# BA2

THE MAGAZINE FOR ALUMNI AND FRIENDS OF THE UNIVERSITY OF BATH
**ISSUE 31**




HOW BATH IS FINDING FUTURE CHAMPIONS

# SCIENCE OF SPORTS STARS

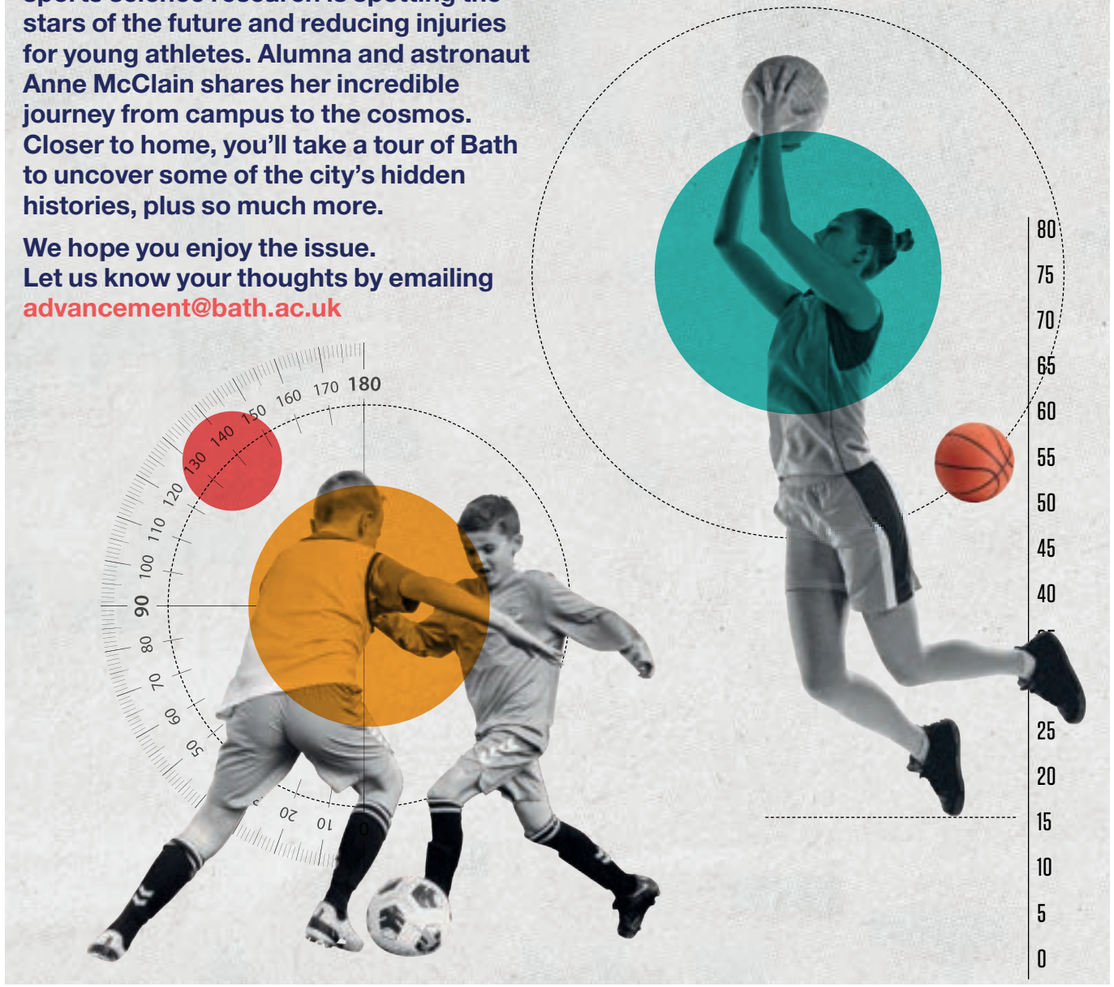
UNIVERSITY OF BATH

# Welcome

08

**In this issue, discover how Bath's leading sports science research is spotting the stars of the future and reducing injuries for young athletes. Alumna and astronaut Anne McClain shares her incredible journey from campus to the cosmos. Closer to home, you'll take a tour of Bath to uncover some of the city's hidden histories, plus so much more.**

**We hope you enjoy the issue.**
**Let us know your thoughts by emailing advancement@bath.ac.uk**

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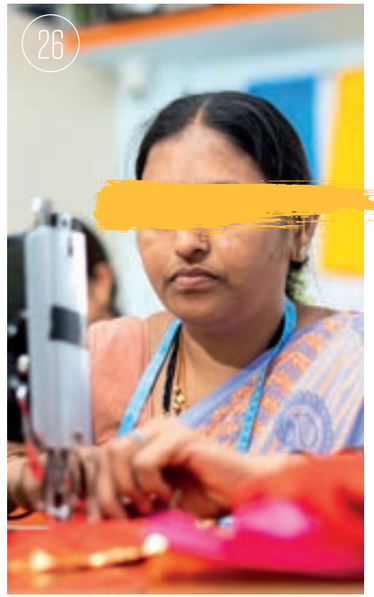


## ON PARADE

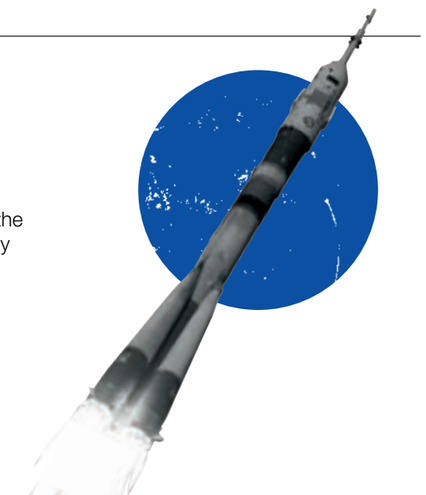


## FEATURES



## BA2 EXTRA





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# ON PARADE

## Highlights from the University of Bath

Community

Professor Raymond F. Schinazi (right) with Professor Philip Ingham FRS, the first holder of the Raymond F. Schinazi and Family Chair of Life Sciences

## £2m gift for Life Sciences at Bath

Drug development pioneer and alumnus Professor Raymond F. Schinazi has made a generous £2 million gift to establish the first Raymond F. Schinazi and Family Chair of Life Sciences at the University of Bath.

He says: “I came to the UK as an immigrant from Egypt, and I’m very grateful to Britain for providing me with an outstanding education. It’s so important to support underprivileged, bright students – especially those who are immigrants – and give them an opportunity to study at Bath. Now it is my turn to give back and to make this world a better place.”

After completing an undergraduate degree and PhD in Chemistry, Raymond went on to have an outstanding career in the pharmaceutical industry, where he was a key player in the creation of antiviral drugs against diseases such as HIV and hepatitis B, and a cure for hepatitis C. Around 94% of HIV patients take one of the drugs he developed.

The inaugural Chair, Professor Philip Ingham, joined the University in summer 2023 as Head of the Department of Life Sciences, bringing with him a wealth of experience as a geneticist.

“Raymond is a hugely inspiring figure whose pioneering work illustrates what the life sciences can achieve,” says Philip. “His research has been instrumental in turning HIV from a virus humanity was effectively defenceless against into something that can be managed with drugs, allowing patients to lead normal, healthy lives.”

He continues: “We’re very grateful indeed for this gift, which will support our efforts to emulate his exciting and impactful work here at the University of Bath.”

Research

## Driving future transport: IAAPS research facility officially opens

IAAPS, a £70m new hub for green transport research, officially opened at the Bristol & Bath Science Park in September 2023. The facility boasts the South West’s first green hydrogen manufacturing plant. IAAPS pairs industry – at both a local and international level – with cutting-edge research. Early partners carrying out climate-friendly research include McLaren, Ford and Shell.

Hydrogen research at the University has also been boosted by £11m in funding for UK-HyRES, bringing the project’s total funding to over £26m. This initiative will focus on alternative fuel technologies that are less harmful for both the environment and for society.

UK-HyRES is a collaboration between universities including Portsmouth, Sheffield, St Andrews, Surrey, University College London and Warwick. It is led by Professor Tim Mays from our Department of Chemical Engineering.


9kg of green hydrogen can be produced per hour on-site at IAAPS



**154** sports scholars have studied at Bath in the past decade alone, thanks to the programme set up by Dr Tom Hudson

Community

## Tributes paid to Dr Tom Hudson

Bath’s first Director of Sport, Dr Tom Hudson, sadly passed away in December 2023. Tom held the post from 1971 to 1992, during which period he was instrumental in setting up the UK’s first sports scholarship programme, as well as the opening of Founders Hall – the first sports hall on campus.

Stephen Baddeley, the Director of Sport, paid tribute to his predecessor, saying: “As a former Olympian, Tom was the inspirational driving force for sport at the University.”

Research

## New patch for needle-free drug delivery

**Trypanophobia sufferers can breathe a sigh of relief, as new technology developed by Bath scientists could be in use within a decade – eliminating the need for injections. The patches, each smaller than a pound coin, are covered in tiny microneedles.**

These painlessly deliver precise dosages of medication beneath the first few layers of skin.

The devices are made from a gel-like material and are cheap to produce and customise. In trials carried out at the University, they have been used to administer antibiotics that proved effective against E. coli and Staphylococcus aureus bacteria.

“Injections are invasive and expensive, and they don’t suit everyone,” explains Dr Hannah Leese from the Institute for Sustainability. “A lot of people are needle-phobic and are understandably reluctant to receive medicine by injection even when treatment is really needed. Others are ill-suited to injections – for instance, elderly patients with thin skin.”

Hannah hopes the patches will be ready for patient use within the next five to ten years.

Community

## Team Bath Heart wins world hackathon

An artificial heart produced by engineering students at the University was the winning device at the first-ever Heart Hackathon in October 2023. The competition’s final stage saw the team of six, led by Mechanical Engineering student Fleur Upton, deliver a 15-minute presentation and face questions from a panel of experts. They were scored on research quality, technical innovation and commercialisation efforts.

Fleur says: “Getting to work on the project has been incredibly rewarding, so to win the competition is really the icing on the cake.”

The team’s prototype device can automatically adjust flow rate in a similar fashion to a real heart. It could in theory be used to replace the organ in people with cardiovascular diseases, as a stopgap while they await a donor heart.

