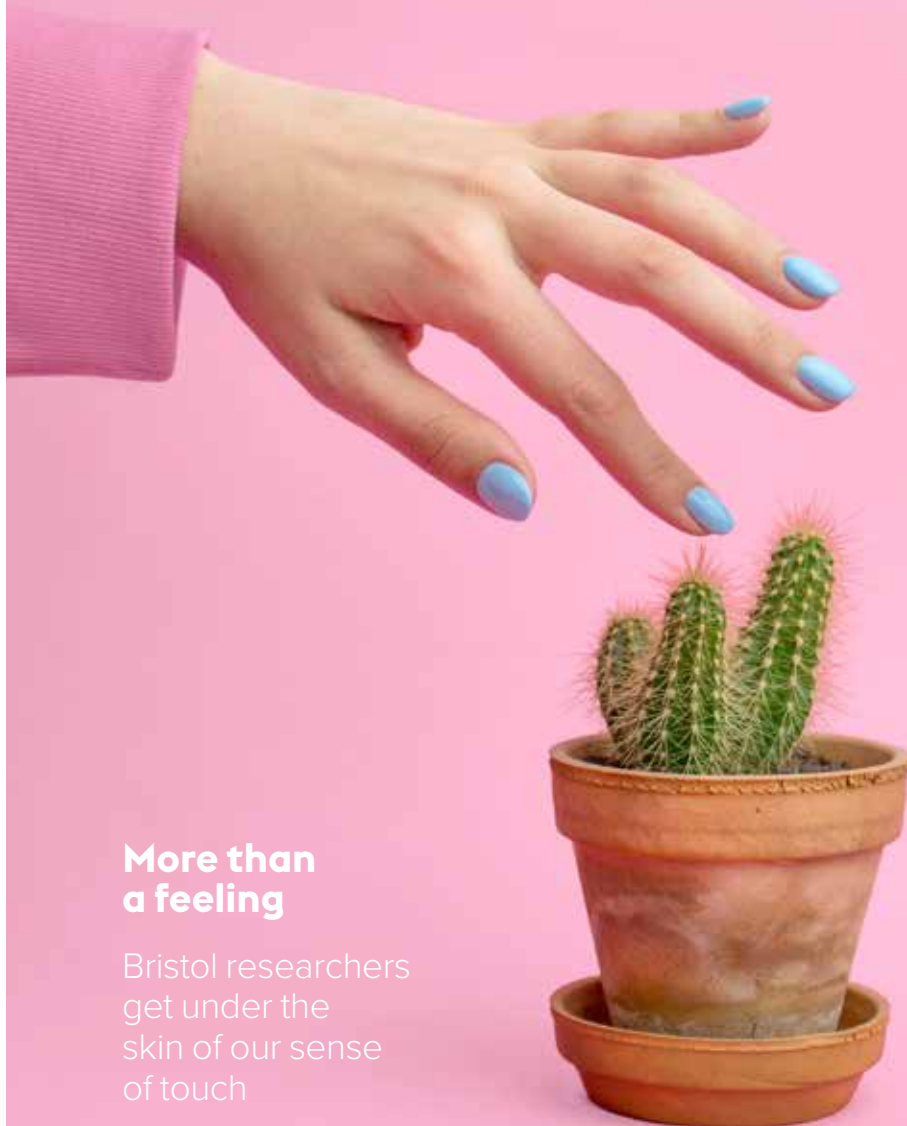


Nonesuch

Summer
2022



More than a feeling

Bristol researchers
get under the
skin of our sense
of touch

Life Lessons

Alumna Kalpna
Woolf shares her
food for thought

After Shock

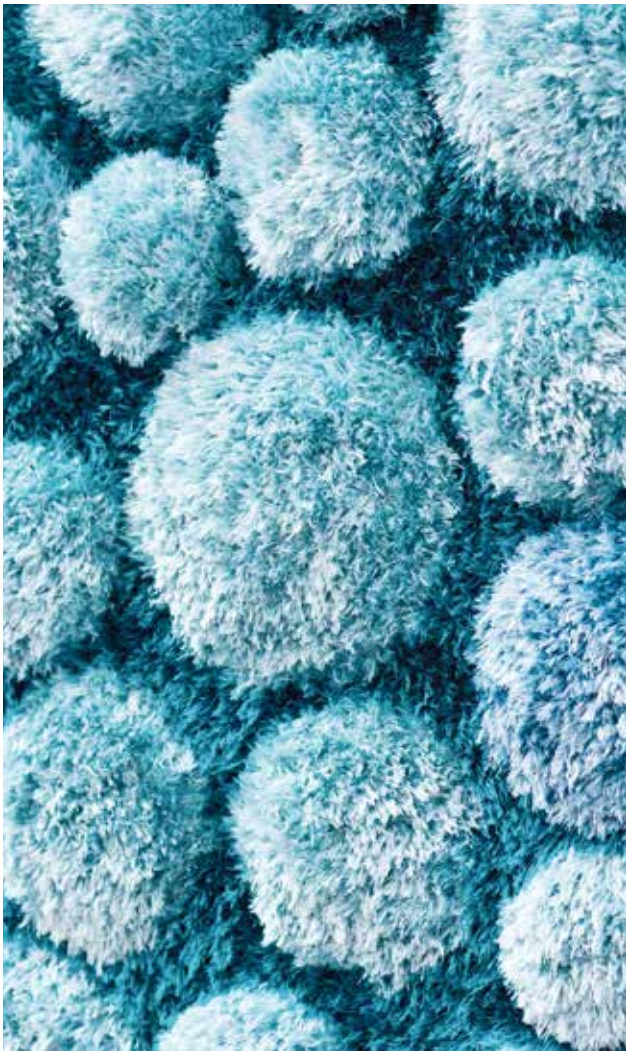
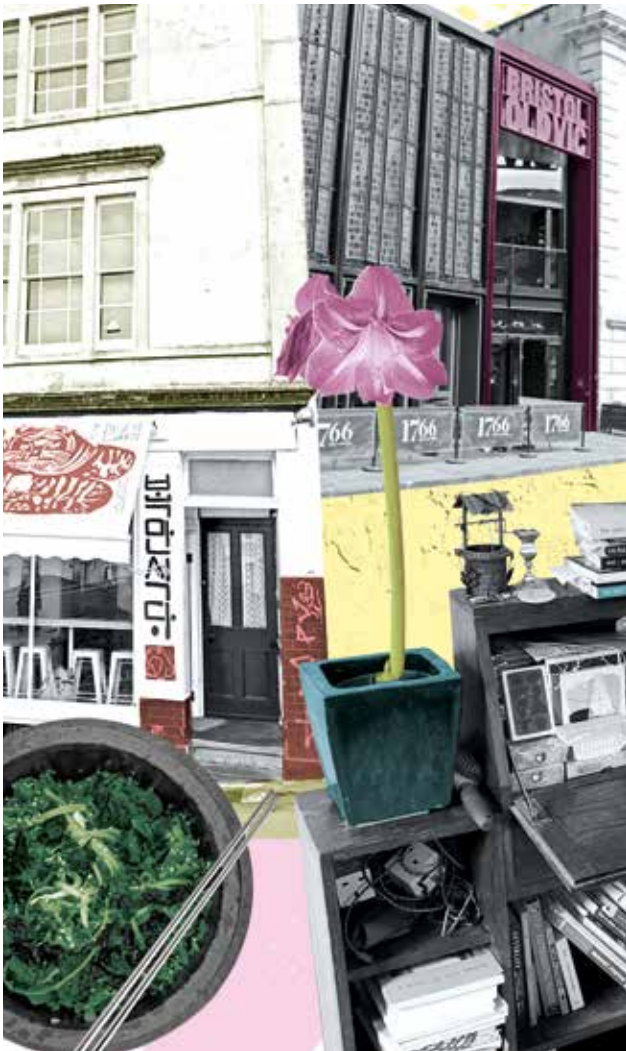
Professor Richard
Davies explores life at
the economic extremes

In the Club

The University of
Bristol Expeditions
Society

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Get in touch

Email
alumni@bristol.ac.uk

Telephone
+44 (0)117 394 1046

Website
bristol.ac.uk/alumni

f bristol.university.alumni
t @bristolalumni
in linkedin.com/school/
university-of-bristol/

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Executive Editor
Joanna McGarry
Editors
Ellie McCaldin
Grace Sims

Production
Ruth Wadsworth
Amy Fretten
Contributors
Asli Tatliadim
Andrew Czyzewski
Rachel Skerry

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Catch up with University updates, ground-breaking research, and news you can use from Bristol.

