in the top 50 worldwide, and sports science now ranked 10th. I believe that there is scope for the distinctiveness of our activities to become more widely appreciated internationally, and the place where leading figures will want to be in the future.

“
Alumni are core
members of the
community



Top far left: Professor White and his wife Margaret

Top left: Claverton Down campus in the 1990s

Left: A recent aerial view shows how much campus has grown

Closer to home, how would you like to see the relationship between the University and the city develop?

My personal view is that one way in which a university can be world-leading is for it to be pertinent locally, as often unique local issues and their solutions can become international exemplars. I am also very aware that the role of a university is often very important to its local community and as a result, it has an associated duty and responsibility to engage and work in partnership with it, such as through opportunities we provide to around 3,000 local children to participate in sporting activities at the University each week.

I have been most grateful to meet several leaders in the region, and for the welcome that I have received from them. In the past year, our staff and students have instigated several new activities, ranging from engagement with schools to more formal liaison activities with business and community leaders facilitated by a new Vice-President of Strategic External Engagement. Established activities such as entrepreneurship have grown substantially. I do hope that these activities will continue to grow in areas where we can contribute real expertise, as such partnerships can lead to significant advances in understanding and achievement, and to enhancing people's quality of life.

What role can alumni play in the future of the University?

It has been an honour to meet a number of alumni recently, and I have learnt much from them. Their role, and indeed that of many alumni, is crucial to the success of the University, and I regard alumni as core members of the community. By actively engaging in activities, by providing advice and guidance, and by contributing financially, alumni allow the University to do things that we simply could not do otherwise. In particular, they allow the University to reach out in new ways to bring benefit, to explore new fields, to bring about partnerships which simply would not be otherwise possible, and they bring immense opportunities to students such as through mentoring and work experience. We are so grateful to you.

I hope to meet many more of you and look forward to hearing your views about how we can take our University forward together.

**DISRUPTIVE TECH,
DISCRIMINATION AND
WHY IT'S GOOD TO FEEL
UNCOMFORTABLE
SOMETIMES – WE FOLLOW
A NEW GRADUATE'S FIRST
STEPS INTO THE WORLD OF
ENTREPRENEURSHIP.**

Words **Rachel Skerry**

FIRST

Nia Simpson grew up watching *The Apprentice* because her dad once worked for Lord Sugar at Amstrad. 2011's winner Tom Pellereau stood out to her "because he was an engineer but had business acumen. Reading up on him, I found out he went to Bath. I saw the degree he did and thought, 'wow, that's really cool, maybe I could do that as well?' He was one of the biggest reasons why I came here."

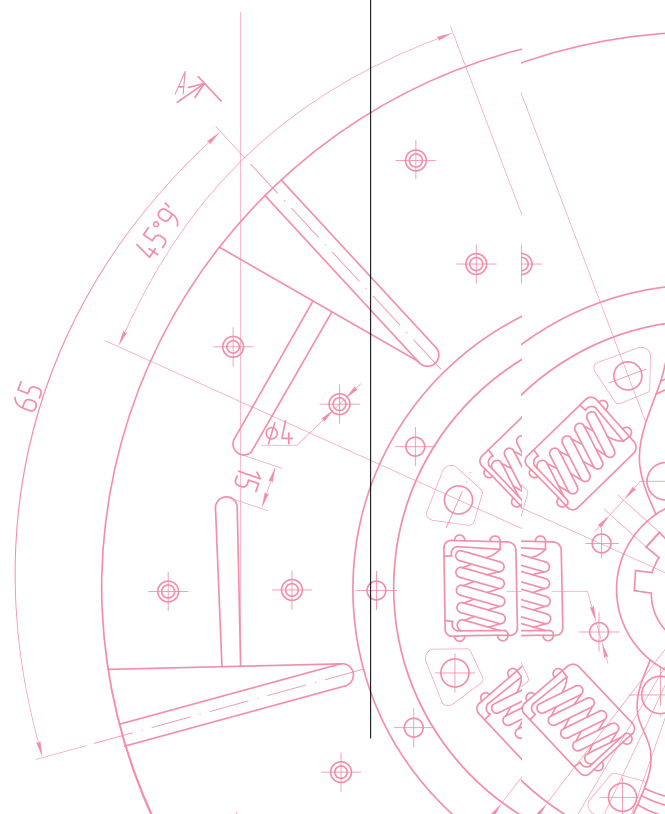
Before he invented the Stylfile, Tom studied Innovation & Engineering Design at Bath, graduating in 2002. I ask Nia what happened when they were introduced at an alumni event. "To be honest, I felt quite uncomfortable," she recalls.

Thankfully, their encounter wasn't one of those awkward occasions which fulfil the saying you should never meet your

heroes. "He told me that when he was on *The Apprentice*, Lord Sugar changed his mindset to 'if you have the idea, what can you do now so you can start making money tomorrow?'" Nia explains. "It was cool for him to say that, even though it was an uncomfortable thing for me to hear. It challenged me completely. I could tell that he was really passionate about what he did, and he had a lot of experience."

Nia's own invention came from her final year project studying the same course as Tom. "I'm passionate about user-centred design and I really wanted to use that to figure out how I could create a meaningful product," she says.

Compact Cane is the first discreet digital white cane for people with visual impairments. Nia undertook market research with visually impaired students on campus in order to develop her



**"IT WAS IN THAT MOMENT THAT
I REALISED, THIS SUCKS!"**

STEPS

prototype. During one session, a student told Nia that she had a job interview, but wasn't going to take her white cane with her because she was concerned she would be treated differently to other candidates, even discriminated against.