Community


On New Year's Eve 1978, Moles opened its doors for the very first time. It closed in December 2023

## Legendary Bath nightclub closes

**Moles, a mainstay of the city's student nightlife since the 1970s, sadly shut its doors for the last time in December 2023. During its 45-plus years beneath the pavements of George Street, the venue hosted gigs from an unbelievable lineup of artists, including Oasis, Ed Sheeran and the Manic Street Preachers.**

Alumni shared their memories on Facebook:

"I worked there for two years (2002-2003) as door staff. It feels like I lost a piece of me."

"Battle of the Bands was always a fun evening! Either playing with my own bands or watching the other great names like Fun With Knives, Hop Skip and Go Naked, Purple Parsnips…"

"I saw PJ Harvey there. She was so loud I had to put the something in my ears to protect them… The only paper I had on me was the stubs in my cheque book, which does date this a bit."

"What's my life membership worth now?"

Join the conversation on Facebook **@bath.alumni.community**

Community

## Eight honorary grads join alumni community

**We were delighted to grant honorary degrees to eight inspirational figures during our graduation ceremonies in July 2023 and January 2024. Social entrepreneur Dr Anne-Marie Imafidon MBE was among the honorees, celebrating her work to promote diversity in STEM.**

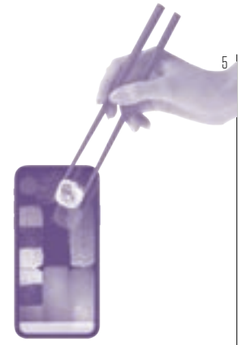
"The work I do is as important now as it was when I started [women in STEM society] Stemettes more than ten years ago," she says. "The STEM field shapes life as we know it and is having an impact on all of society."

Other recent honorary graduates include airline executive Robin Hayes, engineering leader Claire Smith, scientist Professor Sir Mark Welland and NASA astronaut Anne McClain (read an interview with her on page 22).



# 1,370KG

**worth of carbon dioxide emissions avoided thanks the sale of short-dated food on campus via the Too Good to Go app**



Research

## Buzzwords

**What our researchers are talking about**

### Ukrainian
The 2022 invasion of Ukraine accelerated a shift from Russian language to Ukrainian on social media, according to research from the School of Management

### Immersion
Bath computer scientists have found that a strong emotional response is essential for you to feel fully connected to a virtual reality environment.

### Angiosperm
The ancient ancestors of magnolia and the orchids lived in the time of the dinosaurs and survived the mass extinction that killed 75% of all life on Earth, says a new study from the Milner Centre for Evolution.

### Phubbing
Snubbing your partner for your phone can have a negative impact on your work performance as well as your relationship, according to a new study.

### Vibrotactile
Bath engineers are developing a glove and armband that gives people with upper limb prosthetics a sense of touch through haptic feedback such as vibrations.

Research

## New Institute for digital security

**The Institute for Digital Security and Behaviour is a new initiative to leverage Bath's unique expertise and address the ever-growing challenges posed by technology.**

It aims to solve global security challenges and pulls together academic staff, researchers and PhD students from across the University, including the Department of Psychology; School of Management; Department of Politics, Languages & International Studies; and Department of Computer Science.

The Institute provides a single entry point for work with industry and Government, involving stakeholders from the public sector, industry and policy to deliver world-leading research and impact.

Research

## £12m grant for food research hub

Bath's work to bring the future of food ever closer continues with the launch of the Cellular Agriculture Manufacturing Hub (CARMA). The seven-year multidisciplinary project is supported by a £12m EPSRC Sustainable Manufacturing Hub grant and is led by Professor Marianne Ellis from our Department of Chemical Engineering.

The Hub aims to make food systems environmentally, economically and socially sustainable through cellular agriculture techniques – using laboratory processes to 'grow' meat and other consumable products. Producing meat in this way dramatically reduces carbon emissions and land use when compared with traditional agriculture.

CARMA's goals include scaling up manufacturing technology to increase yields; developing a sustainable supply chain for tissue engineering; and engaging with both policymakers and the general public.

"I am incredibly excited and thankful that the EPSRC have recognised the opportunities the emerging field of cellular agriculture brings to achieving net zero and addressing food security," says Marianne. "Our initial focus will be [cultured meat] and [palm oil alternatives], but as the Hub expands we expect many other cellular agriculture products to benefit from the research programme."

CARMA is a collaboration between UK Research and Innovation and the universities of Bath, Aberystwyth, Royal Agricultural, Birmingham and UCL.

Community

## Sustainable food success on campus

**The University's Sustainable Food Commitment has made significant steps to reduce the environmental impact of food provision on campus over the past year.**

These practical measures focus on the areas with the largest climate impact, and include efforts to minimise food waste, including a community larder in Wessex House; sourcing milk from a local dairy in Chew Valley; and using seasonal produce wherever possible.

Disposable cups have been entirely removed from our catering outlets, which has saved over 150,000 single-use items since September 2022. Customers can even choose to purchase a reusable box for their pizza in the Lime Tree refectory, earning themselves a discount on their food with each use.

Research

## 20 years of death studies research

**The 2024/25 academic year marks the 20th anniversary of the University's Centre for Death and Society (CDAS). This leading international research centre examines the social contexts of the end of life and its aftermath.**

Over the past two decades the Centre has conducted a wide range of policy-relevant research. Its themes span diverse topics from funeral poverty and care homes, to heat retention and intergenerational relationships. In 2017, Professor Malcolm Johnson from the Centre was involved in Channel 4's show Old People's Home for 4 Year Olds.

The anniversary will be marked by a series of events and publications throughout the year. Follow CDAS on X and Facebook for more.

Research

## In a nutshell

**What's on today's specials menu? I'm famished.**

We like to call it the 'Disease in a Dish'.

**Doesn't sound appetising, to be honest.**

You're thinking of the wrong type of dish: this is a petri dish, not a dinner plate. Essentially, scientists have devised a way of producing miniature brains in the lab, grown from human stem cells. This then gives the researchers a self-contained model to study how age-related neurodegenerative conditions develop. Hence, 'Disease in a Dish'.

**This restaurant is getting more and more sci-fi by the second.**

You've only heard the half of it. In addition to offering scientists a front-row view to the progress of diseases, the technique also provides the opportunity to study the role that a gene called Angiogenin (otherwise known as ANG) plays in conditions such as frontotemporal dementia, motor neurone disease and Parkinson's.

**That's gene-ius.**

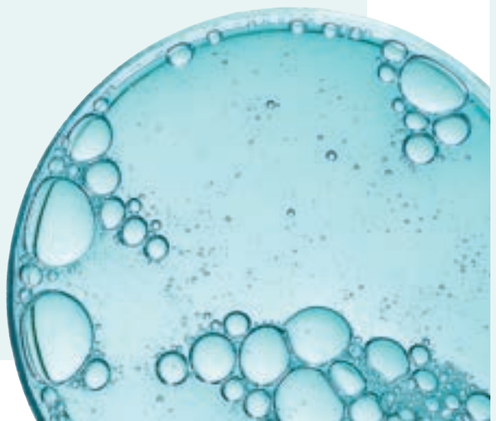
When ANG is functioning normally, a team from the Department of Life Sciences found, it's central in pacing how quickly stem cells turn into more specialised types of nerve cells in the brain. If ANG carries a mutation, however, it keeps stem cells in their immature form for longer – which then affects the cells in their adult form.

The study found that the mini-brains grown from cells of people with ANG mutations had striking neurodevelopmental defects.

"This suggests nerve-cell degeneration may be primed by defects occurring during early development," says Dr Vasanta Subramanian, who led the research.

**If only there were Michelin stars for scientific research, eh?**

Indeed. This discovery highlights the importance of Angiogenin in protecting us from diseases associated with ageing. Vasanta explains: "I envisage a time when we will be identifying people who are susceptible to these diseases, screening them for genetic mutations and offering early intervention gene therapy to fix the defects."





# 5 things about Professor Turi King

**Get to know the DNA detective, presenter, author and new Director of Bath's Milner Centre for Evolution.**

### 01
**Indiana Jones was her inspiration**

Growing up in Canada, Turi wanted to be a doctor, at least, until a certain Dr Jones – Indiana Jones – inspired her to try an archaeology course one semester. She was hooked. "I came to the UK and studied archaeology and anthropology at Cambridge," says Turi. "I remember sitting in a lecture about how the Romanovs' remains were identified using osteological analysis and DNA and I thought, 'I'd like to do that.'" Years later, after completing a PhD from the University of Leicester in genetic genealogy, Turi got her wish. When the remains of a 'lost' King of England were rediscovered, she was tasked with identifying him.

### 02
**Richard III: solving a 500-year-old cold case**

"When I was asked to be part of the Richard III project, they said, 'Don't worry, we'll never find him. It'll be half a day of your time,'" laughs Turi. The reality was years of investigation and mounting public interest as she analysed the ancient DNA – a process that involved extracting teeth from the monarch's remains. "One of the biggest things going through my mind was 'I cannot screw this up; the world's media is watching,'" she recalls. By comparing the mitochondrial DNA from the tooth with that of two living relatives, and combining it with the other evidence, Turi and her team proved it was Richard III: the last English king to die in battle.

### 03
**TV's DNA detective**

You can see Turi using her expertise to solve mysteries around ancestry and genetic disease, and even crime, in BBC's *DNA Family Secrets and* Apple TV's *Unearthed: Ancient Murder Mysteries.* "When I'm giving life-changing information to people, such as finding their biological parents, it's as if you can see them changing in front of your eyes – what they thought about themselves and who they are shifts," she says. "It's incredibly moving and I feel a huge responsibility."

### 04
**Tracing Attenborough ancestry**

Speaking of ancestry, Turi carried out an award-winning study into British hereditary surnames: "They're passed down the male line, and so is a piece of DNA known as the Y chromosome," she explains. "The question was: are men alive today with the same surname related?" By testing the DNA of men all carrying the same surname – including Bath honorary graduate Sir David Attenborough – she found they were likely to be genetically linked: "I found that 90% of Attenboroughs must descend from an original Mr Attenborough, who probably lived near the village of the same name centuries ago."

### 05
**A natural career evolution**

Turi joined Bath as the Director of the Milner Centre for Evolution in April. "Alongside growing the public engagement output of the Milner Centre, I'll be bringing my expertise in ancient biomolecules to add to the research portfolio here," she says. Part of that will be establishing a clean laboratory, which is specially designed for working with ancient and forensic DNA samples: "You can look at how DNA sequences have changed over time, which is a natural fit for the Centre, and I hope will benefit students in genetics and evolution for years to come."