Bristol in 10



Naomi Wilkinson

01.

Celebrating a lifetime of climate research

2022 Alumni Award winner
Professor Dame Julia Slingo OBE

Professor Dame Julia Slingo (BSc 1973, PhD 1989, Hon DSc 2010), recipient of this year's Alumni Award for Lifetime Achievement, began her career at the Meteorological Office in the early 1970s. At that time, the field of climate science was in its infancy, dismissed and misunderstood by some in the broader scientific community.

Since then, as global warming has become recognised as a defining challenge facing humanity, Dame Julia has undertaken pioneering work on climate models and led scientific teams at the National Centre for Atmospheric Science and as Chief Scientist at the Met Office. Amidst often polarised debate and political stalemate, Dame Julia's steadfast commitment to rigour, openness and transparency in climate science has inspired the generations of scientists that follow in her footsteps, at her alma mater and much further afield.

→ To read an exclusive interview with Dame Julia, and find out more about her fellow 2022 Alumni Award winners, visit nonesuch.pub/awards.

02.

Bristol's summer scene

Harbour Festival and Balloon Fiesta return

If it's been too long since you picnicked on the Downs, cycled through Ashton Court, or people-watched at Wapping Wharf, then this summer might be the moment to return to Bristol. The 50th Bristol Harbour Festival takes place from 15 – 17 July, with live music, dancing, street theatre and poetry, while the International Balloon Fiesta returns from 11 August, when over 100 hot air balloons will take to the sky over the city.

“
Bristol is a remarkable global university in a great city... I look forward to serving the whole Bristol community
”

Professor Evelyn Welch,
incoming Vice-Chancellor



03.

Incoming Vice-Chancellor and President

Professor Evelyn Welch to lead Bristol

Professor Evelyn Welch, an accomplished university leader and historian, will become Bristol's next Vice-Chancellor and President on 1 September 2022. She joins Bristol from King's College London, and will succeed Professor Hugh Brady, who has led the University of Bristol since 2015.

'Professor Welch will be a fantastic asset to the University and is perfectly placed to help our community progress its academic and civic mission,' said Sir Paul Nurse, Chancellor of the University of Bristol.

→ Read more about Professor Welch's appointment at: nonesuch.pub/vice-chancellor



04.

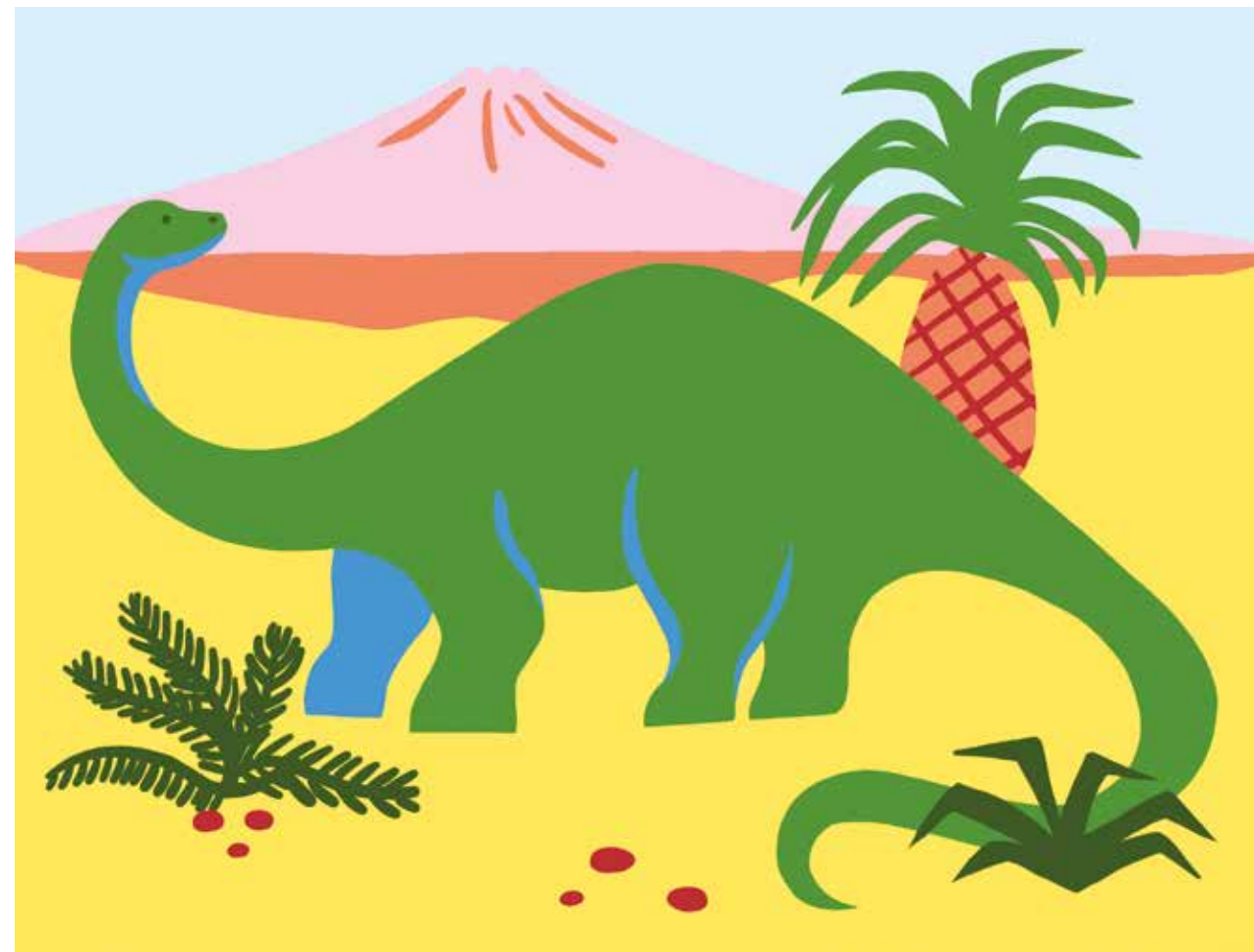
Cretaceous catastrophe

Atmospheric sulphur proved fatal for dinosaurs

The critical role sulphur gases played in dinosaur extinction has been uncovered by researchers from Bristol and St Andrews. The gases were ejected into the Earth's atmosphere following the Chicxulub asteroid impact some 66 million years ago, and the rapid and prolonged climate cooling they caused, together with reduced light and acid rain, proved catastrophic for dinosaurs.

“
It's amazing to be able to see such rapid and catastrophic global change in the geological record
”

Dr James Witts,
School of Earth Sciences



05.

Lasting legacy

Family gifts support physics research in perpetuity

The legacy of Dr Harold Herbert Potter (BSc 1919), a Bristol physics graduate and academic at the University from 1924 until 1959, will live on thanks to gifts in Wills from his family to fund physics research.

Dr Potter's widow, Bunty, together with her brothers, Nigel (MBChB 1952) and Leon (BVSc 1956) Cobb, each left generous gifts in their Wills totalling £7.7m to establish H H Potter Endowments to fund physics PhDs in perpetuity. A short film, which tells this extraordinary family story and celebrates the impact of legacy giving, had its first screening in May this year at the University's Charter Day celebrations.

→ This inspiring Bristol story which began over a century ago, and will continue to support students for generations to come, can be seen at nonesuch.pub/potter.



06.

Uncovering COVID's tactics

Researchers explore how SARS-CoV-2 adapts to survive

Bristol researchers have discovered how the COVID-19 virus can evolve distinctly in different cell types, and adapt its immunity, within an infected individual. This makes it more difficult for the virus to be completely cleared, whether by a person's own antibodies or through treatment.

Professor Imre Berger and colleagues at the Max Planck-Bristol Centre for Minimal Biology used synthetic biology, imaging and cloud computing to uncover the role of a pocket within the SARS-CoV-2 spike protein, demonstrating that it enables the virus to both multiply and 'hide' from the immune system of an infected person. The team, through their spinout, Halo Therapeutics, are exploring antiviral molecules to block this pocket.

“
We're excited to see Runway become an inspiring space
”

Mark Neild, Programme
Director for Runway



07.

Start up, scale it, spin out

Entrepreneurship and innovation at Bristol

Spinout companies from the University of Bristol generate an average return on capital of 285%, a higher return on investment than spinouts from any other UK university, according to a 2022 study.

