BIN BROOK

SUMMER 2026

ROBINSON COLLEGE
CAMBRIDGE

Medicine special

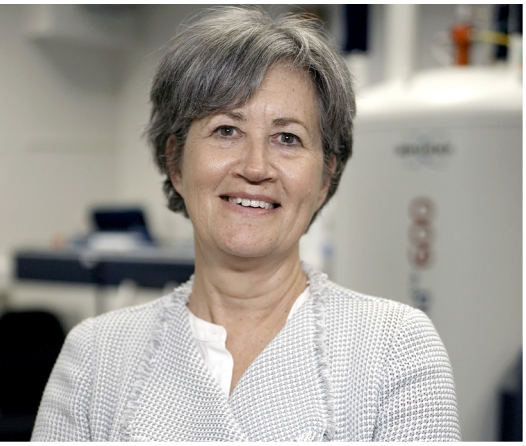
Broadening the experience of our medics
Dr Andrej Ćorović

Rethinking brain development & injuries
Prof Peter Hutchinson & Prof Duncan Astle

Pioneering cancer treatments
Prof Melinda Duer & Dr Bristi Basu

Alzheimers & the ageing process
Prof Gabriele Kaminski Schierle & Dr David Cox

Alumni success stories
James Harrison and Steve Fuller at Cycle Pharmaceuticals, Astrazeneca, and more









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Welcome

In this issue of Bin Brook, we focus on the pioneering medical research, clinical advances and industry success stories led by our Fellows and alumni. Their work is improving and extending lives around the world.

Innovation has been part of Robinson's character since its inception. Our founder Sir David Robinson was an entrepreneur, and the College was built in the spirit of enterprise and learning. Robinson continues to embody these values as we approach our 50th Anniversary in 2027.

So within this issue, we are proud to draw attention to the remarkable talents and achievements of our Fellows, whose work spans a broad spectrum of the biomedical field. Dr Andrej Ćorović writes about how he and others are enhancing the experience for medical students at Robinson, and how your generosity contributes to this. Professor Melinda Duer and Dr Bristi Basu report on new cancer treatments and ground-breaking research. Professor Peter Hutchinson, Professor Gabriele Kaminski Schierle and Professor Duncan Astle discuss their revealing work on understanding the human brain, how it ages, and how traumatic injury can best be treated.

We are also delighted to share with you the stories of some of our alumni in this field. James Harrison (an Honorary Fellow) and Steve Fuller at the remarkable Cycle Pharmaceuticals, and Dr Susan Galbraith of AstraZeneca, turn science into life-saving treatments. Dr David Cox is a specialist health and medical journalist, and Professor Adam Fox OBE is the founder of the Allergy Centre of Excellence. Thank you to all our contributors.

Please enjoy this edition. I hope it will leave you feeling inspired and curious, and proud to be a part of our extraordinary College.

Sir Richard Heaton KCB
Warden, Robinson College

NEWS IN BRIEF

Over the past academic year, we have been delighted to welcome:

- Dr Bristi Basu, Fellow in Medicine and Director of Studies for Part II Medicine (pictured far left)
- Dr Tom Crawford, Fellow in Maths (pictured middle)
- Dr Orsolya Petőcz, Godwin Fellow in History and Modern Languages (pictured right)
- Dr Iheanyi Onwuegbucha, Fellow in History of Art
- Professor William Hurst, Fellow in Asian and Middle Eastern Studies
- Dr Mar Rodda, Fellow in Classics

As well as Bye-Fellows: Dr Maitena Arakistain, Dr Lily Song, Professor Andres Sevtsuk, Professor Chunwen Hao, and Dr John Donegan-Cross.