"It was in that moment that I realised, this sucks!" Nia recalls. "The traditional white cane can give you some benefits but in other ways it can really hinder you. My heart starting pumping. If this was me, I'd want a solution, I'd want something to help me. So I was, like, 'let's do something about it!'"

Compact Cane, which uses invisible ultrasonic waves to detect obstacles in real-time, has now won Nia a coveted £15,000 Innovation Award donated by graduate His Excellency Khalil Foulathi (BSc Economics 1975, Hon LLD 2011). It's a 12-month investment to enable her

**"A CHALLENGE IS A TEST
OF YOUR JUDGEMENT"**

to undertake further research and development and turn her invention into a business.

A growing number of Bath graduates benefit from the same opportunity. Thanks to alumni support, fellow Innovation Award-winners are developing business ideas as diverse as electrifying bicycles, converting human waste into cooking fuel and recycling flowers discarded at Indian temples. Computer Sciences graduate Ashton Clapp (2016) has even gone so far as to build a thriving tech business right here in Bath, employing nine people including other Bath graduates. He describes receiving his Award as like having someone plant a seed.

An Innovation Award doesn't come out of the blue, however. Hundreds of talented students take part in a pipeline of corporate partner and alumni-backed

activities and competitions every year – from Dragons’ Den to Apps Crunch to joining student societies like Bath Entrepreneurs – which they manage to squeeze in around their studies. The very best compete to receive an Innovation Award once they graduate.

One advantage the Innovation Award brings is membership of SetSquared, the world’s number one university-based business incubator, which is located at the University’s Innovation Centre in town. The SetSquared team helps Nia develop practical skills such as financial modelling, and unlocks access to advisers in the local business community who, like Tom Pellereau, aren’t afraid to put her on the spot. “I value people who say ‘this is a really good idea but let me challenge you on a few things’,” she says. “That really stretches me. I definitely need people who are, like, ‘there are some holes in this, let me help you’.”

Being challenged is clearly important to Nia, even though she sometimes finds it uncomfortable. I want to know whether the ability to face up to and overcome



challenges is a prerequisite of success for an entrepreneur.

Dimo Dimov, the University’s Professor of Innovation and Entrepreneurship, thinks so. “In the words of Mark Twain, ‘good judgement is the result of experience and experience the result of bad judgement’” he says. “A challenge is a test of your judgement.”

Dimo says entrepreneurial success stems from creating value for others, which he sees as having three key ingredients. “The first is what I would call defining the value space, for example, solving a pressing problem or making significant improvements to something that exists already,” he explains. “Next is being able to configure this activity as a viable business. And finally, it’s about gaining the support of others. All these are beset by challenges and it is precisely these challenges that define one’s path to success.”

I ask Dimo what part teaching plays in this process. “Achieving success as an entrepreneur is the end of a journey,” he explains. “It’s fuelled by drive, passion, and curiosity and built from exercising learning, business, and leadership skills. The former can’t be taught, but they can be enkindled. The latter can be learned. To know something is to be able to do something.”

Our management students acquire this knowledge of business and leadership skills through the classes Dimo teaches. By contrast, Nia’s learning journey as an Innovation Award-winner has been less structured. “My perception of teaching is that I sit down and people tell me stuff: ‘this is what an entrepreneur does’. I don’t think it’s been like that for me,” she reflects. “It’s more like ‘I’m going to give you a little bit of help, provoke you, and you go off and figure it out’. There are times when I’ve felt I

“IT HAS COMPLETELY ROCKED MY WORLD”

“THE APPRENTICE TAUGHT ME TO ACT NOW. NOT TOMORROW, NOT ONCE I’VE DONE A BIT MORE DEVELOPMENT. BUT NOW. SO CHALLENGE YOURSELF – WHICH BUYER OR CUSTOMER COULD YOU CALL NOW? YES THEY MAY LAUGH, BUT MORE LIKELY THEY’LL IMPROVE YOUR IDEA BIG TIME.”

TOM PELLEREAU, ALUMNUS AND WINNER OF BBC’S THE APPRENTICE 2011

don’t know what to do, and I think, that’s where learning how to be an entrepreneur comes from because you have to go and try things and make mistakes and learn from that.”

Dimo thinks that entrepreneurs like Nia, who are at the start of their journey, thrive in environments that set challenges, connect different perspectives, provide safe spaces for experimentation and help people share their knowledge and experience. It’s the kind of environment that the University aims to create in its new Entrepreneurship Lab, part of the School of Management building which will open in 2021. The Lab will make it easier for new graduates to work together to develop their business ideas, whatever subject they’ve studied. They’ll have the benefit of mentoring and coaching from academics and experienced entrepreneurs, in harmony with the SetSquared

incubation network, the Students’ Union enterprise programmes, and research expertise from people like Dimo in the School itself.

Nia acknowledges she’s been fortunate to grow up in a family which is supportive of enterprise, and study a subject that has stretched her, at a university that has encouraged her to innovate. But it’s the confidence that her Innovation Award has sparked within her which really shines through.

“It has completely rocked my world, changed my life,” she says. “I had no idea I was going to do something like this, but this is what I should be doing. The fact that someone believed in an idea and was able to give money, you don’t realise how much impact that has made in terms of the trajectory of my life.”

I ask her to reflect on how she’s changed in the last six months. “I’m very aware of

what I’m good at now,” she says. “And I think I’m a lot more OK with uncertainty, I’m not as worried about it.”