This success – which means that for every £1 invested, Bristol spinouts add value of £2.85 – is testament to the support provided to entrepreneurs by SETsquared Bristol, the University's incubator for high-growth tech businesses. Current companies in the SETsquared community include Ultraleap, founded by Dr Tom Carter (MEng 2011, PhD 2017), and FluoretiQ, founded by 2022 Alumni Award winners Dr Neciah (BEng 2012, PhD 2016) and Josephine (BEng 2012) Dorh.

To nurture entrepreneurial talent at an even earlier stage, the University has now launched Runway, a startup accelerator for Bristol students and recent graduates. Runway provides working spaces and mentoring, together with financial support, to turn ideas into scalable businesses.

The project has received incredible philanthropic support from our alumni and friends, including a generous donation from the Wilkinson Charitable Trust.

08.

Bristol steps up for Ukraine

Students supporting refugees

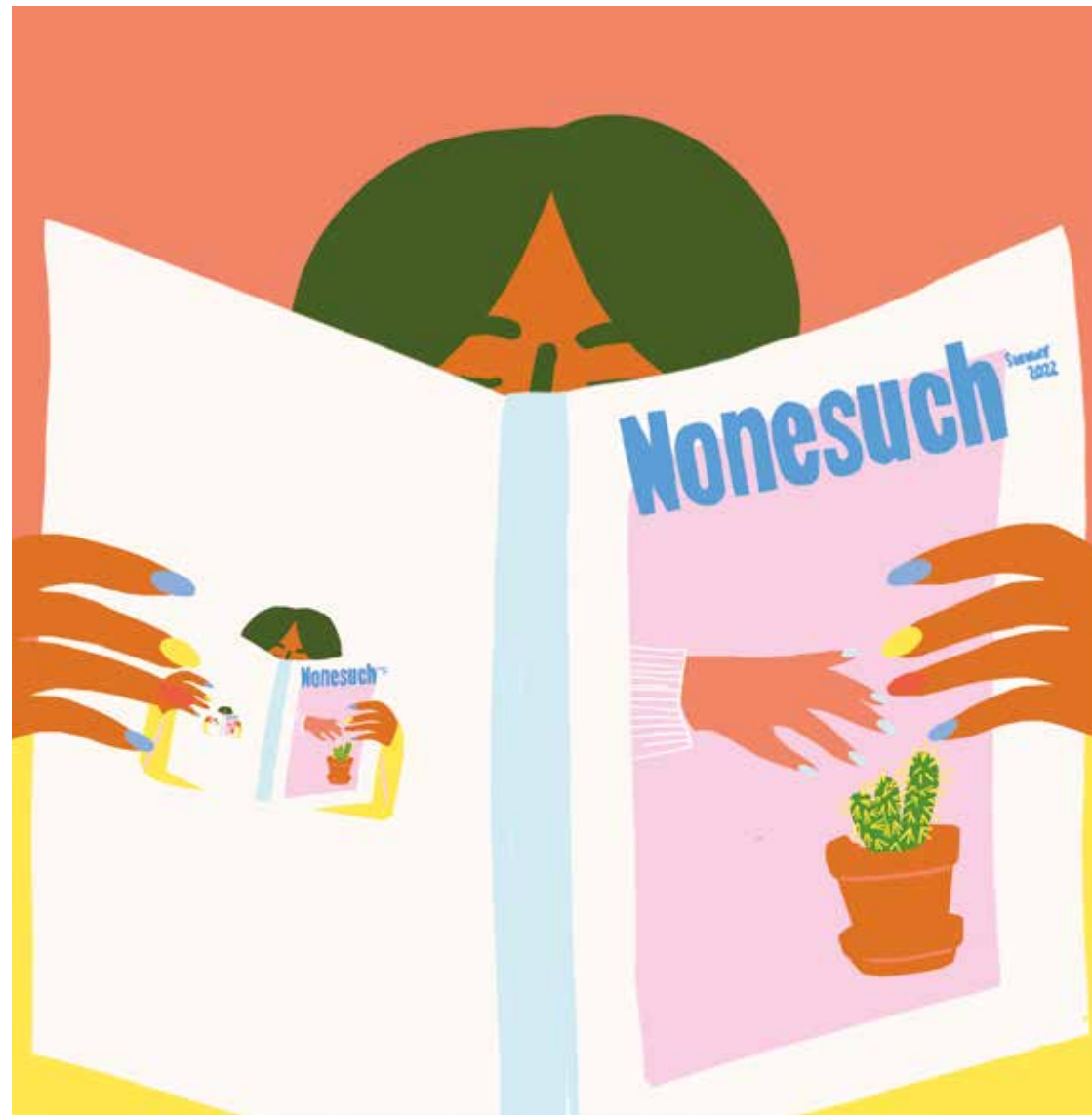
In response to the war in Ukraine, Bristol students and alumni moved quickly to support Ukrainian refugees fleeing their country. A group of nine friends, which included three University of Bristol students, raised almost £25,000 by running a half marathon. Other students travelled to Poland to lend their language skills to the humanitarian effort at the border. And Ukrainian alumnus Yegor Lanovenko (BA 2014, MPhil 2018) has set up Opora, a charity to support Ukrainian refugees seeking to settle in the UK and Czech Republic.

The University has committed further funds to its Sanctuary Scholarship programme, which supports students from refugee and asylum-seeking backgrounds to study at Bristol.



“
We just wanted to help as many people as we could
”

Yegor Lanovenko
(BA 2014, MPhil 2018)



09.

Power in partnership

Pioneering Africa–Bristol projects announced

An exploration of educational leadership in Botswana during the COVID-19 pandemic is among the first Africa–Bristol research projects to be funded by the Perivoli Africa Research Centre (PARC). Professor Bolelang Pheko of the University of Botswana and Dr Rafael Mitchell of Bristol’s School of Education will develop a leadership model for times of crisis to inform policy and practice in Botswana schools.

→ Read more about how PARC is facilitating Africa-led research at nonesuch.pub/parc.

10.

New look Nonesuch

Tell us what you think

Regular Nonesuch readers will notice that we have refreshed the design of the magazine this year. We’d love to hear your thoughts on the new look, and on any of the stories we have featured.

→ Get in touch by emailing alumni@bristol.ac.uk, or complete our reader survey by visiting nonesuch.pub/survey2022.

Need to Know

Every issue, we bring you the lowdown on an individual who enriches Bristol with their unique brilliance.



Professor Oliver Johnson

So... Professor Oliver Johnson.

Who is he? A stats maestro.

A maths wizard. Officially known as: Professor of Information Theory and Director of the Institute for Statistical Science in the School of Mathematics.

Most commonly spotted: On the Twittersphere, sharing meticulously plotted graphs and demystifying the numbers behind COVID-19 for his 44k followers. You’ll also find his expert commentary on COVID case rates, testing figures and hospital admission data in national news pieces – both broadcast and print.

Big fan of: Logscale (I mean who isn’t?). Also Aston Villa FC.

Specialist skill: Cutting through the noise. When COVID-19 information overload threatens, Professor Johnson’s ability to succinctly explain and analyse is a tonic.

Can be heard saying things like:

‘My faith in maths is restored when I see a perfectly straight log scale line. Exponential decay is so much more satisfying than weird oscillations.’

Additional accolades include:

Being potentially the first ever mathematician to feature in the *Bristol Post*’s Cool List, coming in at an impressive number 21 last year.

When he’s not plotting graphs,

you can find him: Reading, running or teaching in his favourite University location – the Fry Building.

Above Professor Oliver Johnson... also known as @BristOliver on Twitter

Photo © Dave Pratt

Caleb

The Bristol City Poet on his cultural recommendations, his favourite places to eat in Bristol and where he does his best writing.



Caleb Parkin (BA 2005) is a poet, tutor and educator, and is Bristol City Poet for 2020–2022. His poems have been published by *The Guardian*, *The Rialto* and *The Poetry Review* among others, and his debut poetry collection, *This Fruiting Body*, was published in 2021 by Nine Arches Press. He lives in East Bristol with his partner and their two dogs, Barney and Zoot.

Book

***Leave the World Behind* by Rumaan Alam (2020)**

Before I go to sleep, I tend to read stories as reading poems wakes me up too much. The last novel I read which I really raved about was Rumaan Alam's *Leave the World Behind* – it is so tightly plotted, using thriller and horror inflections, and the characterisation is so vivid. It really taps into various anxieties of being alive in the 2020s, without ever fully naming them: such powerful storytelling.