Photo: Carl Vivian

# SCIENCE OF SPORTS STARS



PROFESSOR **SEAN CUMMING** WORKS WITH THE PREMIER LEAGUE AND SPORTING BODIES AROUND THE WORLD TO FIND FUTURE CHAMPIONS, REDUCE INJURY AND HELP YOUNG ATHLETES REACH THEIR FULL POTENTIAL.

Words **Jodie Tyley**


Harry Kane is the all-time top goalscorer for Tottenham Hotspur and England, but the final whistle was almost blown on his career when he was just 12 years old. Later, former Arsenal academy boss Liam Brady admitted to releasing the budding footballer for being "a bit chubby".

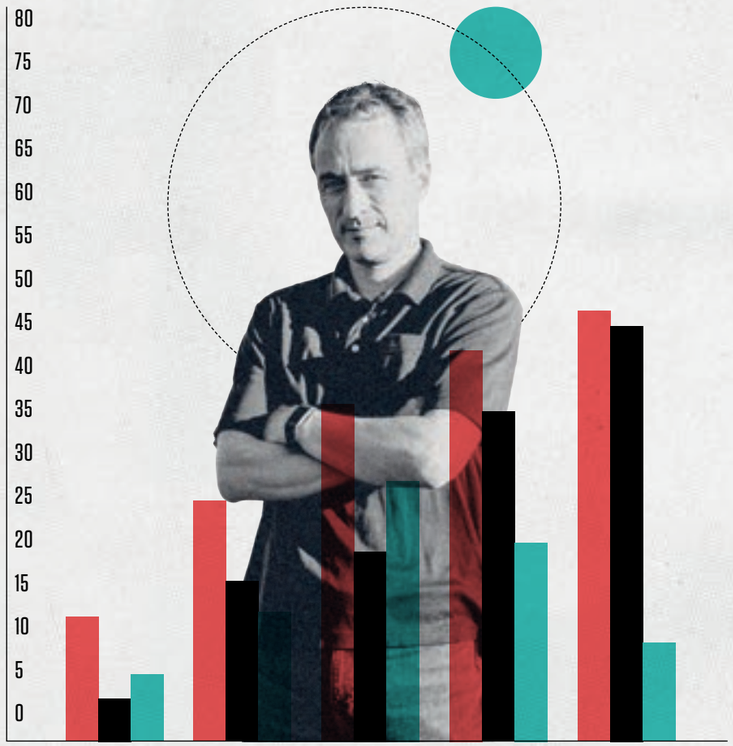
"I was definitely a late developer," Harry told OneFootball. "I didn't physically develop until I had a growth spurt around 15 years old and caught up with some of the other guys in the age group... it took me until probably 21 until I felt like I was physically in really good shape."

He was one of the lucky ones, and was eventually picked up by another club – but how many other would-be superstars have slipped through the net before realising their true potential? There isn't a "crystal ball", the ex-Gunners chief grumbled. No, there's something better: biobanding.

Professor Sean Cumming from our Department for Health is an internationally recognised sports scientist and expert in growth and maturation. He's implemented a clever method of calculating how tall a child will grow in the future by using their current height and weight, date of birth and their parents' height.

"By knowing what their future height will be, we can assess how physically developed they are for their age and sex at any given point in time," says Sean. The children are then grouped by their physical maturity rather than their age – levelling the playing field among budding athletes by giving the smaller, later developers a chance to shine, and challenging the bigger, early developers in a way that supports their progress, too.

"We know from the data that smaller kids will eventually catch up and there won't be any differences between early and late developers. Often, they end up being taller as adults as they grow for a longer period," he adds. "The problem is, if you're trying to identify the best talent at say 13, you're going to go with the early developers every time because they've won the genetic lottery of being the first to obtain the physical and athletic advantages of puberty."




Professor Sean Cumming is an expert in growth and maturation

## Game, set, match

Development varies so much during adolescence that there can be as many as six years' biological difference between children of the same age – giving those taller, stronger and bigger early developers the upper hand in most sports. In the long term, however, this could be their downfall if they're not stretched enough in their development. The Lawn Tennis Association (LTA) grew wise to the problem, and enlisted Sean's help in 2015.

"The LTA had noticed the top kids in every age group, for both boys and girls, were the tall, early developing kids," he explains. "There were some 12-year-olds who were over six foot [1.82 metres] who were excellent tennis players, but once they stopped growing and the other kids caught up, the coaches realised it was just a temporary advantage."

> "The expertise available at Bath has provided a valuable resource to the Premier League and its Clubs."
>
> **Matthew Green**, Head of Elite Performance at the Premier League

Sean set up systems of measuring and monitoring players' growth and the bearing this had on selection biases. What he found was that a bias towards early maturing boys started aged 12, while for girls it was around nine because puberty naturally starts earlier for them. Despite late developers making up 15% of the population, they had little representation as players progressed through the system.

"For sports such as tennis, being taller than the opposition is going to offer a major advantage," says Sean, "but imagine a 10-year-old girl who's five foot five [1.67 metres] – it's tall for that age group, but it's incredibly small for an adult female tennis player. So these girls weren't developing the kind of game they'd need in the future in order to be successful."

Biobanding isn't a new phenomenon, as Sean points out. It's been used in combat sports such as judo and boxing, where age and weight are considered for children's safety, for decades. But this was the first time it had been used to address selection bias.

Hearing of Sean's work with the LTA, the English Premier League got in touch wanting to tackle the same issue. Director of Football Development Ged Roddy, former head of Team Bath, was developing the Elite Player Performance Plan to nurture a new generation of homegrown talent at a time when clubs were heavily investing in international players.

"Ged sat down with the academy heads and they all agreed they had problems with growth and maturation," Sean explains. "They didn't know how often to measure it, the best way to measure it or how to interpret that data, but they all had this belief that they were investing in big, early-maturing boys and potentially losing out on some later-developing talent."

Sean and colleagues launched a screening project, measuring the players every three to four months. Not only did this data tell them whose biological clock was late, early or right on time, it also, crucially, meant they could tell who was going through a growth spurt and at greater risk of injury.

"Children usually grow relatively steadily, about five centimetres a year, and it's all in the legs and arms," explains Sean. "In puberty, the growth is in the torso and during a growth spurt, they can grow ten, sometimes 20, centimetres per year, so it can be really quite rapid."

"We ran workshops across the country," he continues, "educating sports scientists and medical staff on how to effectively measure and understand child development. At the same time I was delivering educational workshops on growth and maturation for the academy coaches on behalf of the English FA. Suddenly, we started seeing clubs make decisions based on growth and maturity. They started biobanding."

## Scoring results

The world's first youth biobanded football tournament kicked off in 2015 between the youth academies for Reading, Stoke, Norwich and Southampton – the latter also trains here at the University of Bath. Players were matched by maturity rather than age, seeing some 'playing up' with older children and others 'playing down'.

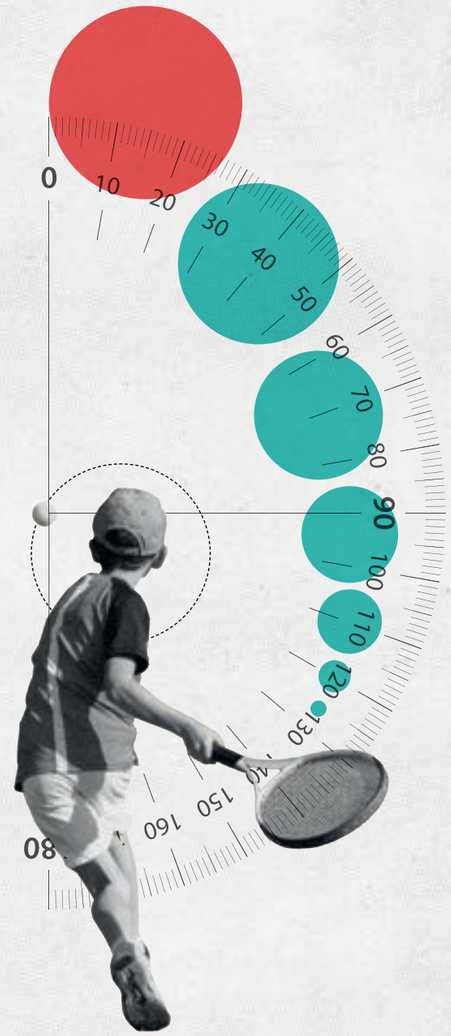
Without their physical advantages, early maturers had to find new ways to succeed. They had to think faster and release the ball quicker. For the late developers playing against younger children, they had the opportunity to command the game and show the coaches their skills. For Sean, it was a chance to find out what the players really thought.

"What we found was that both the earlies and lates loved the concept for completely different reasons," he tells us. "The earlies came back saying, 'It was difficult, but it was a better learning environment – the older boys were mentoring me, and I was making friends.'

"The late developers were saying, 'Yes, it was less of a challenge', but they had a chance to demonstrate their abilities because even if technically, tactically, and psychologically they might be the better athlete, sometimes they just can't compete [against larger players]. For those players to survive the system, they have to be off-the-charts and when they eventually come through as the best player, the last thing clubs want to see is them in the opposing team." Like Arsenal losing Harry Kane to Tottenham.

> "There can be as many as six years' biological difference between children of the same age"

In recent years, Arsenal has worked closely with Sean to implement biobanding. Their academy's former Head of Sports Medicine and Athletic Development, Des Ryan, has spoken of how such insights helped identify talent such as Eddie Nketiah, who currently plays for the first team, and Folarin Balogun, who recently joined Monaco for €40 million.



"They were classic late developers who often struggled when they were going through their growth spurt as well," explains Sean. "Because the coaches knew where they were in their development, they were much more capable of managing them effectively."

Des adds: "Sean was a great support to me and the team at Arsenal Academy. It resulted in aligned assessment and interpretation of growth and maturation in Premier League academies. It helped us understand the individual better and thus provide a high level of support. There are numerous examples of how we helped players in the context of them being early, on time and late developers, which could not have happened without the excellent support and education from Sean."

Des is currently Director of Sport and Physical Wellbeing at the University of Galway and Chairperson of the Gaelic Games Athletic Development working group, bringing these insights and experiences to the sporting community in Ireland.