At the time of our meeting, Nia had been chosen to represent the University in the first stage of the Santander Entrepreneurship Awards, a competition open to all of Santander’s 83 UK university partners. Nia made it to the semi-finals and although it wasn’t the Lord Sugar moment she had been hoping for, she’s even more ready for the next opportunity. “The experience built my confidence in pitching and I got great feedback and connections,” Nia tells us. “Now I’m working to get myself in front of the right people who can help fund or accelerate the company.” We wish her and Compact Cane the best of luck.

Supporting Innovation

If you’d like to support innovation and entrepreneurship at Bath please get in touch by emailing alumni@bath.ac.uk or calling 01225 386824.

SEEKING SANCTUARY

DISCOVER HOW BATH IS PROVIDING
SUPPORT AND A SAFE HAVEN FOR
STUDENTS FROM CONFLICT ZONES.

Words **Jodie Tyley**

Terrified for her life, Ghazala frantically crawled through the field as bullets fired overhead. She and her classmates were on their way home from school when they became caught in the crossfire. Later that day, her father took one look at her muddy clothes and frightened expression and said, "No more school."

It was 2011 and demonstrations against the President of Syria had escalated into full-scale civil war, which continues to this day.

"It was a very uncertain time and everyone was staying at home," Ghazala recalls. "Then things got worse – food stopped coming to the village, road blockages meant people couldn't get to hospitals, there was no way to work and people supported each other through it."

Her village only had one doctor, who was overwhelmed by patients. "He asked my mum if she knew any nurses or people willing to learn and I jumped at the chance." Aged 17, Ghazala became a nurse – sewing cuts, treating scorpion stings and acting as a midwife to women in labour. "It was tough but the experience brought out the best in me and I realised I wanted to be a doctor.

I was hoping to finish medical school when I was 21," she says. "I wrote a timeline of where I wanted to be each year and then the war started and I learned not to plan too far ahead."

Her dream of going to university was derailed when she caught the attention of Syrian government forces. "Everyone who had some sort of medical experience was investigated," she explains. "They searched my house looking for medications and people I had been treating, in case I was helping the other side. It got to the point where I didn't want to be a danger to myself or to my family." Despite her father's protestations, Ghazala fled her homeland, leaving her parents and nine siblings behind.

Ghazala is one of more than 70 million people whose lives have been uprooted due to conflict, violence and persecution worldwide. For many, losing their home also means losing their security, livelihood and access to education. Some universities in the UK are stepping in to help.

Here at Bath we offer non-repayable bursaries for refugees and guaranteed accommodation throughout their course. A dedicated member of staff



"The war started and I learned not to plan too far ahead"

GHAZALA



in Student Services provides personal support and one of the 50 Gold Scholarships we award each year is reserved for refugees, like Ghazala. "I can't tell you how happy I was to know I was one of the lucky ones to get a Gold Scholarship," she says. "I felt that I was looked after, in safe hands to start my degree." Ghazala is studying Biomedical Sciences, finally able to plan ahead and pursue her ambitions.

A few years ahead of Ghazala is Farishta Hellali. She came from Afghanistan to study an MSc in Advanced Management Practice at our School of Management thanks to a scholarship from the Vice-Chancellor's Strategic Endowment Fund.

After graduating in 2013 Farishta returned home, despite her family urging her to stay in the UK where it was safe. "I decided to go back because I wanted other Afghans to benefit from the scholarship," she says. "My goal has always been to make a positive change in my country."

Back in Kabul, Farishta is now the Deputy Chief of Party for the Women's Leadership Development programme, which helps young women gain the knowledge, skills and networks they need to become future leaders.

"That one year at Bath changed my life," she adds. "I learned so much and made great friends with people from around the world. We all started at Bath with different approaches, different cultures, and we went away with new perspectives. I've contributed by showing people the good side of Afghanistan. The experience made me realise that underneath we are all the same – we're all just normal people trying to do something good."

Returning to Afghanistan was not an option for PhD student Noorullah Kuchai. He had been working as a shelter officer for the United Nations High Commissioner for Refugees (UNHCR), supervising the construction of thousands of semi-permanent dwellings for displaced communities.

He knew more than most about the hardships experienced in refugee camps and wanted to help. As one of the millions of Afghans who fled during the Soviet occupation in the 1980s, Noorullah and his family were housed in a refugee camp in Pakistan.

But what was meant to be a temporary stay turned into more than a decade of living in a tent, as no one was allowed to build a property.

"My goal has always been to make a positive change in my country"

FARISHTA HELLALI

*Zaatari
refugee camp
in Jordan*

When they eventually moved back to Afghanistan post-9/11, they set about rebuilding the family home. "There was a construction boom and everyone wanted to study engineering to help rebuild the country. I wanted to take part." Then, he explains, things went wrong. "Extremists were targeting aid workers. Negative propaganda started to spread across the villages that we were actually collecting information for the government and the International Security Assistance Force. I started receiving threat letters and phone calls from extremists saying I should work for them, so I was forced to flee."

When Noorullah was eventually granted refugee status in the UK, he was able to start reconstructing his life. A big moment came when he saw an advertisement for a PhD researcher within the University's Department of Architecture and Civil Engineering. "It was similar to my previous job but this time I would be helping to develop the science behind the shelters so I could make an impact globally," he explains.

"When I got the email saying I was selected it was such a happy moment but there was no one to share it with! I called my mother back home and we cried tears of joy."

Noorullah is part of the University's multi-million pound Healthy Housing research project, which aims to improve living conditions in refugee camps by designing low cost and easy to construct shelters that can offer comfort, privacy and security for residents. It's an opportunity that he's intent on making the most of. "I'm in one of the best universities in the UK, in a beautiful city with amazing colleagues and supervisors – I can't ask for anything more and that's what drives me to work hard."