Food

Bokman, Stokes Croft

Special mentions: The Bristolian and Cafe Kino in Stokes Croft and Jeevan Sweets in Easton

Bokman, a Korean restaurant on Nine Tree Hill, is exquisite. Everything on the menu has a small explanation and you can tell each component is given huge care. We had the kimchi rice and Korean pickles, followed by a matcha tiramisu dessert. Get there when you can.

Cultural icon

Janelle Monáe

Janelle Monáe is the most incredible songwriter, performer, actor and activist and I hugely admire the way she's worked with the Afrofuturist sci-fi concept and aesthetic through her work to explore

being a queer woman of colour. I had clothes made out of the front cover of my debut poetry collection – a cowboy-cut shirt and bomber jacket and masks. My thinking was: Why shouldn't I make the book into an aesthetic and be 'over the top' in a way that feels like me? Artists like Monáe make space and give permission to do that.

Arts Space

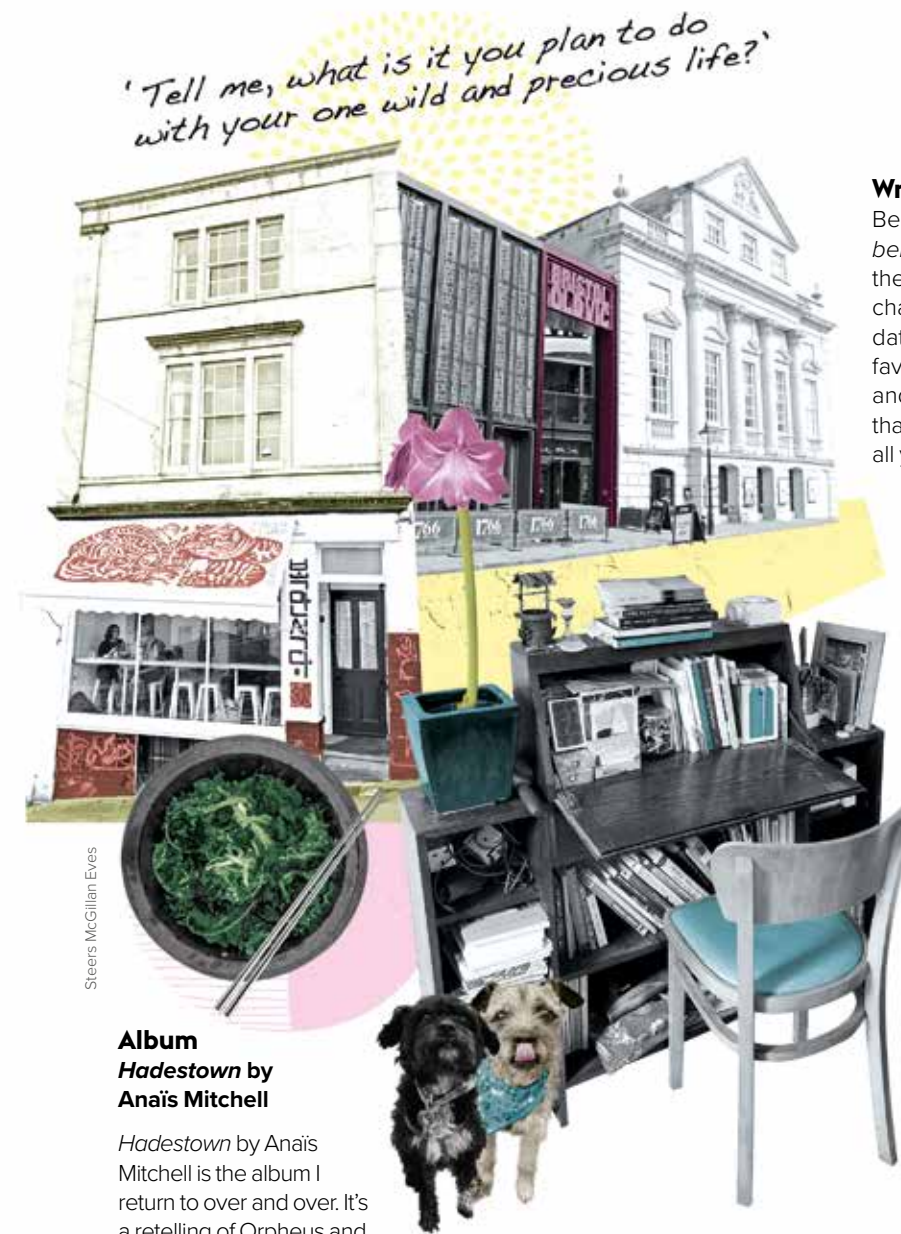
Bristol Old Vic

Special mentions: Trinity Centre, Wardrobe Theatre and Spike Island

The new foyer at Bristol Old Vic is such a great space with beautiful architecture. It was where we did the Bristol City Poet handover from Vanessa Kisuule (BA 2013) to myself in 2020. I'm so glad that this historic space is not just surviving, but flourishing and staying relevant, and I'm excited to see what they do next.

Sundays

Sunday for me usually means unstructured time, ambling about, doing housework and being with my partner and our dogs. I love walking too, so sometimes we'll take the dogs to Sand Bay and Sand Point near Weston, which I love. Otherwise, I sort the house out, read and do laundry. For me, domesticity is an important part of caring for myself and our pack: making home.



Album

***Hadestown* by Anais Mitchell**

Hadestown by Anais Mitchell is the album I return to over and over. It's a retelling of Orpheus and Eurydice, as an American folk opera. The songs are such a joy. The original touring show had an amazing cast, with Anais Mitchell, Justin Vernon (aka Bon Iver), Ani DiFranco and others. It then transferred to the National Theatre in London and it's now touring in the US.

Writing

Being a poet is a practice, a *doing* and a *being*. I usually write at a little bureau under the stairs. Sometimes I write in cafes for a change of scene. Taking myself on a 'poetry date' to museums or galleries is another favourite – I love writing inspired by artworks and objects. Sometimes there is a misconception that being a full-time poet means you spend all your time writing poems. Reader, that is not the case... the things I write most are emails!

Poetry

'The Summer Day' by Mary Oliver and 'The Weighing' by Jane Hirshfield

Good lines of poetry open up possibilities for me and give space for reflection. They might resonate, or feel dissonant, with our own experience. A big part of my work is celebrating and sharing that with others.

Mary Oliver's 'The Summer Day' concludes with the well-loved lines:

'Tell me, what is it you plan to do with your one wild and precious life?'

It's a rallying cry, a command to be engaged in life. Implicit in Oliver's use of the word 'wild' is that it's not just about your own life, but all the other lives, human and nonhuman, around you.

The other closing lines which come back to me frequently are from Jane Hirshfield's 'The Weighing':

'The world asks of us only the strength we have and we give it. Then it asks more, and we give it.'

For me, these lines are about our unknown capacities and our hidden reserves as human beings, and they have felt particularly relevant during the pandemic. When challenged, we have more strength than we realise. ✨

Parkin

Dr Marie-Annick Gournet

(PhD 2007)



Dave Pratt

Dr Marie-Annick Gournet is Director of Part-Time Programmes and Senior Lecturer in English at the University of Bristol. She's had an incredible career, having worked previously as Director of Widening Participation at the University of the West of England and as founder of MAG Consulting, an organisation that advises on diversity, inclusion and intercultural communication. Here she shares her insight into life as a Bristol academic.

was born in Guadeloupe and moved to France when I was seven. The experience was a shock for me and my family. I was the only Black child in my school and our headteacher was racist. This story, of leaving the Caribbean and moving to the mother country, is one that many people have written about, and I can certainly identify. It wasn't until I went to university, however, that I became aware of my own culture of literature. I read Ralph Ellison's *The Invisible Man* and that was the trigger for me. As a woman and a Black person, I could really identify with being invisible in certain contexts. Once I started reading Black American and Caribbean literature, which was telling a story I could relate to and recognise, I instantly wanted to know more.

I studied for my PhD at Bristol because I was seeking experts in Caribbean and African literature, and I knew it was a good university. I was fascinated by the way French Caribbean writers were using poetry to express their environment, culture and the economic situation of their islands. I learnt how authors were creating their own form of poetry, which often meant moving away from the traditional iambic pentameter to reflect their environment. Discovering and learning about Caribbean literature was a big moment for me. It inspired me to change things, it impacts my leadership style and it is why I am so adamant about the diversity and range of authors we offer

students. Literature helps you understand the world and how you fit in it.