AWARDS AND ACHIEVEMENTS

- Professor Nedunchezhian (Swami) Swaminathan, Fellow in Engineering, was elected as a Fellow of the Royal Academy of Engineering.
- Professor Gabriele Kaminski Shierle, Fellow in Chemical Engineering and Biotechnology, received the 2025 BBS Sosei Heptares Prize in Biophysics.
- Professor Anuj Dawar, pictured right, was elected to the Fellowship of the Royal Society.
- Professor Teresa Shawcross, Robinson Senior Member, received the Lykourgeio Prize from the Academy of Athens.

EXTRACURRICULAR ACHIEVEMENTS

- A Robinson-led production of Medea at the ADC Theatre received rave reviews. Adapted and directed by Dhyan Ruparel (English, 2025), the production included: Mina Strevens (English, 2025) pictured right, Krish Misra (Psychology and Behavioural Science, 2025), and Kyla Langdon (Classics, 2025).
- The Chapel Choir toured Germany, leading services in Berlin Cathedral, Thomaskirche and Nikolaikirche.

- Stan Norman (Natural Sciences, 2023), pictured left with team mate, Captain of the Cambridge University Cricket Club and Jersey men's national team player, led the Blues preseason tour to Mumbai.
- Other Robinson students selected for Varsity Blues teams included rugby players Charlie Cross (MML, 2024), Amal Warsame (Medicine, 2024) and Freya Sharp (History, 2025), alongside table tennis players Milly Kotecha (Classics, 2023), Kaicen Wang (Engineering, 2024) and Aniket Bhanushali (Natural Sciences, 2024).
- Congratulations to all our rowers who worked hard and rowed well this year. May Bumps successes included W1 who finished +2 over the week.

BROADENING THE MEDICAL STUDENT EXPERIENCE AT ROBINSON

DR ANDREJ ĆOROVIĆ (NATURAL SCIENCES AND MEDICINE, 2004), FELLOW, AND DIRECTOR OF STUDIES IN MEDICINE

The Cambridge Medicine course has a reputation for being rigorously scientific in the pre-clinical years but we are just as committed to producing well-rounded, clinically sound and empathetic doctors. The fact that all students remain in Cambridge for the full six-year duration of the Medicine course also offers an opportunity for "longitudinal" development and an ongoing role for College involvement into the clinical years.

At Robinson, I am keen for students to consider their medical career as starting from the moment they commence the course and to make the most of opportunities to broaden their experience and develop their CVs. To that end, we have recently launched the **Dr Alex Yui Hui Studentships in Medicine**, funded by a very generous donation from one of our Medicine alumni, which offers grants of up to £2,000 per year for pre-clinical students (in the first three years of their course) to undertake a research project or clinical internship during their summer vacation. The inaugural studentships will take place this summer.

Clinical Electives are also undertaken by all students in the summer of their fifth year and offer an opportunity to experience clinical practice and/or gain research experience over a seven-week period. Most students use this opportunity to experience medical practice in economically-developing regions of the world, thus giving a broader perspective to their "first-world" experience of Medicine here in the UK. Recent destinations have included Sri Lanka, Thailand, Uganda and Vietnam, as well as "developed" countries such as Singapore and the USA. Consistent feedback from students is that the Electives are invaluable in broadening their perspectives on medical practice and patient care.

Chamin Halahakoon, final year medic, pictured (back row, far left) with the team at Bach Mai Hospital, Vietnam, said: "By observing how healthcare is delivered in diverse settings, I aim to be more adaptable and empathetic to cultural dimensions in patient care and to approach healthcare from a global perspective."

George Toumbas, final year medic, pictured at the Mayo Clinic (right), Rochester, Minnesota, USA, said: "Seeing senior surgeons discuss difficult cases with honesty and humility had a lasting impact on me, and it reinforced the importance of a culture that prioritises accountability and shared learning. I also benefited greatly from the mentorship I received, including advice on surgical judgement, career development, and how to approach training in a sustainable way."