## Exercise restraint

An important part of managing athletes' development is monitoring growth spurts and adjusting training programmes to reduce injury. Sean explains: "We know that if a kid is at 85% of their future height, their growth spurt is about to take off and that at 90%, they're growing incredibly rapidly, with bones growing quicker than muscles and tendons. That's when injuries like Osgood-Schlatter's and Sever's disease come in." To prevent this, Sean and his University of Bath colleague, Dr Sean Williams, work with clubs to tailor their training programmes, swapping intense sessions for ones focused on improving mobility and building core strength. The results have been remarkable.

"We worked with AFC Bournemouth for a year and by swapping one training session per week for players going through growth spurts, we reduced injuries by 70% and the amount of training time lost by more than 90%. Injuries can have a huge impact on an athlete's future career," he continues. "You're not getting the chance to train and develop, and you're more likely to pick up future injuries. We have a number of PhD students starting with the Scottish FA and Manchester City who will be investigating this."

> "If a kid is at 85% of their future height, their growth spurt is about to take off"

Other sports are reaping the benefits of biobanding, too. Sean's past PhD students, Dr Siobhan Mitchell and Dr Tejal Sarika Patel, carried out research in ballet and gymnastics, respectively, where the selection bias is reversed. Lower body fat and a longer leg-to-torso ratio are traditionally favoured, and as formal selection strategies coincide with puberty, those who mature earlier may not make the cut, while those who mature later experience increased training and testing at a time when they're growing rapidly. Both can be harmful physically and psychologically.


Siobhan said of her findings: "Those who more readily conform to the physical, social and psychological ideals are the dancers who tend to progress. Young dancers can enter full-time, vocational training from when they are just 11 years old, training up to six days per week. As a consequence, differences in the timing of maturity have important implications for health, talent identification and development."

Working with the national bodies, One Dance UK and British Gymnastics, they developed education resources on how to support athletes during those crucial points in their development. "We want children to grow into healthy adults," Sean adds, "because most aren't going to be professional sportspeople and we want to make sure we're looking after them."

Biobanding might seem like a no-brainer, but there has been some pushback from sports psychologists. "There was some criticism that biobanding would ignore psychological development, but that isn't the case at all," he explains. "Clubs such as Southampton actually align their psychological support for the boys based upon whether they are playing up or down.

"The big, early developers are taught how to cope with failure, which will be an important skill in the future when they don't have the physical advantage anymore. In contrast, the late developers who are playing down are taught about leadership and mentoring. We've seen the same benefits for girls, having worked with US Soccer."

As Sean is keen to point out, biobanding isn't a replacement for age groups, but an additional part of the programme that exposes young athletes to new challenges, helps them reach their goals and reduces risk of injury. Wouldn't it be great if it were introduced in schools, too? Sean thinks so. In partnership with the charity Podium Analytics founded by former F1 boss and Bath honorary graduate, Ron Dennis, the aim is to apply what's been achieved with the Premier League and share that knowledge and understanding with schools nationwide.


> "Early developers are taught how to cope with failure"

"We're creating a free, online educational programme that all schools can access," says Sean. "The hope is that young people – not just those in performance pathways – benefit from fairer opportunities in sport."

**How tall will your child grow?**

Find out with our biobanding widget for children aged between five and 17 years old.

# Olympic Games: class of 2024

## OUR SPORTS SCIENCE RESEARCH IS RANKED AS WORLD LEADING, AND WE'RE 1ST FOR SPORTS SCIENCE IN THE UK AND TOP TEN IN THE WORLD FOR SPORTS-RELATED SUBJECTS*, BUT ATHLETES WHO TRAIN AND STUDY HERE HAVE ALSO MADE THEIR MARK.

Did you know Bath-based athletes have won medals at every Summer Olympic and Paralympic Games since Sydney 2000, and all but one Winter Olympic Games since Salt Lake City 2002? Tokyo 2020 was the most successful yet, with our sports stars bringing home 21 medals – 11 of them gold. This victory was followed by an unbelievable 33 medals at the Birmingham 2022 Commonwealth Games.

With weeks to go until the Paris Olympic and Paralympic Games, we look back on the students, alumni and Bath-based sportspeople who earned a place on the podium in Tokyo 2020.

** 98% of our submitted research for Sport & Exercise Sciences, Leisure & Tourism was ranked 'world leading' or 'internationally excellent' in the Research Excellence Framework 2021; 1st for Sports Science in the UK in the Guardian University Guide 2024; 7th in the world for sports-related subjects in the QS World University Rankings by Subject 2023.*

"Tokyo 2020 was our most successful Olympics yet"

# Tokyo 2020 Olympic and Paralympic Games roll of honour

**Bath-based athletes won medals in swimming, modern pentathlon, wheelchair fencing and paracanoeing.**


- Tom Dean (x 2)
- James Guy (x 2)
- Freya Anderson
- Joe Choong
- Kate French
- Anna Hopkin
- Calum Jarvis
- Matt Richards
- Piers Gilliver


- James Guy
- Piers Gilliver
- Dimitri Coutya
- Oliver Lam-Watson


- Piers Gilliver
- Dimitri Coutya (x 3)
- Oliver Lam-Watson
- Stuart Wood




Bath alumni and Olympic champions in modern pentathlon, Kate French and Joe Choong



# Tom Dean: medal machine

**The record-breaking swimmer is striving for five medals this summer.**

'Tom Dean Medal Machine': not just the catchy title of his new podcast series, but also a name well and truly earned. The Mechanical Engineering student and former Bill Whiteley Sports Scholar became the first British swimmer to win two gold medals at a single Olympics in 113 years at Tokyo 2020.

Life changed overnight. Returning to his student digs in Bath, where he trains at the University's pool, he received a hero's welcome. Even when we meet on campus several months after, a student shouts: "Great job, man! I was cheering you on at 3am!"

"Nothing even comes close to the Olympics"

"I don't think a day's passed where I haven't been recognised, which is pretty surreal for a swimmer" says Tom. "Everyone has been really lovely, and I've been fortunate to go to some really cool events off the back of my results and meet some awesome people."

Red carpets, Wimbledon and even Buckingham Palace beckoned where he received an MBE, but now Tom's back in the water training towards his five-medal target at the Paris Olympics. It would be the most ever from a Team GB athlete at a single Games. Tom doesn't let the pressure get to him, though, and he describes the night before a big race as 'relaxed'.

"You can't think, 'The next two minutes of my life is going to dictate the future' – you can't put that on yourself," he says. "So, before a race I just go through the normal routines we've been practising for years."

Paris is bound to be a different experience to Tokyo, where Covid-19 restrictions confined Tom to the athletes' village and the pool. "Olympic village life was so cool," he recalls. "10,000 athletes from all over the world at the top of their game – weightlifters, basketball players, gymnasts – people that have trained their whole life to be in the shape they're in and allow their bodies to do what they need to do. And you meet so many people, especially in the dining hall – a two-storey building with every cuisine you can imagine."

He continues: "Being part of Team GB and the history and honour that carries – it's just so special. There is nothing like the Olympics. Nothing even comes close."

# A day in the life of Olympian Tom Dean

**7:15**
Breakfast: porridge with fruit and nuts

**8:00-10:00**
Aerobic set in the University's Sports Training Village (STV) 50-metre pool, swimming between 6-7,500 metres

**10:30-12:00**
Gym session
Refuel in the STV café with a full English breakfast
Lunch at home: chilli con carne with rice and a banana

**14:30-15:00**
Core session, stretching and mobilisation

**15:00-17:00**
Back in the pool for a 6-6,500-metre training session
Snack: protein bar
Dinner at home: stir-fry
Evening snack: yoghurt with granola, fruit, peanut butter and honey

**Bed 22:30**
7,000 calories per day
14,000 metres swum




# FORTITUDE & VISION

**Outgoing Vice-Chancellor and President Professor Ian White DL FREng reflects on five years at the helm where, in the face of global crises and uncertainty, Bath has emerged with a strong, supportive community and success in both education and research.**

**How would you sum up your experience as Vice-Chancellor and President of the University of Bath?**

At my welcome event five years ago, I noted how pleased I was to return to Bath [having been here as a Professor of Physics in the 1990s]. This was down to Bath being such a special place, with three particular areas of strength: its people, its professionalism and its pioneering spirit.

My five years as Vice-Chancellor have only served to reinforce my earlier views, and it has been a real pleasure to lead such a dynamic and expert group of colleagues, to work closely with our dedicated and energetic Students' Union and to have the support of our excellent alumni and friends. I have been so impressed by our students who are well rounded, talented and, unsurprisingly, in great demand by employers. They are really special.

We have built such a strong sense of community and this has enabled us to navigate some difficult times: the Covid-19 pandemic, the cost of living crisis, changes in regulatory environment, natural disasters and global conflicts to name but a few. In each of these scenarios, our community has come together to provide support and friendship to those affected. This collective approach has enabled us to respond to challenges with fortitude and vision.

**So much has been achieved during your term of office. What are you most proud of and why?**

It has been so gratifying to see the University's reputation go from strength to strength. Moving into the top 5 in the Complete University Guide and into he top 10% of universities globally [in the QS World Rankings] has been a significant achievement and one that has only been made possible by effort and excellence across the range of our activities. Strong performance in the Teaching Excellence Framework, Research Excellence Framework and Knowledge Exchange Framework, is key to our financial sustainability, and provides strong foundations for even greater success.

**What have been your personal highlights of being back at the University of Bath?**
There is a distinctiveness about Bath that has always felt special, and although the University has grown dramatically since I first joined in the '90s (there were fewer than 4,000 students then compared with more than 20,000 now), the sense of community and indeed the academic culture has been retained.

My gratitude is perhaps best summed up in the words of a former colleague, Sir Robert Jennings, namely that, "One of the most precious things in life is that of belonging to societies of people who have important interests in common. Such membership is a powerful aid to civilised living and is especially to be recommended at a time like the present, which seems to be so good at cultivating loneliness." I am most grateful to the University of Bath community which has enriched me and so many others.

**What role have alumni and friends played in the University's success?**
The University is very fortunate to have alumni who are so extraordinarily committed to its present and its future. We have over 150,000 alumni living and working in more than 170 countries around the world, representing a powerful and influential part of our community. We are also very blessed to have such strong support from the city of Bath and from our friends in the region, and we are mindful in turn of our role within, and our responsibility to, the local community.