In 2019 I joined the University of Bristol as Director of Part-Time Programmes and of our BA in Literature and Community Engagement. One of the first things I did was review all of our literature texts and units to make sure we had a decolonial and inclusive approach to our English Literature programme. Diversity is about all the different aspects of a person, different histories, thoughts and cultural backgrounds. I wanted to make sure we were including Black history and literature, that we had a balance of women and men and that we were reflecting LGBTQ literature on our courses.

I was then commissioned by Professor Tansy Jessop, Pro Vice-Chancellor for Education, to look at inclusive pedagogy at the University. I soon realised there were a lot of people across the organisation working on decolonising the curriculum but too often working in silos. I brought together a team involving both colleagues and students. Together, we delivered a curriculum deep dive on decolonising the curriculum and produced some guidance for all Faculty Directors of Teaching. This provided a framework for people at local levels to implement a strategy for their own courses, because the approach will be different across engineering, medicine, the humanities, for example. I believe the best work happens when we bring different minds together. My favourite part of my job is working with colleagues to find →



At the end of the day, that is what a university is about, creating a future for our students

”

solutions to improve experiences for learners. At the end of the day, that is what a university is about, creating a future for our students and ensuring people have a successful experience while they are there.

In my role as Director of Part-Time Programmes, I'm also focused on increasing access into higher education and making learning enjoyable for all. Our BA in English Literature and Community Engagement is taught one evening a week over six years. The course allows students to explore the role of literature and reading in contemporary society and contextualises how we use literature in real-life settings. I work primarily with mature learners, many of whom have enormous potential but may not have thought about or had the opportunity to go to university before. The course also suits people who are seeking to change their careers.

Learning at any age, whether we are 30, 50 or 70 years old, enables better work opportunities and enhances our health and wellbeing. It allows us to meet other people and supports our personal development. Professor Tom Sperlinger and I lead on lifelong learning for the University, as part of a new nationwide commission to ensure anyone of working age can engage with learning and access employment. Part of our job is to review access requirements and accreditation and assess the courses we are offering. Together, we explore the best ways to work with organisations and businesses to identify the skills they are looking for in graduates. We also engage with learners to identify their needs and give them a transformational opportunity.

The primary lesson I impart on my students is to be curious. Enquire about things, be open to possibilities, and question things all the time – yourself, your surroundings, what is in front of you. Do the research and find out more, I tell them. It's only by having that curiosity and openness that you can learn and progress and open yourself up to opportunities. ✨



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Why our sense of touch is a crucial part of what makes us human, and how new technology is evolving to harness its power.

More than a feeling



Words
Andrew Czyzewski



One of the most amazing things about modern technology is how it can connect us in ways that would have seemed almost incomprehensible a few decades ago. We can keep in almost constant audiovisual contact with distant family and friends; conduct complex business in global markets; and even play elaborate, interactive video games with hundreds of others.

During the COVID-19 pandemic, these technologies came into their own and enabled our work and social lives to continue, in a fashion. While some people welcomed the space, many of us began to miss actual, physical closeness with others and specifically a shared sense of touch – be it a simple greeting hug or a comforting stroke on the arm when upset. Others, meanwhile, missed the affirming handshake to seal a business deal or even the celebratory high five with teammates at a sports game. Many of these moments from our shared experience of touch became contentious, at times even forbidden.

But what exactly is unique about touch and how is our understanding of it evolving? University of Bristol researchers are exploring how touch has shaped the human experience, from Medieval times to the present day, and how it is developing in concert with technology. →

“Touch helps us keep out of harm’s way... But it’s also a key part of what makes us human.”

Touch in the spiritual and devotional

The senses have been of interest to thinkers and philosophers for centuries, not least because they connect our inner self to the external world. Aristotle believed that true knowledge came from the senses and proposed a hierarchy, with sight being the ‘noblest’ of them, followed by hearing, smell, taste and then touch.

Interestingly, senses in the Middle Ages were understood as being more closely related than they are now, as Beth Williamson, Professor of Medieval Culture in the Department of History of Art, explains.

‘One of the ways in which sight was conceptualised at the time involved rays going from your eyes towards the object and the object itself emitting rays, with a touching of those rays in between. So, sight could very much be seen as a species of touch.’

Professor Williamson’s research explores how devotion is understood through different sensory modalities. The touching of relics, including body parts of deceased saints or objects they used, played an important role in this period.

‘You would get a sort of spiritual power from it,’ Professor Williamson says. ‘People also took vows and oaths by touching relics, making that contact with holiness. You see that on the Bayeux Tapestry depicting the Norman Conquest of 1066. Harold, Earl of Wessex, touches a relic to say that he’s going to be loyal to William of Normandy, who saw himself as the rightful heir to the throne of England.’

In the Middle Ages, when an individual became the servant or vassal of a lord, they would take part in a ceremony where they would place their hands between the hands of their master, which is where the Christian prayer gesture originates from – your hands between the heavenly Lord’s.

Of course, touch through the Medieval period was not always sacred. Though a complete understanding of germ theory was centuries away, the bubonic plague pandemic of the late Middle Ages generated ‘contactless’ innovations reminiscent of our early efforts to contain the COVID-19 pandemic. Plague stones would be positioned on the outskirts of villages, with money steeped in vinegar to facilitate trade and avoid



infection. Pitch and Pay Lane, close to the Clifton Downs, gets its name from that period, as the point where Westbury villagers would pitch their goods to inhabitants of plague-ridden Bristol.

Touch and the human condition

Decades of research and experimentation have helped to reveal the great complexity of touch and its relationship with the other senses. It is now believed that touch is the first sense to develop in the growing foetus in the mother’s womb, at around eight weeks gestation.

We also know that touch, or more accurately tactile perception, consists of several distinct sensations, including pressure, temperature, vibration and pain. These sensations are transmitted to the brain via specialised receptors in the skin, including thermoreceptors, mechanoreceptors and nociceptors.



Clearly, as a survival mechanism, touch helps keep us out of harm’s way by avoiding anything that causes initial pain. But it’s also a key part of what makes us human, as Nathan Lepora, Professor of Robotics and AI, reflects:

‘While vision gives you geometrical feedback of where things are in space, touch gives you feedback about forces, contacts and interactions, and the control of those forces is essential when manipulating objects. Although we’ve seen sophisticated tool use in chimps and even crows, it’s nothing like the level of dexterity in humans.

‘Technology is basically tool use. It all stems from making things with our hands. I would argue that touch was critical in the development of human intelligence.’

Professor Lepora also notes the importance of tactile perception in the feet and legs, which detect and control slippage and grip, thus enabling us to walk upright (it’s basically impossible to walk with an anaesthetised leg).

Another key aspect of what makes us human is our ability to form bonds with other people across large groups – and touch plays a critical role here as well.

Experiments have shown that through touch alone we can communicate and discriminate between emotions including gratitude, anger, love and fear with a greater degree of accuracy than facial and vocal communication. A raft of studies in recent decades has also demonstrated that human touch is associated with clear physical and health benefits.

Professor Michael Banissy recently moved to Bristol to head up the School of Psychological Science and has a keen interest in touch.

‘For me personally, touch is one of my favourite senses and like many people I really missed that during lockdown, when it was taken away. It’s fundamentally important and connects us to each other and to the world around us. From infancy, we’re using touch to learn about our world and explore.’

In January 2019 Professor Banissy led an ambitious study called The Touch Test. Thought to be one of the world’s largest studies of touch, it gathered responses from almost 40,000 people in 112 countries. Among its key findings were that 72% of people viewed interpersonal touch positively and 43% of typical adults felt that society does not enable us to touch enough.

There are of course caveats here. Unsolicited and unwelcome touch elicits a vastly different response to a mutually shared experience. There is also a whole community of neurodivergent people, including those on the autistic spectrum, for whom touch can be completely overwhelming and even distressing.

Professor Banissy comments: ‘Touch is incredibly nuanced and varies from person to person and from situation to situation, even within the same person. One day you might absolutely love your partner, say, stroking your arm, but if you’ve had a hectic day, you might just want space.’ →

“Will we accept the touch of robotic life, and embrace it as equal to our own?”

The findings of The Touch Test were in a way bittersweet, as they showed the importance of touch just before we entered lockdown in March 2020 and were soon to be denied it. Even before the pandemic, the ‘epidemic of loneliness’ seen in many modern societies, and the associated lack of physical contact, was something researchers were trying to address.