George pictured (left) with a colleague at the Mayo Clinic

Electives are a mandatory component of the Cambridge Medicine course and yet can represent a significant financial undertaking. At Robinson, we are keen to ensure that our students are not financially constrained in their choice of Elective placements. To that end, and thanks to very generous benefactions we are, at present, able to offer each of our fifth-year medics a £1,400 grant towards the cost of their medical Elective via the **Chaffield Shaw Medical Support Fund** and the **Fox-Nasim Elective Studentship**.

Since students complete all six years here at Cambridge, the programme can better integrate pre-clinical and clinical content throughout the curriculum at a university-wide level. At Robinson, we offer our pre-clinical students early clinical exposure in parallel to their Preparing for Patients course with a mixture of in-house and multi-College initiatives. We were one of the first Colleges to sign up to the **Integrated Biomedical Problem Solving (IBiPS)** course, a teaching programme for first and second year students that is designed and delivered by local GPs, wherein students have an opportunity to clinically contextualise each term's basic medical science content. Medicine alumna and current Senior Member, Dr Naomi Deakin (Medicine, 2008), has also led on delivering pre-clinical/clinical "linker" sessions, where pre-clinical students get clinical teaching and experience in simulated real life clinical scenarios with input from our own clinical students, thus not only contextualising their pre-clinical studies but also fostering a sense of community spirit and cooperation across the year-groups in College.

I am immensely grateful to all of our supervisors who directly contribute to the teaching of our medical students, as well as to all the donors whose generous benefactions have enabled us to support our students in broadening their medical student experience. As we look forward to the College's 50th Anniversary next year, it is my sincere aim that we continue to establish Robinson as a top College choice for students wishing to study Medicine at Cambridge.

RETHINKING BRAIN INJURY: FROM THE OPERATING THEATRE TO GLOBAL INNOVATION

PROFESSOR PETER 'HUTCH' HUTCHINSON, FELLOW AND DIRECTOR OF STUDIES IN CLINICAL MEDICINE AT ROBINSON AND DIRECTOR OF THE NIHR HEALTHTECH RESEARCH CENTRE (HRC) IN BRAIN INJURY

Traumatic Brain Injury (TBI) is frequently described as a "silent epidemic." The scale of the challenge is immense: in 2022-2023 alone, almost 680,000 people in England attended Emergency Departments with concerns regarding TBI. While many of these cases involve mild symptoms, a significant minority face persistent, life-altering disabilities.

As a neurosurgeon and researcher, my career has been defined by a dual mission: to save lives in the operating theatre and to build the national and international infrastructure to ensure that pioneering medical research reaches every patient who needs it.

My journey in research delivery has always been grounded in clinical outcomes. Perhaps the most significant milestone in my clinical research was leading the RESCUE trials. These studies were designed to address a fundamental question in neurosurgery: does a decompressive craniectomy - the surgical removal of a section of the skull to manage brain swelling - actually improve long-term survival and quality of life? The findings were definitive: we demonstrated that this procedure significantly reduces mortality, with 66% of survivors becoming independent at home or within their community.

The results of this study have had a fundamental impact on the way medicine is practised. Our research informed new protocols that have been adopted in international clinical guidelines by organisations such as NICE in the UK and the Brain Trauma Foundation in the United States. It is a powerful reminder that high-quality clinical trials are the bedrock of innovative medical procedures.

TBI is also a major public health issue in the world of sport. My work as Chief Medical Officer for the Formula 1 British

Grand Prix and as a member of the Independent Concussion Panel for England Rugby allows me to integrate NIHR research into safety protocols. As such, we supported the publication of the first UK-wide Concussion Guidelines for Grassroots Sport in 2023, providing clear, consistent procedures for players and coaches to identify and manage head injuries, ensuring a safe "return to play". By mapping the research landscape, we are also addressing emerging concerns, such as the long-term impact of "heading the ball" in football.

Mita Brahmbhatt,pictured above, is Centre Manager at NIHR and works alongside Hutch to help secure funding for TBI:

"Many promising ideas for brain injury management fail because the pathway for NHS uptake is often underfunded. To tackle this, the team at NIHR HRC in Brain Injury established the i4i FAST (Funding At the Speed of Translation) Programme with the Department of Health and Social Care and the Ministry of Defence resulting in £3.2 million investment across the UK to advance new technologies. To date, we have leveraged £14 million for new tools for brain monitoring and treatment to move from the drawing board to the bedside."