In the future Noorullah would like to return to the aid sector. "It has become a dream job for me," he says, "and helping others is my motivation."

Healthy Housing is not the only research related to this area. Doctoral researcher Isabelle Schafer from our Department of Social and Policy Sciences is examining the role universities play in the integration of forced migrants. "There's quite a lot of research on the barriers to higher education but a lot less has been done on what happens while they are studying," Isabelle explains. "What are the experiences of forced migrants in higher education? How are universities organised to support them during their studies?"



"I called my mother back home and we both cried tears of joy"

NOORULLAH KUCHAI



"Scholarships provide access to education. I feel like it's the only thing I've got in my life"

MOHAMMAD SEDDIQIAN

One of the major barriers to education, particularly for asylum seekers in the UK, is affordability. Unlike refugees, they are not usually eligible for student loans and must pay international tuition fees, making scholarships all the more important.

"I think many asylum seekers find themselves in limbo," she adds. "They're not normally allowed to work and if education is not an option for financial reasons, it must be very frustrating. They might have all the energy and capacity to study and develop their skills but they can't do it because they don't have the money. This means that scholarships are absolutely crucial for them."

The student society STAR (Student Action for Refugees), a Bath branch of the national charity, aims to support refugees and asylum seekers in the local community by volunteering to help refugee children with their homework and organising social and fundraising events. It was through the STAR network that Mohammad Seddiqian discovered the Sanctuary Scholarship at Bath. Originally supported by the Alumni Fund, this offers two scholarships for postgraduate master's programme students who are seeking asylum in the UK, waiving the cost of tuition and providing a £15,000 bursary to

help with course-related and living costs. "Scholarships like this provide access to education, which is so important to me," he says. "I feel like it's the only thing I've got in my life."

Mohammad always enjoyed school but his education was cut short by the Taliban regime. "There weren't any teachers and the subjects changed – we didn't have literature or science, just religious text books," he explains. "They stopped other things too; hospitals didn't have enough medication, the economy was bad and people were really struggling. One night I remember hearing lots of explosions and firing. We went to a basement where we used to keep cattle on our farm and took refuge for a night or two. When it was over my father went to the city to find out what had happened. He said there were people lying dead in the streets. We left for Iran after that and it was good, for a time."

As Afghan citizens, Mohammad's family weren't allowed to work or buy a house or a vehicle, or even a sim card for a phone, he says. "But my parents were happy that at least we got an education. As farmers, my father and I didn't have the same skills as people in the city so I was relying on education so much. When I heard the news

that the Iranian government [under President Mahmoud Ahmadinejad] had banned Afghan students from going to university, I was so upset."

It has now been nine years since he left Iran in search of a safe place to live and he's still awaiting a decision from the UK Home Office. The Sanctuary Scholarship means that he can study for an MSc in Medical Biosciences and focus on the future. "I would like to do a PhD in cancer research after I finish my Master's and the Sanctuary Scholarship puts me a step closer to achieving my dreams," he says. "I am so thankful for this amazing opportunity. I would like to be in a position in future where I can support scholarships like this one; they give people like me so much hope."

Supporting Sanctuary Scholarships

If you would like to support Sanctuary Scholarships, please get in touch by emailing alumni@bath.ac.uk or calling **01225 386824**.

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BATH REUNITED

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The Proposed

Bath University of Technology

Prospectus 1966/67



1966/1967: Our Royal Charter was granted in 1966, officially establishing the Bath University of Technology, and our first students and staff began using the campus. This was the very first prospectus, with details of

15 undergraduate courses on offer. Today students can choose from over 190 undergraduate degrees in subjects including engineering, humanities, management, science and social science. That's not to

mention over 80 postgraduate taught subjects, including three online MSc courses!

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

BA2 Extra



MEET THE TEACHER

From Claverton Down to Silicon Valley, alumnus **Andy Warr** returns to campus to speak with students and catch up with the Head of the Department of Computer Science **Eamonn O'Neill**.

When Andy Warr graduated with a degree in Computer Science in 2003, the iTunes store had just opened and LinkedIn and Android were founded that year. Now he returns to Bath at a time when Professor Eamonn O'Neill is launching the UKRI Centre for Accountable, Responsible and Transparent Artificial Intelligence. The Centre will train at least 60 PhD students in the ethical use of AI.

Much has changed and since completing a PhD in Computing in 2007, Andy has worked for some of the biggest names in the industry. As a researcher and software engineer for Microsoft, Google, Instagram and now Uber, he has helped to develop features and products that are used by hundreds of millions of people every day.

Andy still keeps his connection to Bath and has hosted winners of our student Apps Crunch competition at Facebook HQ in Silicon Valley, and has given talks on campus when visiting the UK. The latter also provides the opportunity to meet with his former lecturer-turned-PhD supervisor and now firm friend, Eamonn.

AW I've always loved building things from a young age playing with Lego Technic and I think computer programming was a natural progression. I visited a bunch of universities and Bath really stood out – the picturesque landscape, the good reputation for science – it was an obvious choice.

You were the lecturer for programming in my first year and I remember you had a very relaxed, carefree attitude – very different from some of the older, bearded professors.

EO I remember you were talking about wanting to do a PhD very early on in the undergraduate programme. From the second year you asked me about the process, which was very unusual.

AW I think there were a few factors at play – I wasn't sure if I wanted to become a software engineer, and I'd taken a class on human computer interaction (HCI) and found that very interesting. In 2003, during my undergrad degree, you were chairing the British HCI conference and you had a project for me to work on. I was super excited by it – the idea of making a mobile conference app. That fuelled my interest in doing a PhD.