A therapeutic robot seal called Paro made headlines a few years ago when it was deployed in care homes throughout Japan. With tactile sensors covering its fur and touch-sensitive whiskers it responded to stroking and purportedly reduced stress in residents.

More recently, a group of researchers from Bristol led by Dr Chris Kent, Associate Professor in Cognitive Psychology, developed a huggable, cushion-like device that mechanically simulates breathing, and has been shown to help alleviate anxiety in students prior to a maths test. Indeed, the breathing cushion was found to be just as effective at easing anxiety as guided meditation.

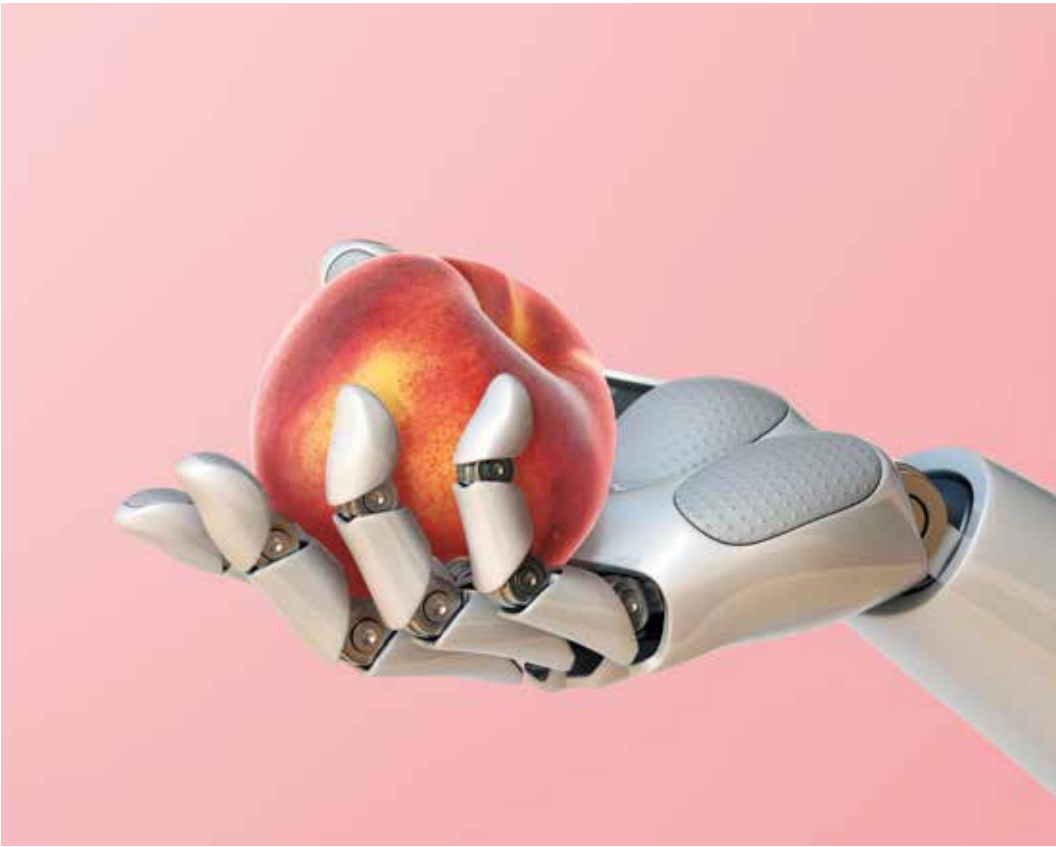
Talking about the development of the cushion, Dr Kent comments: ‘My initial interest was around new university students moving away from home and how they might miss those close relationships with parents. After becoming a father myself, I realised the importance of the tactile modality in connection with children. With very young children you can solve most of life’s problems with a cuddle! Then the pandemic really brought into focus that need for a connection.’

Shaping the future of touch

Some researchers are looking even further into the future of touch – how we might make best use of our own tactile abilities and even imbue robots with a sense of touch.

One such academic is Dr Anne Roudaut, Associate Professor in Human–Computer Interaction in the Department of Computer Science.

‘I’m interested in understanding how humans interact with and manipulate tangible technologies, and particularly how we use the formidable attributes we have, our hands, and how we can develop digital tools that are better adapted to us,’



she says. ‘Humans have evolved in an extraordinary manner, spanning millions of years. But in terms of using digital tools, we are only 40 years in really.’

She notes that most consumer devices are developed through a ‘technology-driven approach’ based largely on rectangular and flat screens that are easy to manufacture, but not necessarily adapted to human hands and touch.

‘I think there is a real opportunity to rethink the way we build interactive technology, and to start from scratch, working with material scientists, physicians, computer scientists, psychologists and others, towards devices that truly unleash users’ interactive potential.’

Dr Roudaut and a growing community of researchers are in the early stages of developing devices that change their shape depending on the task required and could even be optimised and personalised to the sensory needs of each individual. Such shape-shifting devices could also be used in education and allow children with different sensory faculties to be taught together, inclusively.

‘For example, when teaching about the formation of continents, children would physically interact with, and mould, actuated interactive maps in order to experience the impact of geological forces,’ Dr Roudaut says.

As well as bringing augmented tactile experiences to a diverse spectrum of humans, researchers are also seeking to bring touch to burgeoning robotic life.

Professor Lepora and his team have developed a core technology called the Tactile Fingertip (TacTip). Inspired by the structure of the human glabrous (hairless) skin found on our hands, the TacTip has an array of internal pins which deform when in contact with an object. This produces artificial nerve signals that mimic those of humans.

The group has fitted the TacTip to several different robotic hands. Watching videos of these hands, which have near-human levels of dexterity, is quite mesmerising – they can gently pick up a delicate piece of origami sculpture, clearly feeling as the paper yields here and there. When gripping a ball they can also detect and correct for a slip and react quickly to re-grasp.

The TacTip technology should enable research groups around the world to develop robots and autonomous machines with a sense of touch and human-like dexterity, which could pave the way for applications such as the handling or sorting of goods or even nursing and caring.

Having established that touch is a key part of what makes us human, this gives us some serious philosophical and even ethical points for debate. Our society is growing accustomed to artificially intelligent machines that have amazing abilities in logic, reasoning and language. Somehow a sense of touch, which is so special and personal to us, takes it to a different level entirely. Will we accept the touch of robotic life, and embrace it as equal to our own, forming group bonds with our machine brethren? Only time will tell. ✨

Food is our universal language. It brings communities together and breaks down barriers.

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Right: Kalpna at home.



Kalpna Woolf

(Hon DLitt 2019)

Kalpna Woolf is an award-winning food writer, business adviser and former Head of the BBC Natural History Unit. She is also founder of the charity 91 Ways and the BeOnBoard programme. In 2019 she was the recipient of an honorary degree from the University of Bristol, and she has recently published her latest recipe book, *Eat, Share, Love*. She reflects on some of the lessons she's learned over her life and career.

My parents were Hindus born in what is now known as Pakistan. My father fought for the British army, so when we were forced to leave during partition, we came to the UK. We were a new family trying to establish a life in Southall. The National Front, a far-right fascist party, were wreaking havoc and there was a lot of fear. The natural thing to do would be to retreat, but my father's response was to open the doors and invite people in. And of course, you can't open the door to people without offering them a cup of tea and a snack. It was my parents' openness and hospitality that allowed the people on our street to know us and understand us; to stand with us when the National Front came. That has really stayed with me.

There were always pots and pans cooking in my house. My mother would come home after working 12 hours and once she'd fed all five of us, we would set about making beautiful deep-fried crispy Namak Para, made from dough and cumin. My mother put them in big buckets in case people →

Paul Gregory



Paul Gregory

were coming for tea. And while they were eating those, they didn't realise dinner was being cooked. The doorbell was always ringing and friends were always there. I loved those days; they are such a big part of me. I think through my work I'm just trying to relive some of my childhood.

My book, *Eat, Share, Love*, is about telling our stories through the medium of food. On the front cover is a yellow silk sari, one of the first saris my mum gave me. For this book, I invited people to contribute their own recipes, along with photographs and relics from their heritage. Our cherished recipes tell us so much about who we are, how we live, what is important to us. A recipe isn't just a list of ingredients – it's associated with a memory, a ritual, a moment of joy or sadness or a moment of history. They are things that mean something; they tell a story in themselves.