**In our first interview with you in 2018, you said Bath's research strength was the emphasis on making a difference, and the challenge would be to increase our research power. How have you addressed that challenge, and what would you say are our research strengths now?**
As a researcher and entrepreneur at heart, I am delighted to see Bath's research growing so strongly despite the sectoral challenges, gaining increasing recognition and having significant impact on our society as a whole. The University's work in propulsion, including the use of hydrogen; sustainable food production; AI; digital human augmentation; and water-based early warning systems for example is groundbreaking and will help to address some of the most important global challenges.

The research power challenge remains but we have made great strides in attracting significant research grants and we are part of a number of large consortia, working with other universities, local government, business and industry to address major societal issues.

> "The University is very fortunate to have alumni who are so extraordinarily committed to its present and its future"

**You were welcomed as Vice-Chancellor in 2018 and just over a year later, Covid-19 changed everything. What stands out as significant from that period of challenge and uncertainty?**
I think we differed from some universities in that we were keen to return to in-person activity as soon as possible, within the framework of the health and safety of all in our community. This decision reflected our concern to provide, where possible, what students wanted whilst caring well for our staff community. It was not taken lightly, but as a result of extensive consultation within our community. Our students were keen to return to campus, and we were keen to give them the best experience possible. It took a huge collective effort, but we were able to make the necessary adjustments to keep everyone safe and to resume more normal levels of engagement quite quickly.

It was so special to see the power of a community pulling together for a common aim. Our students, our academics and colleagues working in estates, accommodation, hospitality, security and professional services all played a significant role within the framework of our devoted Governance leaders. Colleagues went above and beyond to help others both within the University and also in the local community, manufacturing PPE and providing accommodation for health workers.

**Can you tell us about your experience of being involved with the Gold Scholarship Programme, of which your wife Margaret White is the Patron?**
At the outset, may I stress that if anything has been achieved during my time at Bath, the real credit should go to Margaret, who has done so much in so many unseen and seen ways. In respect of your question, Margaret and I have been truly humbled to spend time with the Gold Scholars. They are exceptional and inspirational young people who relish their time at the University, making the most of the opportunities offered to them. We are so grateful to the alumni and friends who sponsor, mentor and support these students, helping them to access opportunities that might not otherwise be possible.



**We hear you have regular breakfasts with student clubs and societies. How many have you had and what have you taken away from these meetings?**
I think we have held about 15 in the past year alone and I really value having the opportunity to talk to students representing so many areas of University life. Hearing from different cultural groups, our postgraduates, peer mentors, faith groups, academic representatives, and those involved in volunteering and extra-curricular activities provides first-hand insight into students' daily activities. The breakfasts have confirmed how special our student community is, with so many students working selflessly in exceptional ways. The conversations help to inform the decisions we take as a university.

**What are your observations about higher education today – your concerns and hopes for the future?**
Despite the well-publicised challenges, it is an exciting time to be part of higher education. With a more global outlook than ever before, increasing emphasis on inter-disciplinarity, enterprise and partnership, and opportunities to make a real-world difference, possibilities abound. Recognising the importance of our civic role, I have also been deeply grateful for the engagement, advice and support that our Bath and North East Somerset Council and the West of England Combined Authority have shown, as have other regional leaders and organisations. The foundation that has been laid will become increasingly important in the coming years.

> "Moving into the top 10% of universities globally has been a significant achievement"

I feel the University is well placed to deal with the known challenges in the next few years. We have been financially prudent and this will serve us well as funding restrictions continue. Our increasing reputation for excellence means that we are able to attract good staff which, coupled with the fact that we have a newly revitalised curriculum framework, means that undergraduate application rates remain strong. We have also made great strides in anticipating the benefits as well as the threats that come with advancements in cyber security and AI.

**What message would you give your successor?**
The University of Bath is a very special place, with strong values and a unique identity. My predecessor noted that she had been very lucky to be Vice-Chancellor here and I also feel very fortunate. I wish my successor every success and happiness in the role.

Professor Ian White will step down from his role as Vice-Chancellor and President on 31 July 2024 and Professor Phil Taylor will take up office on 1 August 2024.

# BABY STEPS

## EVER WONDERED WHAT GOES ON IN YOUR LITTLE ONE'S HEAD? STEP INSIDE THE BATH FACILITY AIMING TO FIND OUT...

What impact does screen time have on children's development? Does neurodivergence affect how youngsters sleep? How does the presence of a touchscreen influence how parents interact with their babies? All these questions are being studied here, in our unique Bath Babylab.

Officially opened in 2023, the lab provides facilities for our researchers to look inside young minds, using high-spec eye-tracking physiological, biophysical response monitors and two-way mirrors. This research is helping to drive best practice recommendations, including Canadian government policies on paediatric screen time, and the UK's National Childbirth Trust guidelines for parents and early years practitioners.

"I hope that by testing whether various factors improve developmental outcomes, we can offer parents an evidence base that will help them to make more informed decisions about the factors that they have control over within their child's early environment," says Professor Rachael Bedford, an Honorary Research Fellow in the Department of Psychology and one of the lab's founding members.

What's more, the research is entertaining for its young participants, as Rachael explains: "The challenge with testing babies is that if they're not enjoying it, then they won't do it, unlike in some adult psychology studies. We spend a lot of time designing our studies to be engaging and interactive and as fun as possible, because the longer we can keep the little ones paying attention, the more data we can collect!"

Interested in getting your child involved? Sign up to the Babylab database at **bit.ly/BabylabResearch**


## WATCH AND LEARN

This eye-tracking device uses a sticker attached to a baby's forehead, which reflects infrared light back to a camera that monitors where the baby is looking. Researchers use the device to measure how quickly they can switch their attention towards something flashing up on the screen.


## ON THE MOVE

When wearing these mobile eye-trackers, children are tasked with finding a series of puzzle pieces dotted around the room. The glasses then measure their eye movements to identify how their attention is diverted by the screens they encounter in the environment.

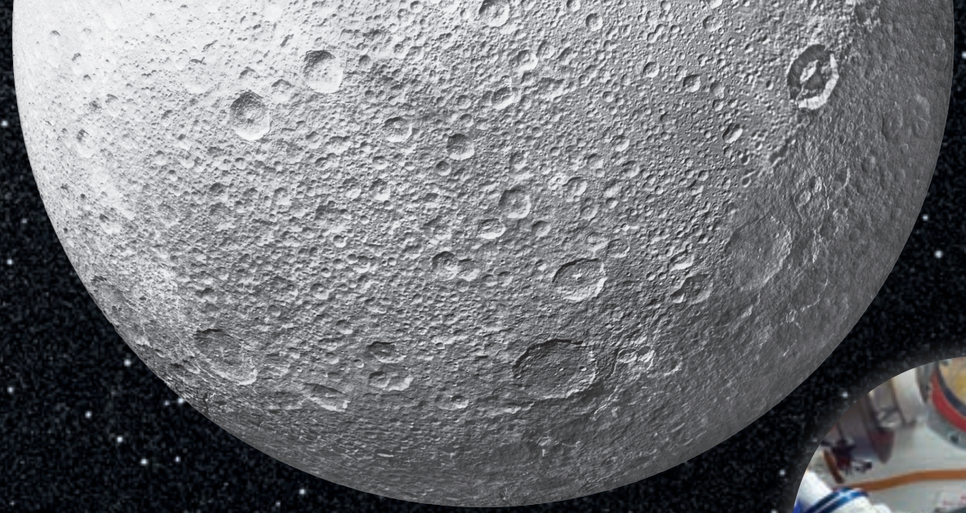
## SWITCH IT UP

Prism glasses can be used to alter a child's perception of what they're seeing – by flipping an image upside-down, for example. Researchers can then examine how quickly they readapt to 'normal' vision after removing the glasses using motor tasks such as throwing a ball into a hole.

## RESEARCH WITH IMPACT

One of our new Research with Impact PhD scholarships will be furthering research in this area. In a new collaboration with Norland College in Bath, the Norland Foundation is funding a PhD investigating the impact of screen time on neurodiverse children. Read more about these scholarships: **bit.ly/ResearchWithImpactScholarships**

# TO BATH AND BEYOND



NASA ASTRONAUT COLONEL ANNE MCCLAIN SHARES HER INCREDIBLE JOURNEY FROM CAMPUS TO THE COSMOS. SHE DISCUSSES WHAT IT'S LIKE LIVING ON THE INTERNATIONAL SPACE STATION, THE SURPRISING SIMILARITIES BETWEEN RUGBY AND SPACEWALKS, AND THE FUTURE OF SPACE EXPLORATION.

Words **Jodie Tyley**

Everything has been building to this moment. It's December 2018 and NASA astronaut Colonel Anne McClain is strapped inside the cramped Soyuz spacecraft, waiting for the countdown to commence. The noises, vibrations, views – they're all the same as the simulator where she's spent countless hours training for her first expedition – but this time, Anne has to remind herself there will be no going home after liftoff. In six hours, she'll be aboard the International Space Station (ISS) for six and a half months.

Reflecting on those moments of anticipation before the ultimate ascent, Anne says: "I was sitting there thinking, 'I have no idea what my evening looks like,' and I had the profound realisation that the dream I'd been pushing for and working for was maybe about to come true. I had this unexpected emotion of looking back and feeling really proud of my younger self."

Every decision she'd made had led to that moment – one where the sky wasn't the limit, but the beginning of an extraordinary adventure.

One of those choices that propelled her towards the stars was to enrol at Bath. Anne moved from the US Military Academy at West Point to study for a master's in Aerospace Engineering thanks to a Marshall Scholarship in 2002.

20 years later, Anne is a Colonel in the US Army, an engineer, testpilot and a NASA astronaut – and she's back in Bath to accept an honorary degree of Doctor of Engineering. "It was an incredible honour," she tells us when we meet after her graduation ceremony in Bath Abbey. "The University of Bath was such an influence so early in my trajectory that it's really special to come back."

Reflecting on her time here, Anne says that the people she met had as much of an impact on her as the time she spent researching and working on the subsonic wind tunnel on campus. "It was the first time I had lived overseas and so it was very formative for me to look back at my home and see it from a different perspective.

"The friendships and contacts that I made going to the University really helped inform my whole career going

> “Spacewalks are very physically and mentally challenging – you burn the metabolic equivalent of a marathon. I hit a level of exhaustion I’d only felt in the 60th minute of a rugby match.”

forward,” she continues. “The first time I realised that no matter what country we’re from, we all have a lot more alike than we do different, was right here at the University of Bath.”