EO People forget what it was like in 2003 – the first iPhone wasn't launched until 2007 – and for someone who's just finishing a degree to lead on a project like that was great. That was industrial grade work combined with supporting an academic conference.

AW When the PhD officially began, one of the first things you asked me to do was to read conference proceedings because I didn't have a topic at that point. We met once a week and you were a sounding board for my ideas, which was a great way of pushing

forward. It led me to the topic of creativity and mobile computing, which was unique at the time.

Every PhD student-supervisor relationship is different but one thing that was special about ours was that we were both really into fitness so eventually our one-on-ones became run-on-ones! I have to admit that I always felt bad because I'd ask the questions and you would spend most of the time talking while trying to run.

“PhD students are the engine of research – they're driving it forward”

Eamonn

EO It was four miles to the bottom of the hill...

But seriously, every good PhD student should ask questions and challenge people, they should be pushing the boundaries. PhD students are the engine of research – they're the ones driving it forward.

There are different approaches to PhDs and one is that a supervisor will have a project they want to do, so they'll advertise it and look for people to apply to carry out that piece of work. I much prefer it when someone comes to me with a cool idea that they want to research. The rest we can figure out afterwards.

AW Students have the ideas but universities can make them happen.

I remember in my first year you got hold of some of the first phones with Near Field Communication readers through a partnership with Vodafone and Nokia. This method of wireless data transfer took another 10 years to come to commercial market but we were experimenting with them way back when.

I thought I would stay in academia after finishing my PhD. I had the opportunity to do a postdoc at Oxford, but that's when I started questioning the immediacy of the impact of my work. When I was at Bath the outputs were more tangible, but now I was spending a lot of my time writing research reports. It was at that point I decided I wanted to work in industry.

“Students have the ideas but universities can make them happen”

Andy

EO I think impact is one of the things that has changed in the research culture of the UK over the past decade. You were ahead of the game in trying to relate research to real-world impact because now that's what researchers are increasingly obliged to do.

AW I think if I had the opportunity to stay at Bath then my life could have been very different than it is today. It's always a pleasure to come back and catch up. You started off being someone to talk to about computer science, to being a supervisor who helped me through my final year dissertation, to being a PhD supervisor and a collaborator on research, and then through all of this, a friend who I still reach out to for advice.

EO You're the development progression I want to see. I've always felt that working with PhD students is the thing I enjoy more than any other aspect of my job. To see people like you getting through the PhD and then going on to do great work afterwards just reinforces my commitment. And now I get to be director of a doctoral training centre for the first time! I feel very privileged that I get to do the thing I love doing and now I can do that on another scale.



AW It's a really exciting time to do a PhD. If I were to do one now I'd be interested in studying the relationship between people's wellbeing and technology, or people's relationships with artificial intelligence systems and how they develop. When you look at Alexa and Google Home, for example, they're basically personal assistants. I also feel like companies such as Uber and Lyft are the only ones bridging the physical and the digital world and I think there's a lot of opportunity for research into other domains.

“Research must be related to real-world impact”

Eamonn

I look forward to meeting the new doctoral students when I'm next in the UK and I'd like to take this opportunity to thank you once again, Eamonn, for everything you've done for me.

EO Thank you, because I've enjoyed it every step of the way.

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

Renowned researchers, sports champions and one of the world's greatest ballet soloists are amongst those recognised for outstanding contribution to their fields. 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.



“Be curious. Don't be afraid of failure. These are the things that make you grow stronger. Make use of your time in life.”

Fernando Montaña



“I have great memories of working at the University of Bath and am very touched by the award of an honorary degree. I still live in the area and meet up with former colleagues from time to time, and so I still feel a connection. Next summer I look forward to being the resident on the campus for a conference and seeing more intimately how it has developed.”

Dame Jocelyn Bell Burnell



“I know from my time at university that studying for your degree can be equally the most enjoyable time in life and the most challenging. I encourage all the students to be proud of what they've accomplished so far and keep seeking and striving to find their passion in life, with the hope that they'll find happiness whether that is in academia, industry, sport or some unknown path, yet to be discovered.”

Kelly Gallagher

This year's honorary graduates in full: Founder and CEO of AKQA Future Academy **Ajaz Ahmed MBE**; women in STEM advocate and BCS Vice-President and Trustee **Gillian Arnold**; world-leading astronomer and former Dean of Science **Professor Dame Jocelyn Bell Burnell FRS**; world-leading astronomer and expert in the formation and evolution of galaxies **Dr Natascha Förster Schreiber**; Paralympic skiing champion and

alumna **Kelly Gallagher MBE**; former Chair of the Bath Institute for Rheumatic Diseases **Dr Nick Hall**; CEO of Diamond Light Source **Professor Andrew Harrison**; leading figure in mathematics education **Professor Dame Celia Hoyles DBE OBE FIMA**; Speaker of the National Assembly of Namibia and founding Vice-Chancellor of the University of Namibia **Professor Peter Katjavivi**; Royal Ballet soloist **Fernando Montaña**; leading

Intellectual Property Barrister and alumnus **Eur Ing Dr Brian Nicholson QC**; English international cricketer and World Cup winner **Anya Shrubsole MBE**; Professor of Biomedical Materials and Regenerative Medicine at Imperial College and alumna **Professor Molly Morag Stevens FREng**; RIBA Stirling Prize-winning architect and alumnus **Steven Tompkins**; former English international cricketer and mental health campaigner **Marcus Trescothick MBE**.

“It's a great honour to receive this recognition and to be back in the city where I spent so many of my formative years. The University has such a strong reputation when it comes to sport, science and health and it's the applied nature of everything that it does in these fields that makes me excited about the association I hope to forge in the years ahead.”