There is a lot of food poverty in Bristol. 91 Ways helps people get access to good food and teaches people how to cook. Since 2015 we've met about 27,500 people. We named the charity 91 Ways because there are 91 different languages spoken in this city. I asked myself, 'How can we bring people together who don't speak the same language?' And the answer was food. Food is our universal language. It brings communities together and it breaks down barriers.

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People did so many good things during lockdown to help one another. Let's not let go of that.
 ”

When people trust you, they will tell you what they need. Some people want us to bring food to their families and some want us to talk to their community about healthy eating. Often we take chefs from different countries into areas that may never have eaten that food before. We took an Eritrean cook to Stockwood, for example, which is a predominantly white area of Bristol. We cooked, chatted and ate together. Two things happened – people made new friendships and connections with their neighbours, and the community learnt about a new culture. Everyone took food home with them too, so they had meals for the next couple of days.



Jon Craig

Left: Namak Para, Kalpna's beloved homemade childhood snack.

Above: Kalpna (left) and Brinda Bungaroo (right), chef and food blogger at a supper club for 91 Ways.

→ You can buy *Eat, Share, Love* (Meze Publishing, 2022) from Papadeli and Penny Brohn in Bristol, where all proceeds go to the charity 91 Ways. You can also buy the book from local bookshops or major retailers.

People did so many good things during lockdown to help one another. Let's not let go of that. When 91 Ways couldn't visit people, we posted recipe cards. We included a note and a stamped address for them to send the recipe on to a friend. We phoned people to keep them company. Isolation can have such a huge impact on our health. Many people's lives will never be the same again after COVID. Now is the time to look out for each other even more.

Telling stories is an excellent way to help people understand who you are. My time as Head of the BBC Natural History Unit taught me that. It was an amazing experience but I wasn't always comfortable because the media industry wasn't very diverse at the time. Bristol is a diverse city and we need its organisations to reflect that. I created BeOnBoard to develop a talent pool of people from diverse backgrounds who could sit on boards, and to work with organisations looking to diversify their board members. Diversity drives agility, innovation and competition. I want to see an inclusive city, and an inclusive local economy where everybody thrives.

Work hard and try to make a difference. We're not alone in this world. We must make this world the best place we can for ourselves and for others. We must help shape it. It's important we understand each other and celebrate our diversity. I couldn't look back and think I hadn't tried my best. ✨



For Professor Richard Davies of the School of Economics, life at the economic extremes holds powerful lessons for the world at large.

After Shock

Left: Scenes of destruction in Banda Aceh, Indonesia, after the 2004 tsunami.

Words Rachel Skerry

When three giant waves hit the Indonesian coastal region of Aceh on Boxing Day 2004, they engulfed hundreds of thousands of lives and wiped out an entire economy. But remarkably, from devastation and loss emerged stories of survivors finding ways to rebuild their lives and livelihoods against the odds.

For his award-winning book, *Extreme Economies* (2019), Professor Richard Davies travelled the world to collect these tales of survival firsthand. He argues that we can learn a huge amount about everyday economics from talking to people in places like Aceh where the underlying infrastructure has suffered an immense shock.

Richard has long been at the heart of the UK's economic policymaking and analysis, having worked as the economics editor for *The Economist* and as

an adviser to the Chancellor of the Exchequer. 'Over the years,' he says, 'I realised that what we economists don't think about so much, but should, is what happens when things go really badly wrong.'

'It's not an extreme event, for example, if crypto goes up by 25% today. It's important, but I don't think it tells us anything fundamentally about the human condition. Extreme events are scenarios where you don't have banks or money anymore, or, as in Indonesia, every house in your entire region is destroyed.'

'My aim was to find things out from these extremes, but then also to demystify them using personal stories.'

The narrative that emerges from the stories in *Extreme Economies* is that economic survival or failure depends on human resilience.

Finding ways to harness the power of resilience is crucial, says Richard, if we are to address the challenges that ageing populations, accelerating technology and rising inequality pose in the future. Examining extremes may also provide clues for tackling our more immediate economic issues, from navigating the current cost-of-living crisis to recovering from the impact of the pandemic.

The following stories from Richard's book give a sense of what helps people living in extreme conditions to remain resilient and what we can learn from them.

Building a resilient economy: clues from the extremes

Syria/Jordan border: Identity and the informal economy

When Richard visited Zaatari, one of the world's biggest refugee camps, he found a vibrant hub of informal trading and self-expression. Almost two thirds of adults living in the camp were working, and in 2016 it had a startup rate of 42%, which was higher than many of the world's entrepreneurial hotspots.

On a bustling 'street' he met Qaseem, who had set up shop as a bicycle seller and repairer. Business was thriving, partly because people were eager to customise their standard issue donated bicycles. 'When you have very little,' Richard explains, 'this desire to express individuality by trading, swapping or amending what you have becomes very important in maintaining your sense of identity.' →

Another aspect of Zaatari's resilience is the power of the informal or 'missing' economy (which is neither taxed nor monitored by any form of government). In some countries, it's estimated that informal trade represents up to half of all economic activity. Richard sees this as the lifeblood of resilience because it creates jobs and markets for people under extreme economic stress, but he believes its importance is massively underplayed in economic policymaking and analysis.

Japan: Pensioner economy

In Akita, Richard met Mr Suzuki, 73 years old and one of the stars of the JFA-70 football league.

'In the JFA-70 league the players can't kick the ball very hard, so long passes are impossible,' Richard writes in his book. 'And since no one can run very fast, short and highly accurate passing is the key to success in their league, allowing the team to keep possession and conserve energy.'

Adaptation is the watchword in Akita, where more than a third of people are over 65. The region's plummeting birth rate will soon leave many towns and villages empty, but despite this demographic shock, society remains relatively cohesive. And encouragingly, its young people are working on finding solutions for the ageing population, setting up companies that provide services for the elderly – from day care 'casinos' to machine learning robots that assist with personal care.

As working populations continue to shrink, many governments are asking themselves who will look after the elderly and how this will be funded. Akita's adaptive response, characterised by collaborative thinking and innovation, may provide grounds for optimism.

Indonesia: Top down or bottom up?

After the 2004 tsunami, local decision making may have helped the people of Aceh build their economy back better. Speaking to survivors, Richard found that most had used their local knowledge, traditions and facts as the basis for deciding how best to use aid money to rebuild their homes and businesses.

Local knowledge is something national policymakers can sometimes ignore, and this may hold lessons for the UK's 'levelling up' plans, in terms of who decides where and how the money is spent.

'From my experience of working in the Bank of England and the UK Treasury, the feeling is that it's best to have national expertise, because you can hire world experts and take decisions based on the very best global evidence,' says Richard. 'What changed in my thinking from writing the book is the importance of locally made decisions, because these are more likely to reflect the hidden mesh of the real economy. This is the stuff all around us, such as our neighbours and our civic groups. Those things are very important and can be overlooked, or even destroyed, by national level policymaking.'



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Left A Syrian man fixes a bicycle inside his shop in Al-Zaatari refugee camp, in Mafraq, Jordan, October 15, 2016.

Right In Japan, innovative approaches are being taken to support their ageing population.



To find out more about Richard's book, go to **extreme economies.com**



Estonia: Robot workers

In Tallinn – the capital of the world's first digital state and birthplace of Skype – people's parcels are now being delivered by robot. It's a breakthrough which poses some big questions: will labour-saving logistics tech ultimately make humans redundant? Or will an automated future simply mean that the nature of work changes?

Richard's view is that if you live in a country like Estonia, which has a shrinking population, the old assumptions that automation causes job shortages – or at least depresses wages – are overturned. 'People told me they need robots to do the jobs because there aren't enough workers.'

Shifting perspective on the automation question could help the UK too, Richard argues. As we face the deepening issue of finding and retaining care home staff, or the annual shortage of fruit pickers, developing robots to do the jobs we're unable to fill or unwilling to do could be a route worth exploring.

Chile: Lessons in inequality

Although Chile's national income is one of the highest in Latin America, its economy is extremely unequal. In the capital, Santiago, you can plot this inequality on the subway map. The thinktank Educación 2020 has observed a near-perfect correlation between where people lived, how much they earned and how well they did at school. When Richard visited, he found that society had been divided to the extent that rich and poor people no longer go to the same public parks.

In the UK, organisations such as the Resolution Foundation have found that the COVID-19 pandemic significantly increased the wealth gap between the richest and poorest. Chile provides a stark warning as to what can happen if this gap continues to widen. As Richard found: 'In Santiago, inequality feeds into a culture where people will no longer come together to face joint challenges. And if you're facing massive challenges you need to have cohesion in order to be resilient.' *

Connor Davies

Alumnus Connor Davies (BSc 2019) talks us through a morning in the life of an Engagement and Learning Presenter at Bristol Zoological Society.