When Anne wasn’t studying, she was on the rugby pitch and even went on to play Premiership Women’s Rugby and for the United States Women’s National Rugby Union team. She later discovered that the sport had prepared her for expeditions in unexpected ways. “It was interesting to me how many parallels there were between playing rugby and going to space, particularly doing spacewalks,” she says.

While on the ISS, Anne racked up more than 13 hours outside the spacecraft, carrying out repairs, upgrades and maintenance.

“Spacewalks are very physically and mentally challenging – you burn the metabolic equivalent of a marathon,” she explains. “You’re in the suit for six to eight hours with just a drink bag on you. I hit a level of exhaustion I’d only really felt in the 60th minute of a rugby match and you have to focus; you have to play smarter not harder. I remember thinking, ‘I know I can push through this because of those experiences.’”

It also must be challenging to focus when you have the entirety of the Earth in your eyeline. “It’s hard to describe the feeling of coming out of the airlock,” Anne admits. “I remember looking down and the only things in between me and the planet were my feet. I thought, ‘What an incredible view’ and, ‘What am I doing?! This is the craziest thing humans have ever done.’ Then, I got to work.”

The reality of floating in the dark void was a far cry from the world’s largest indoor pool, where astronauts train on full-size replicas of ISS modules. 40 feet [12.1 metres] deep, the water simulates the weightless environment of space. “At the bottom of the pool, we get to know the outside of the Space Station very well – we know where every handrail is, every piece of equipment and every wire – but what we can’t replicate when we train is how the Earth looks.

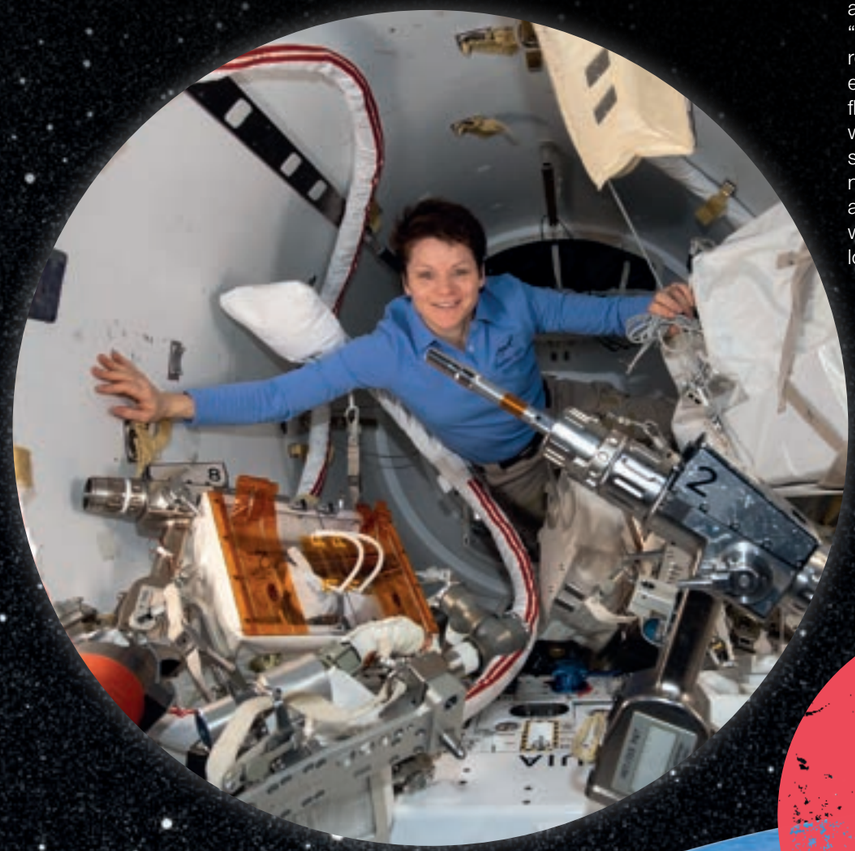
“You come back with an amazing perspective,” she continues. “You realise how small and fragile the Earth is. You don’t see borders from space but what you do see are natural disasters, or a volcanic eruption that affects multiple countries. You look down and realise we’re just humans on a planet and any of these differences and lines in the sand are drawn by us, and they’re certainly not worth fighting over.”

During her time on the ISS, Anne and her fellow crew members carried out hundreds of science investigations. “We interact with researchers all over the world and for a brief period of time, we’re the hands on their experiment,” she says. “It could be changing a petri dish, mixing chemicals to get a reaction, investigating flame, or something like drawing your own blood at certain intervals – so we end up becoming the research as well. Every day is certainly unique.”

Back on Earth, Anne’s career has been just as distinctive. A high-achieving engineer with three master’s degrees and published research, she’s also a Master Army Aviator with more than 2,000 flight hours in 20 different aircraft. Her ambition since the age of three was to reach for the stars, and in 2013, she became the youngest astronaut on the NASA roster.

Now, she’s shooting for the Moon. Anne is one of only 18 astronauts selected for the Artemis programme, a NASA-led mission to put man – and the first woman – back on the Moon. “It’s very exciting to be a part of and I feel like I’m either going to walk on the Moon or one of my good friends will and both of those are absolutely beyond my wildest dreams.”

She continues: “We’re going back with better technology, with a much larger spacecraft that’s capable of more exploration and research, and we’re going to the Lunar South Pole where there are more resources, including ice, which we’ll be able to utilise.”



The goal is to establish a long-term base to prepare for the next giant leap: sending astronauts to Mars.

Her advice to anyone looking to follow in her boots, from Bath and beyond, is not to eliminate yourself. “From someone on the inside, who has sat on the board for astronaut selection, I tell every single person that there is not a demographic that is prohibitive for the astronaut programme,” she shares. “Your sexuality, gender, religion, even now your country of origin – what matters is what you bring to the plate. What we look for is people who have the technical ability to be part of the mission and who are looking to make an impact so much beyond them as one person.”

Since her expedition, Anne feels a sense of duty to share her experiences – a responsibility she says many astronauts feel overwhelmed by. “When you fly, you realise you’re a representative of humanity,” she explains. “This wasn’t Anne McClain’s flight: it was your flight and everybody who’s reading this. My responsibility is to share that with them in some way that not only do they hear what I’m saying and be able to picture it but maybe they will feel something that makes them look at their own life a little differently.”

> “You come back with an amazing perspective. You realise how small and fragile the Earth is”

Photos: NASA / Bill Ingalls / Victor Zelentsov

# HOW CAN WE BREAK THE CHAINS ON FORCED LABOUR? RESEARCHERS FROM OUR SCHOOL OF MANAGEMENT ON HOW WE CAN PROTECT WORKERS' RIGHTS IN SUPPLY CHAINS.

Words **Emma Senior**

"There is quite a lot of modern slavery in the UK," states Dr Johanne Grosvold. "It's a problem that's seen as happening elsewhere and so it might be in your product supply chain – but actually what we know from research is that it's also very prevalent in the UK hospitality industry, in construction and other, similar industries."

Modern slavery – defined by the UK Government as 'situations of exploitation that a person cannot leave due to coercion, use of force, abuse of vulnerability, deception or other means' – is horrifyingly widespread. According to the International Labour Organization, over 27 million people worldwide were subjected to forced labour in 2021. With businesses relying on increasingly complex and globalised supply chains, what can they do to avoid it?

Johanne recently partnered with the Modern Slavery and Human Rights Policy and Evidence Centre, the London Universities Purchasing Consortium and charity Unseen UK to examine the intersections between climate change and modern slavery in public procurement. While the two might seem at first glance to be disparate issues, the effects of climate change are causing those migrating away from affected countries to be especially vulnerable to human rights abuse.

"People thought they were doing everything they could"

"We wanted to understand what role public sector purchasing can play in combating modern slavery because, unlike the private sector, the public sector has more opportunity to collaborate without fear of accusations of price fixing and monopolisation. That means that actually the sector can be quite forceful in facilitating stakeholder demand for change," she explains. "The public sector buys goods and services from private companies. If these companies change practice to accommodate the public sector, then that should have a multiplier effect to impact on the private sector, even if the private sector cannot collaborate in the way the public sector does."

Johanne and her fellow researchers carried out over 70 hours of interviews and focus groups with procurement professionals. As a result, their recommendations included greater engagement from procurement teams with modern slavery risks, specialised training for staff who may encounter victims of modern slavery, and stronger public tendering requirements on managing modern slavery.

## Best Efforts

The key, she thinks, lies not in criticising organisations that are found to be falling short – "I genuinely think the majority of people we spoke to, hand on heart, thought they were doing everything they could" – but rather praising those taking actions to improve.

"I think a sensible way forward is to say that this is not a problem that's going to go away, but if you can show that you have systematically implemented best practice to minimise the risk, then you shouldn't be punished," Johanne explains.

She continues: "One of the people we spoke to with lived experience of modern slavery said that they don't want firms found to have relied on purchasing from organisations with employees living in these conditions to be punished. If they try to remedy the situation, then that's great – they should be held up as examples of what you can do. By making organisations feel like they can't identify the problem for fear of it besmirching their reputation, you're making the problem harder to address."

"We know it's illegal, but how do you hold firms accountable?"

What's more, the UK's Modern Slavery Act was only adopted into law as recently as 2015. "There was already legislation on the books of different kinds – but it wasn't called modern slavery," asserts Professor Andrew Crane, Director of the Centre for Business, Organisations & Society. He points out, however, that forced labour was already illegal.

"From a business point of view, one of the main challenges is: how do you deal with modern slavery in the supply chain? We know it's illegal, but how do you then make firms accountable? And the legislation didn't go very far on that," he says. "In fact, the Government weren't originally going to have anything to do with business in the Act, but they changed at the eleventh hour and introduced a new section on transparency and supply chains."

Andrew has seen research in the field rapidly gather momentum since he published his first paper on the subject in 2013: "I think it would be reasonable to say that I when I published [that] paper, it was mainly just me doing research



# Hiding in plain sight

> “The political rhetoric of modern slavery encourages these very short-term, reactive responses, which don’t address the underlying issues.”

on [the overlap between] business and modern slavery in business schools.” In contrast, last year he brought together the largest ever gathering of business and modern slavery researchers and practitioners for the second annual conference on the topic.

## Building credibility

His most recent project focused on how non-governmental organisations (NGOs) can most successfully get involved in tackling forced labour: “If NGOs want to work with companies in developing solutions, how do they get taken seriously? What we’re hoping to do is provide NGOs with more of a road map for how they can develop the power to be most effective.”