Marcus Trescothick



THE NEXT BIG THING

We asked our Facebook followers: what was the hot new thing on campus while you were at Bath?
Join the conversation @bath.alumni.community



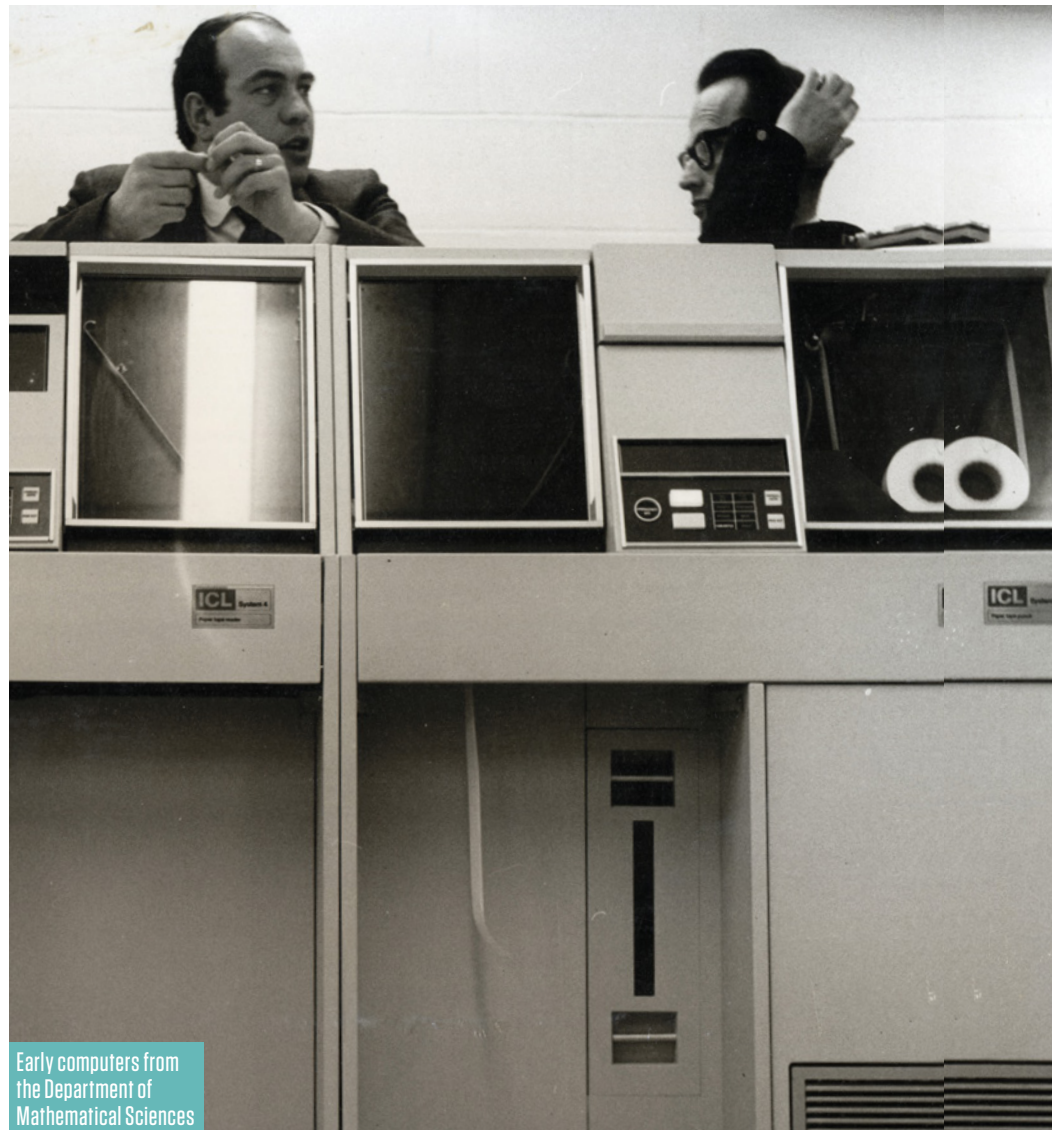
The Arts Barn opened in 1975

"The library was completed during my final year! We had to request items from storage and I think there was something like a four-hour turnaround... and of course no internet (as we know it today)! It was challenging when I was writing up my Honours project, but I'm sure that was nowhere near as challenging as keeping track of everything in the library! The staff did an amazing job."