It's a sunny day at Wild Place Project and the warmth is bringing the crowds in. I just gave several animal talks, and this is my last one of the day. Here, at the edge of the giraffe enclosure, I can hear the beautiful songbirds, and the woodpeckers tapping away in the woods nearby. Florence the zebra is ambling across the paddock, her belly bulging from her growing foal, due any day now.

Our giraffes have just come outside for fresh air. They look similar but subtle differences in

their spot patterns and personalities give away who is who. Tico, the youngest, is inquisitive; he's always first to explore something new. Tom, who turned seven this March, is a show-off; he's the tallest, heaviest and oldest, so he is eager to display his dominance to Dayo and Tico. I wonder if they can see the birds I am hearing with their sharp vision.

Giving my talks always fills me with a sense of satisfaction, as it's my chance to make a really positive impact on someone's day. I try to make sure our visitors leave knowing a little bit more about our animals than when they arrived. Giving talks can feel small in the grand scheme of conservation but it has a huge impact on an individual basis.



Expeditions Society

We hear from members past and present on what makes the Expeditions Society so special.

In December 2021, a group of intrepid Bristol students were in the Lake District climbing up the third highest point in England, Helvellyn mountain, via the steep Striding Edge. All of the adventurers were taking part in one of the University of Bristol Expeditions Society's classic weekend trips.

Bronwen Hall (BSc 2021), the society's Equality and Postgraduate Officer, was one of nine students on the walk; six were freshers. They looked at the forecast before the journey to see what the weather might be like. The report said there would be light rain and cold blasts, which was to be expected at that time of year.

They predicted a fairly straightforward journey without any major obstacles to overcome. But by the time they were halfway up, their ankles were already buried in snow, which kept falling tirelessly throughout their long ascent. They had good gear and waterproofs but their eyelashes, and any stray locks of hair sticking out of their hats, were frozen solid.

When they reached the rocky top of the mountain several hours later, they were waist deep in fresh snow. They could not see far into the distance,



because of the blizzard and fog. So they had to turn around and walk straight back down, listening to the sound of their boots as they crushed the white, powdery, untouched ground with each stride. This was only the first day of their expedition.

'I complain the whole way when I am going up a mountain because expeditions are type two fun,' says Bronwen. 'Which means that you feel their joy once you complete them. But I remember being very excited on that day and feeling safe because I was surrounded by fluffy white snow and close friends. It was a heart-warming feeling influenced by the knowledge that we were experiencing something rare that so many people don't get to do.'

The University of Bristol's Student Union provides support to over 330 societies, groups and student networks with widely varying shared interests. But few hold their Annual General Meeting around a campfire at the skirts of a mountain after two days of trail chasing, scrambling and camping. The Expeditions Society is the largest and most active outdoor society at the University, packed with countless adventures, big and small.

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Through generations of members passing the baton to one another, the society's definition of expedition has changed to make it more accessible and relevant to the times we live in.
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The society was established in 1960, and its inaugural trip – the University of Bristol Trans-Continental Expedition – began on 31 August 1960. Six alumni who met at the University were seen off in two Austin Gypsy jeeps by the Vice-Chancellor at the time, Sir Philip Morris, and Alderman Hugh Jenkins who was the Lord Mayor of Bristol. Their epic journey lasted 13 months and the group traversed Asia, Australia and the Americas on dirt roads, asphalt, sea and air.

Through generations of members passing the baton to one another, the society's definition of expedition has changed to make it more accessible and relevant to the times we live in. Isaac Ogden, a younger society member in his first year, with six outings already under his belt, described an expedition as being a multi-day adventure out of

one's everyday norm in a completely different place. Although the society still offers adventures in faraway countries, with Romania on the cards for summer 2022, it also takes its members on smaller journeys where the main meal is the shared experience. This allows more people to join in and be a part of the adventure.

Bronwen, whose eyelashes were frozen solid at the high peaks of Helvellyn, said that the society is becoming more accessible with each passing year, and recent years have seen an equal number of male and female members. It not only produces strong people, but it produces strong, confident women who are mountain leaders. The committee's goal is to make sure that they have the resources and planning required to support people of all backgrounds in getting outdoors.

In February this year, Isaac co-led his first walk. The group headed to Snowdonia where torrential rain caused everything to flood and turned the forest paths into rivers. After six hours of toiling in the rainstorm, they finished their walk at the top of a grassy hill. By this point no one had dry boots and the ground had become so slippery that most could not stay on their feet. They ended up slipping and sliding all the way to the bottom.

An alumna and former secretary of the society, Megan Clark (BA 2020, MRes 2021), says this kind of shared camaraderie is a key element of the group's expeditions. Today, the best description of the society is 'the clique that anyone can join' since there are adventures on offer for all skill levels – from ice climbing with axes and crampons in the Scottish peaks, which Megan enjoyed during the annual New Year's trip to Fort William, to gently rambling on rolling hills closer to Bristol. What binds members are the moments of shared experience, like lying fast asleep in their sleeping bags after a challenging day's walk. They may find themselves sleeping on hard surfaces in the cold, draughty darkness. And yes, on occasion they will be woken up by society members blaring the song 'Euphoria' through their speakers, while banging pots and pans against each other. But these small, informal traditions unite them together.

To strengthen these experiences, the society offers multiple training opportunities like rope skills, remote first aid, mountain leader training and accreditation to those who would like to increase their knowledge and skills. Alumni often chip in too, coming along as trip leaders or drivers. Megan says there is intergenerational training within the society where skills are generously handed down with each passing cohort. The Bronwens of yesterday train the Isaacs of today who will hopefully train the students of tomorrow. Each committee offers itself to the next one. ✨

→ We'd love to hear your memories of clubs and societies at Bristol: get in touch at alumni@bristol.ac.uk.

Julian Issa

We caught up with Julian Issa (MSci 2014), Founder and CEO of Fethr, a friendship app that helps individuals make lasting and meaningful connections.

Where did the name of your app come from?

Birds of a feather flock together!

How does the app work and how has it changed over time?

The initial focus was on our algorithm, which connects people based on friendship compatibility. Fethr members are asked questions about their personality, passions and experiences – and then they can connect with up to 30 people in their area every day.

More recently, our focus has turned to community building and adding more meaning to the user journey. That has included adding icebreakers within the chat function and building out the Fethr communities feature. The early-stage startup journey is a constant process of listening to your most engaged customers and building the best product for their problem.

Where did the idea for Fethr come from?

Have you ever experienced a deep sinking feeling of loneliness on a Tuesday evening or that serendipitous moment when you meet someone that just gets you? Having worked abroad as a tech journalist and consultant, moving from one big busy city to another, I knew the feeling of both. I love meeting new people from different cultures and backgrounds, but I found it difficult to build community in the new cities I was moving to. That's where the idea came from.

What do you love about entrepreneurial life?

Meeting other entrepreneurs who are trying to solve some of the world's biggest challenges. The respect and feedback that fellow entrepreneurs give each other is amazing and being part of such a curious community is something I really enjoy.

What are the more challenging aspects of being an entrepreneur?

Getting comfortable with failing every single day. It's a rollercoaster ride and you need to be super resilient, tenacious, and at times have extremely



Mary Flora Hart



For more information head to [Fethr.app](https://fethr.app)

high levels of optimism. And you have to be prepared to put in those long hours because no one else is going to do it for you.

What's been your proudest moment so far on your journey with Fethr?

I feel really proud every time we receive a success story from a customer and know that we've made an impact. It's amazing when you hear someone saying that the app is changing the way they live and the way that they connect with people.

What's the best piece of career advice that you've received?

A well-known CEO once said to me that the most important thing you can do is discover who you really are and express yourself as truthfully as you can. Find your 'why'. He also said that the top leaders sit really well in uncertainty. They're able to listen to the trusted experts around them and come up with the best solutions from the information they provide.

How did the University of Bristol set you up for your entrepreneurial journey?

Bristol is such a great, fun city and university is a time to grow up, be curious, and try new things. As a student, I was really involved with the Opera Society and I was President of the Geography Society. I spent a lot of time getting to know myself, which was invaluable. ✨



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I strongly believe that research and education transform both individual lives and greater society. I can't predict the future, but we have scientists and experts at Bristol who are shaping the future.

And this is why I'm so happy to leave a gift to Bristol in my Will.

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