He found that the most important elements for NGOs’ credibility were being viewed as experts in their specific industry or country; having a good reputation within that industry; and having a deep connection to workers.

“Often the expectation is that companies are going to work with NGOs that are business-friendly,” Andrew continues. “And although that is generally true, in the case of forced labour it’s less so, compared to NGOs that are more deeply embedded in the workers’ rights realm and connecting directly with workers themselves. Those things were much more important than having a business-friendly approach.”

Action from NGOs was one of multiple interventions that took place in Leicester in the wake of a 2020 Sunday Times exposé of conditions in Boohoo’s factories. The fast-fashion retailer was found to be carrying out labour exploitation on a grand scale, leading to a clampdown from UK authorities. However, as Dr Pankhuri Agarwal points out: “The political

rhetoric of modern slavery encourages these very short-term, reactive responses, which don’t address the underlying issues.”

## Helping or harming?

Pankhuri is part of a team who carried out a study into garment workers in Leicester. What they found is that the people affected – primarily South Asian women – had since been left without “not just work, but also a sense of identity, a sense of social belonging”. They were left, as Pankhuri points out, with fewer choices than before.

While some men in the communities concerned had been able to find subsequent employment as taxi drivers, doing delivery work or in factories for other industries, the women were unable to do so. The geography of the city itself exacerbated this, as garment factories had been the only ones close enough to residential areas for women without transport to fit around childcare and school runs. What’s more, Boohoo has now simply moved its production overseas.

“There is so much evidence from across the globe that when you use the term ‘modern slavery’, you are encouraging approaches that are not targeting systemic issues,” she explains. Instead, governments should seek to address the wider factors that leave people vulnerable to labour exploitation in the first place.

Pankhuri continues: “Why are people lining up outside food banks? Why are they unemployed? Why can’t they find jobs? If women can’t travel for work, then what was the use of closing factories?”

A better intervention, she suggests, would be to pay attention to the initiatives that are already working, such as community centres run by local women’s groups to upskill people, and to invest in these. Criminal investigations are a blunt instrument that can harm the people they intend to help.

Another potential positive step would be a requirement for companies retailing in the UK to produce a certain percentage of their wares in UK factories – thus avoiding situations such as that in Leicester, where facilities are simply closed wholesale in response to labour exploitation allegations – with greater oversight to ensure that workers are paid the minimum wage and treated fairly.

“The ideal response would be to question, ‘Why are the media and the state using this modern slavery rhetoric? What purpose does it serve?’” says Pankhuri, preferring terms such as ‘forced labour’ and ‘labour exploitation’. “Modern slavery itself becomes a very fairytale issue [with one imagined villain]. In many ways, the label of modern slavery actually does a disservice.”





MP launches TV channel

BATH MP Chris Patten set the cameras rolling last week when Bath University’s CTV was launched.

Campus Television will be run by the students, and broadcast 24 hours a day including satellite television.

The channel plans to cover local news for the students, features and arts material for in and around Bath.

The channel took 18 months to set up and cost £5,000. Said Mr Patten: “This is a tremendous effort and will give lots of individuals technical journalistic experience.”

**February 1989: Bath MP Chris Patten marked the launch of the University of Bath’s student-run television channel, Campus TV (CTV). The channel was 18 months in the making and cost £5,000, the *Bath District Advertiser* reported in 1989. 35 years on and the cameras are still rolling. Recently, the CTV team won five awards at the National Student Television Association Awards 2024, including gold for Documentary and Factual for a reflective piece that marked this milestone year for the channel – available to watch on YouTube, @CampusTVBath.**

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

BA2 Extra

# CITY SECRETS UNCOVERED

## HOW WELL DO YOU KNOW THIS CITY OF ROMAN RUINS AND REGENCY ROMANCE? ALUMNUS AND MAYOR'S GUIDE, **ANDY GILSON**, SHARES NINE HIDDEN HISTORIES OF BATH.

Words **Andy Gilson** | Photos **Jake Armand**

### Meet your tour guide

**Andy Gilson (BSc Business Administration 1984), Mayor of Bath's Honorary Guide**

Andy graduated from the School of Management in 1984 and enjoyed a career in sales and marketing in the automotive industry. After retiring from Vauxhall in 2014, Andy and his wife Cathy (BSc Business Administration 1984) moved back to Bath, where they met as students. Since then, Andy has volunteered as a Mayor's Guide, leading tours around the city centre.

The Mayor of Bath's Corps of Honorary Guides is a voluntary organisation, established in 1934, that provides two-hour walking tours of Bath every day of the year, except Christmas Day. The tours are free and the Guides do not accept gratuities. There are around 90 Guides who provide this service to visitors from around the world.

For more information, visit: **www.bathguides.org.uk.**

## 1 Eastgate: the last medieval gate standing

"Venture behind the building that was originally the Empire Hotel in Orange Grove, and you'll find Eastgate – the only surviving gate from the medieval wall that surrounded the city. All the other gates – and virtually all the city walls – were dismantled in the 18th century due to the massive building expansion that took place in Bath. Only their names remain to describe areas in the city.

"This would have been the smallest gate and the passageway through it is called Boat Stall Lane, which leads down to the River Avon. At the time there were no bridges at this point along the river – just a ferry crossing – so limited traffic would have entered the city through this gate. It's also worth a visit as it illustrates how the ground level of Bath has risen over time, primarily due to flooding from the River Avon.

"Two other parts of the city where you can find remnants of the medieval wall are in Upper Borough Walls, opposite the old Mineral Water Hospital, and in the yard behind Marks & Spencer."

## 2 River Avon: so good they named it twice

"Sometimes I get asked if the River Avon is the same river that flows through Stratford, where Shakespeare was born, or whether it's the same river as the Avon in Salisbury, an hour's drive south of Bath. The answer is no, the UK has nine River Avons: five in England, three in Scotland and one in Wales.

"The reason why we have so many rivers with that name is that it derives from the Celtic word for river, which is 'afon'. When rivers started to be given names, there was clearly some confusion and they were simply named the River Avon, which literally means River River."

> "Virtually all the city walls were dismantled in the 18th century"

## 3 Pulteney Bridge: as seen on-screen

One of the iconic images of Bath is Pulteney Bridge and its weir. It was commissioned by William Johnstone after he and his wife, Francis Pulteney, inherited a rural estate on the other side of the river. Architect Robert Adam designed the bridge, which opened in 1774.

"Not only is it Grade I listed, but it is also a unique bridge in the UK – and one of only four bridges in Europe – that's lined with shops on either side. The other three are the Ponte Vecchio in Florence and the Rialto in Venice, Italy, and the Krämerbrücke in Erfurt, Germany.

"The first weir predated the bridge, as it was built in the 16th century, but the current iteration was built in the 1970s to further strengthen the city's flood prevention scheme. It features in the movie Les Misérables, during Javert's final scene (although actor Russell Crowe wasn't in Bath, just his stunt double). My wife has also asked me to point out that she kayaked down the weir during her student days!"

## 4 Plasticine: built in Bath

"A fact to bring back memories from our youth… well, at least for some of us! 15 Alfred Street, by the Assembly Rooms, has the claim to fame of being the location where Plasticine – the popular children's toy of the 20th century – was first manufactured.

"The house was owned by William Harbutt, a Victorian headmaster at a local art school. He invented this soft, non-drying modelling clay for his students in 1897 and soon realised it had other applications. For three years, it was made in the basement of his house but was so successful that he purchased a derelict flour mill in Bathampton and turned it into a Plasticine factory. This was the only place Plasticine was made until the factory closed in the early 1980s.

"The material was made famous by Bristol-based Aardman Animations' models, Wallace and Gromit."

## 5 Cue chalk: a potted history

"The Assembly Rooms are known for the elegant Ball Room and Tea Room, where the fashionable Georgians would party; however, in the 1820s a Billiards Room was installed in the building. It was run by a gentleman called John Bentley and one of the best players at the time, John Carr, used to play there. These two are jointly credited with the invention of cue chalk.

"Carr, who eventually became the world's first professional player, discovered that applying chalk to the tip of his cue gave him much better control of the cue ball. He and Bentley ground down ordinary chalk and sold it in pill boxes for two shillings and sixpence (a half-crown) each. So, the next time you watch snooker player Ronnie O'Sullivan chalking his cue, think of Bath."

## 6 A plaza in the Circus: wood you believe it?

"One of the memories most visitors take away with them is the Circus, an architectural gem of fabulous houses designed by John Wood the Elder, with its five beautiful trees in the centre. What is not so well-known is that when the Circus was completed in the late 1760s, there were no trees at all. The whole area in the centre was a lovely, paved plaza, until the current London Plane trees were planted in the 1820s.

"The trees are controversial in the Gilson household: my wife loves them, but I suspect John Wood the Elder is rolling in his grave. He designed the Circus so that whichever of the three roads you entered by, you would immediately see the magnificent architecture, but now for most months of the year the trees obscure the view. Either way, the Circus is full of fond memories for us as it was the scene for our graduation photos in 1984 after our ceremony in the Assembly Rooms."

## 7 Uranus: discovered in Bath

"From the back garden of 19 New King Street on 13 March 1781, William and Caroline Herschel discovered the planet Uranus. Herschel and his sister were astronomers that also made some of the finest telescopes available in the 18th century. Following the discovery, William Herschel was appointed to the role of the 'King's Astronomer', and the siblings moved to Windsor.

"Their house in Bath is now the Herschel Museum of Astronomy and it's well worth a visit to learn about the remarkable Herschels. William also discovered infrared radiation, and Caroline was the first woman to receive a salary as a scientist, have findings published by the Royal Astronomical Society and be made an honorary member in 1835."



## 8 Bath Olivers: a Georgian cure that takes the biscuit

"The Mineral Water Hospital on Upper Borough Walls was founded in 1738 to care for the impoverished sick. One of the founders, Dr William Oliver, believed that bathing in and drinking Bath's warm thermal waters was good for you. He developed a biscuit to help patients reduce their weight, as well as to offset the metallic taste of the mineral-rich waters.

"Eventually, the healthy and wealthy discovered that the biscuits were nice with some cheese and port, and when William died, he left the recipe to his coachman – who set up a biscuit-baking business. It passed through various owners until the Fortt company acquired it in the 19th century and are stilling selling their Bath Oliver Biscuits today."