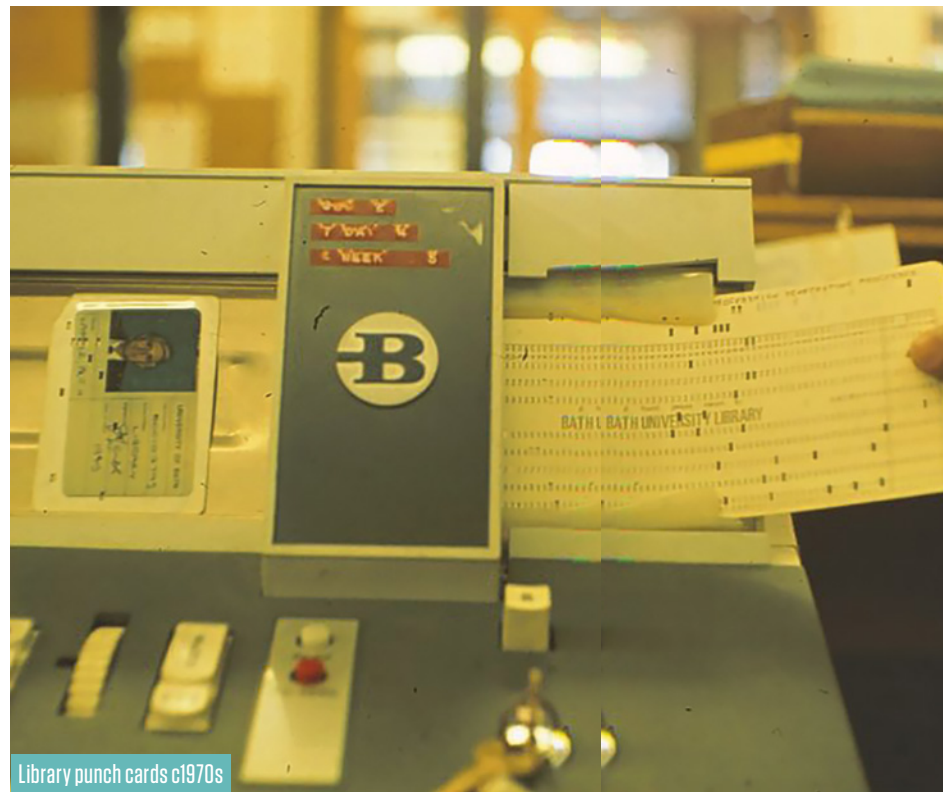
Claire Huntley
(BSc Applied Biology 1996)



The Library refurbishment, 1996



Early computers from the Department of Mathematical Sciences



Library punch cards c1970s

"In 1976 there was a room full of keypunch machines for computer programming. Your decks of punch cards were collected every hour and then executed on the machine. If you were lucky, your programme compiled without any errors, you got the results and your deck of cards (in the right order!)."

Jonathan Mead
(BSc Chemical Engineering 1980)



Graduation ceremony taking place on the tennis courts, 1999



The 25-metre pool

"I was here from 1996 to 2000 and the tennis courts were built in that time. In fact, our graduation ceremony was held there (much to my mum's horror!). I remember the 25m pool and the Arts Barn."

Ali Bevan
(BA MLES German ab initio Italian 2000)

"The year before I arrived, the University had spent many tens of thousands of pounds on adding machines for the maths lab. With the advent of handheld calculators, the adding machines just sat there forlornly."

Jeremy Smith
(BSc Statistics 1980)

"6E. I was based in 4E so we had a building site next door! I still remember that Spike magazine had a competition to name the new building and announced the winner as 6 East, 'combining the logical exactitude of the University with a hint of the Orient!'"

Tim Lee
(BEng Manufacturing Systems 1990)



Campus, 1967



6 East, completed in 1988



Downstairs in the SU

"The SU was completed the summer just before I joined. I remember coming for my interview and the students being very excited about it!"

Gemma Kate Rawlings
(MPharm Pharmacy 2014)



Benson Pang (BSc Economics 2009) is Resourcing Manager for JNL Consulting. He also volunteers for the Hong Kong Chapter – one of our international alumni groups that help bring fellow Bath grads together.

What are your favourite memories from University?

When I secured a placement at UBS in London after deciding to cancel my flight back to Hong Kong so I could go to the interview. I was doing my econometrics coursework when I received the call that I had been successful – it made my day. I still share my experience of that placement year with alumni and current students in Hong Kong a decade later!

Another highlight was the Chinese Student Society winning the Best Cultural Society when I was President. I had the opportunity to meet like-minded students from different countries, backgrounds and races, and share Chinese culture, while also learning a lot from them.

What surprised you from your recent visit to campus, after 10 years?

The number of new buildings and facilities built over the years is absolutely

amazing. The students nowadays are so very fortunate to enjoy them! I'm looking forward to the completion of the new School of Management building and it could be a reason why I may consider returning to study for an MBA in 2021!

What's the best thing about Hong Kong?

Hong Kong is an international financial hub which is very vibrant and diverse. The best thing is the food and nightlife that the city offers. However the long working hours means it can be quite stressful. Visiting Bath has made me realise how much I miss the fresh air, space and tranquillity.

Can you tell us about how you became Membership Director of the Hong Kong Chapter?

I returned to Hong Kong in 2011 and attended a couple of events organised by the Hong Kong Alumni Chapter. I felt they were an amazing group full of fun and passion so when they invited me to join them I happily took up the role of Membership Director in 2013. I enjoy meeting interesting alumni and sharing my experience with young graduates.

What does the position involve?

My role involves coordinating events with

other committee members in the Hong Kong Chapter with the aim to promote our community to Bath alumni, as well as other alumni Chapters in Hong Kong. Ideally, I would like to create a supportive, encouraging, open platform and network for alumni to help each other and keep their sense of belonging to the University.

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

Don't hesitate! You will open up yourself to a diverse group of professionals who might be able to help you personally or professionally, simply because you are a University of Bath graduate too.

Who do you most admire?

Lifelong learners who are smart yet humble.

How do you relax?

I practise meditation and mindfulness exercises.

What's your favourite place in Bath?

Pulteney Bridge and the Weir.

We hold events worldwide so local alumni and placement students can get to know one another. If you'd like more information please email alumni@bath.ac.uk

More than
30,000
alumni live outside the UK

BATH'S BEST NEIGHBOURHOOD

Eve Alcock, Students' Union President
(BSc Psychology 2018)

Oldfield Park has played host to some of my most formative years. Its winding beige streets, hidden alleys and welcoming feel has offered a home from home for many students over the years. Though perhaps contrary to the narrative in the local press, the sense of community is still alive and kicking amongst the students and their permanent resident neighbours.

In my second year I lived next to a wonderful lady who ran her own childminding business. A lovely neighbour – not least because of the number of Amazon packages she took in for us. It was always comforting to come home from lectures to high-pitched squeals in the next-door garden and a pleasure returning various plastic toys that made their way over the fence.

In my final year an increasing number of socks and underwear disappeared from our garden. One day someone dropped a very sweet and apologetic note through our letterbox explaining that their new and excitable kittens had accumulated an array of undergarments from the whole street, which they were eager to return to their rightful owners!



Eve on Moorland Road ▶



With so much to explore, Oldfield was a Pandora's box of adventures waiting to happen. I remember squeezing through a narrow kissing gate and stumbling upon Brickfields Park, shocked at the vast expanse of green space hidden from view by rows of houses. I scrambled up the climbing frame to the viewing point, able to gaze all the way across the river right up to Lansdown.

By following the anomalous, sweeping green bridges over the residential roads, it felt like I was stepping back in time. Two long, disused railway tunnels. The temperature plummeted as my pace quickened, moving towards the light at the other end while eerie classical music echoed around the walls.

Then there's the famous Moorland Road. We undertook regular charity shop hauls; the same diligent shop volunteers offering their assistance as you browse the crockery and choose yet another oversized Sports Direct mug, given your last one is too tea-stained to rescue. And yes, obviously you need that black and white striped

top because what else are you going to wear to the cops and robbers social the following week?

Endless reservations at Panahar – the holy grail of student life: curry with a 'bring your own booze' policy. Any opportunity to bring your own Thatcher's cans to the dinner table to complement the lime pickle they give you. And Herbies – oh Herbies. The ever-reliable chippy on the corner of Herbert Road. If you were to close your eyes, smell the vinegar on your chips and hear the incessant wail of the seagulls that swarm Bath's streets, you'd be forgiven for thinking you were by the coast if it weren't for the lack of fresh sea breeze.

Oldfield Park was kind to me. At a time when young adults are figuring out what to do with their lives, it offers safety, community and wonder in its streets, creating lifelong memories in the hearts of those who get to call it home, if only briefly.

Do you agree? Let us know!

✉ alumni@bath.ac.uk

🐦 [@UniofBathAlumni](https://twitter.com/UniofBathAlumni)

📘 [@bath.alumni.community](https://www.facebook.com/bath.alumni.community)

A group of 1978–82 alumnae celebrate 40 years of friendship

“The campus tour was a real treat. It’s impressive how much development there’s been, and despite all the changes the heart of the Uni is still there.”
Louisa Coates (BSc Sociology & Social Policy 1982)



BATH REUNITED

“It was amazing to see how much the campus has developed and great for my children to spark their interest in university. They especially enjoyed the bugs! Here’s to the next 25 years!”
Alethea Copland (BSc Natural Sciences 2003)

Staff, alumni and their families celebrated 25 years’ of Natural Sciences at Bath with cake and creepy crawlies on campus



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



Current and past members of BUST strike a pose on the dancefloor

The show goes on! Celebrating 50 years of BUST

Over 100 current and former members of the Bath University Student Theatre society met on campus in February to celebrate 50 years of student theatre at Bath. Attendees reminisced over the Archives with a curated display of posters, pictures and programmes dating back to the late 1960s. Later that evening BUST committee members welcomed alumni and students to a black-tie reception at the Claverton Rooms.

The star of the show was Pat Bishop (Honorary MA 1986) who joined Bath in 1974 as Director of Drama and the Arts, forming the University Orchestra and Choir, as well as a number of fine arts courses. Her speech reflected the love and passion that she still holds for student theatre at Bath. Now aged 97, Pat remains an active performer.

“I would like to say how delighted I am to be here tonight and to meet so many of you past students who loved being in productions. That’s what it’s all about.”
Pat Bishop, ‘Mother of drama at Bath’



Travelling south

Roy Smither (BSc Biological Sciences 1965–69) and his classmates were some of the very first students to study on campus. “The University of Bath is the place that shaped our lives,” he says. “We loved returning to campus to celebrate our 50th anniversary since graduation, having spent four years ‘at home’ in what is now 4 South.”

Back then, the Bristol College of Science and Technology was transitioning to the Bath University of Technology, and 4 South (then known as the Preliminary Building) was the first to be completed.

Roy was one of 19 graduates of Applied Biology in 1969 – a number that has grown over the years. In 2018 alone we welcomed 97 Biology grads into our alumni community!

“You don’t just get education and qualifications at Bath, you also make friends that last 50 years.”

John Selby (BSc Chemistry with Industrial Training 1969)



John and classmates gather outside 1 South, 50 years since graduation



Alumni from the class of 1969 (Applied Biology and Biochemistry) came back to campus for their 50th reunion

WE CAN HELP YOU ORGANISE YOUR OWN REUNION!

Who to invite

Do you want to reunite your course group, society, sports club or flatmates? We can help track them down.

Things to do

You could enjoy a campus tour, department visit, sports game or have lunch on campus.

Staying overnight?

You can even sleep on campus! Alumni get 10% off guest accommodation prices.

Get started

Complete the online form on our reunion page go.bath.ac.uk/organise-a-reunion and we’ll put together the invites.

Email alumni@bath.ac.uk with any questions.





WE ARE CHANGING THE WORLD FOR THE BETTER

WILL YOU JOIN US?

Over 1 million people die every year from preventable diseases. Up to 50% of vaccines are wasted globally.

We are developing a way to store and transport vaccines without refrigeration, to increase the availability of life-saving immunisation programmes around the world.

Be part of Bath forever with a gift in your will
Legacies@bath.ac.uk



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