"There are many more interesting facts about Bath, so next time you're in the city, I recommend you join one of the Mayor's Guides' walking tours. Every Guide follows a different route, so there are always new things to learn about this wonderful place. If you live in or around Bath and would be interested in learning more about joining our ranks, take a look at www.bathguides.org.uk and you'll find a section titled 'Becoming a Mayor's Guide', which is the start of the journey."

## 9 UNESCO: a double award-winner

"Bath is the only place in the UK and one of only 22 in the world that has two UNESCO World Heritage inscriptions.

"In 1987, UNESCO awarded the entire city World Heritage Status, based on six factors that make Bath unique. These are the natural hot springs, the Roman remains, the 18th-century architecture, the 18th-century town planning, the social setting in 18th-century Bath and finally the natural landscape setting.

"In 2021, Bath gained its second UNESCO World Heritage inscription when the 11 Great Spa Towns of Europe gained this status due to the impact they had had on European development from the early 18th century through to the early 1900s.

"If you would like to learn more about Bath and its World Heritage status, the recently opened World Heritage Centre in York Street is worth a visit and it's completely free."

"Bathing in the city's thermal waters was believed to be good for you"

# ALUMNI SPOTLIGHT

Visiting student Holly Anzani came to study economics and left with her future husband, a career on Wall Street and a lifelong connection to Bath.

Interview by **Emma Senior**

**Holly spent a year at Bath as a visiting student from the US and lives in New York with her husband Mark Anzani (BSc Electrical & Electronic Engineering 1980). After a career on Wall Street, she now gives back to Bath by volunteering on our US Foundation board, which oversees the disbursal of donations from the University's alumni and friends in the US.**

**The couple also provide opportunities for students through Gold Scholarships. In 2023, Holly became our first recipient of the President's Award in recognition of her longstanding support for the University.**

Holly and Mark met during their time at Bath

**Why did you choose to study at Bath?**
I was two years into my economics degree at Colby College in the US when I had the opportunity to spend my third year abroad. Bath was my first choice – the reputation of the economics department, combined with the allure of the city, made it an easy choice.

**Did you have a particular career in mind when you chose your course?**
I knew I wanted to pursue a career in finance and so chose an economics and finance degree. I was able to secure a position on Wall Street immediately upon graduation. I firmly believe that my year spent at the University of Bath was an asset during my interview process. The coursework was relevant, made me a strong candidate for the position and was a source of discussion with the investment banking professionals who soon became my colleagues.

**Can you tell us about your experience of studying here?**
Spending a year in Bath was a highlight of my educational experience. I made lasting connections with fellow students and professors. The excitement of being in a different country and experiencing a different educational setting, combined with living in such a unique city, made for many great memories.

One of my fondest will always be RAG Week parade. The theme was 'crime', so we recreated the Boston Tea Party on our float. I still have the Bath RAG t-shirt, which my daughter finds hilarious – a shirt that exceeds her age by a couple of decades!

**What was your experience as an international student studying here?**
I loved the challenge of moving to a new country, where I basically knew no one, and starting a new phase of my undergraduate experience.

I made it a goal to take advantage of extracurricular activities, such as joining clubs and travelling around the UK. It was an opportunity that I'd strongly recommend to anyone up for the challenge, as the rewards will remain for a lifetime.

**Describe your career journey since graduating.**
Although I'm now retired from Wall Street after a long and successful career, I currently use the skills I developed by volunteering for many different non-profits in the US. I also previously served as a board member of the University of Bath's US-based Foundation.

**What motivates you to support students through scholarships?**
I believe that universal access to education is vital to a thriving, dynamic society. We have been proudly giving to the Gold Scholarship Programme since its inception, supporting the University's goal to eliminate economic barriers to higher education.

Share your story with us by emailing **advancement@bath.ac.uk**



# BATH'S BEST CLUB

**Louis Sampson**
(MSci Sport & Exercise Science 2026)

**Situated just outside the city limits, nestled beside the Avon, sits a rowing club that embodies teamwork and excellence on the water: the Bath University Boat Club (BUBC).**

Established in 1967, BUBC struggled to find a permanent home until 2005, when it moved to Newbridge along with Minerva Bath Rowing Club. The location provides 4km of river for a scenic rowing experience and makes getting up for those 6.30am training sessions a little easier!

I'd never rowed until I went to a BUBC taster session as a fresher in 2021. I knew the sport was big at university level and remember watching the Oxford v Cambridge Boat Race on TV thinking, 'I'd like to give that a go.' It was a lot harder than expected but I was hooked. I've since volunteered to coach incoming novices and I'm on the Club's committee.

BUBC train multiple times per day

From the moment the boat hits the water to the final stroke, the team strives for nothing less than full commitment. This approach permeates every aspect of our club, from our rigorous training to our unwavering dedication to teamwork and sportsmanship. We have two training sessions a day, three times a week in winter (even more in summer), so it can be tough to balance with university and jobs, but we love it. The progress you make from being so dedicated is amazing – you see all these changes and you feel physically better for doing it. You think: 'If I can do that, what can't I do?'

What truly makes BUBC special is not just our achievements on the water, but also the tight-knit community that we have built off it. Our shared love for the sport and deep-rooted camaraderie help our members form bonds that extend far beyond the boathouse. In fact, a lot of us live together because we share the same lifestyles and ultimately the same goal of qualifying for the Henley Royal Regatta.

Whether we are celebrating our victories together or supporting each other through setbacks, we are bound through our shared sense of belonging.

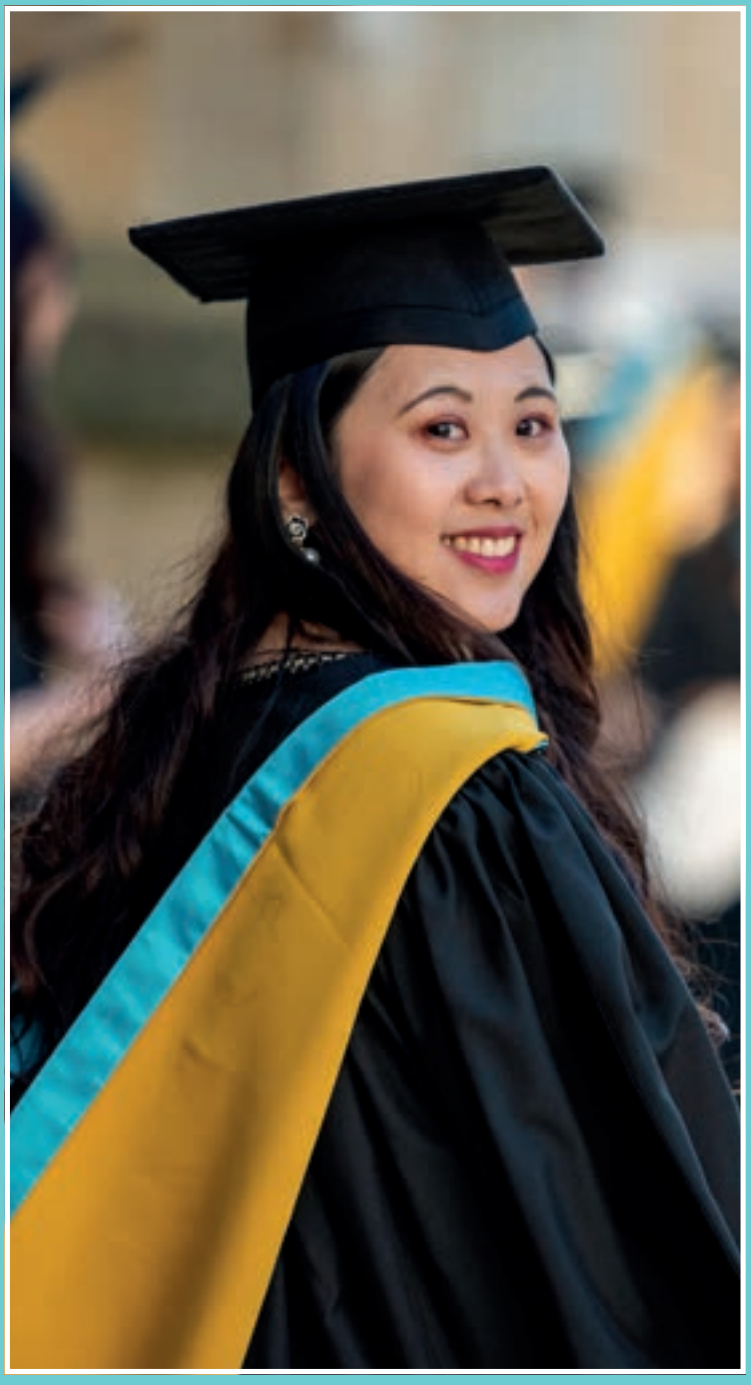
One of the hallmarks of our rowing club is the incredible support and involvement of our esteemed alumni. At our annual Henley Royal Regatta picnic, current students and alumni come together to share their passion for rowing – offering a great opportunity for building connections. We also have the University alumni boat club, known as Meles, which races throughout the year.

As of spring 2024, we have finished head racing season with some encouraging results, and now we are looking forward to our regatta season in both the men's and women's squads. Follow us on Instagram for the latest news **@crewbath_**

**Do you agree? Let us know!**
**advancement@bath.ac.uk**
**@uniofbathalumni**
**@bath.alumni.community**

# YOUR ALUMNI BENEFITS

## DID YOU KNOW AS A BATH GRAD YOU CAN...?



**Apply for free, lifelong Library membership**
Borrow books, access a selected range of e-resources and visit in person for study and research.

**Stay on campus**
Visiting Bath in the summer? Alumni get a 10% discount on all campus accommodation.

**Work out in the Team Bath Sports Training Village**
Alumni pay no membership joining fee and can take advantage of concession rates at our fitness facilities.

**Access careers support**
Careers appointments and information services are available to you indefinitely after graduation.

**Network on Bath Connection**
Swap careers advice with students and graduates all around the world.

**Hire top talent**
Recruit bright Bath students and grads. Email recruit@bath.ac.uk to offer internships, placements or graduate roles.

**Join an Alumni Chapter**
Network and socialise in your region. Get in touch for more information, or volunteer to set one up in your area.

**Return to Bath part-time, 100% online**
Further your career with a part-time, fully online master's that you can fit around work and other commitments with a 10% alumni discount. Find out more via **online.bath.ac.uk**.

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