Innovation must be inclusive to be truly effective. Locally, we have developed a research inclusion strategy to reach under-served communities, including rural populations and those in deprived areas. An area of focus is the 24% increase in TBI incidence among women since 2005, often linked to domestic partner violence which has historically been under-represented in research.

Our vision also extends globally, as Director of the NIHR Global Health Research Group on Acquired Brain and Spine Injury, I lead a programme across 59 countries. We have built a global registry to track outcomes and have trained over 30 specialists in low-and-middle-income countries. In Zambia, for example, our collaboration helped increase the number of neurosurgeons from just two to eight, fundamentally changing the landscape of care in that region.

None of these achievements would be possible without a dedicated multidisciplinary community. At Robinson. I am privileged to be part of an environment that fosters cross-sector thinking. Whether we are mentoring the next generation of clinical academics or hosting innovative public engagement events - such as our "no heading" charity football match with Head Safe Football, pictured below - the goal is to make research a conversation that involves everyone.

Hutch (left) pictured with Dr Judith Gates, Chair and Co-Founder of Head Safe Football, and Niklas Marklund, Professor of Neurosurgery in Lund, Sweden.

The academic department I lead is now the largest of its kind in the UK, and I am immensely proud that Cambridge is ranked first in the country for neurosurgical research. By continuing to bridge the gap between pioneering science and practical medical procedures, we can ensure that "silent" injuries no longer lead to silent suffering.

NEW RESEARCH UNCOVERS THE FIVE ERAS OF THE HUMAN BRAIN

Q&A WITH PROFESSOR DUNCAN ASTLE

Professor Duncan Astle, Robinson Fellow and Deputy Director of the MRC Cognition and Brain Sciences Unit, is helping to reshape how we understand the human brain. Drawing on brain scans from nearly 4,000 individuals, his research – led jointly with Dr Alexa Mousley - identifies five distinct "eras" of brain development—from childhood through to late ageing:

1. Childhood – from birth to age nine
2. Adolescence – from nine to 32 years old
3. Adulthood – from age 32 to 66
4. Early ageing – from 66 to 83 years old
5. Late ageing – from 83 onwards

Rather than a smooth, gradual process, these findings suggest that our brains evolve in stages, each with its own strengths, vulnerabilities, and patterns of neural wiring.

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Q: What first motivated you to investigate whether the brain develops in distinct "eras"?

A: The way we study the human brain is undergoing a major revolution. One key ingredient is the size of the datasets available – we worked with collaborators to amass a dataset of over 4,000 brain scans that cover the entire human lifespan. The second key ingredient is the computing power needed to build models about how brain organisation changes. These two big changes in our field inspired us to think about asking this question about "eras" and "turning points". Until about five years ago, it was simply not possible.

Q: The idea that, aged nine, childhood ends and adolescence begins and then extends into our early 30s challenges common assumptions. How might this inform how we approach major life milestones?

A: In cultures across the globe we assign different ages to adulthood. We can serve in the Armed Forces from 16, drive from 17, drink from 18. But there is nothing special about these ages. As far as our brains are concerned they do not reach a stable adult plateau until our early 30s. In fact, many major life milestones – such as starting a family – now align with this model.

My own feeling is that we should regard our 20s as an extended adolescence, and indeed many of us make big changes when adulthood finally does arrive.

Q: To what extent can life experiences—like education, stress, or parenthood—shape or shift these brain phases?

A: The phases are universal. But different phases of life are differentially sensitive to experiences like stress. We already know that there are sensitive or critical windows. These can cut both ways. For instance, in the first epoch of life we need vital linguistic and social inputs. If those are missed, then we cannot recover those functions. Conversely, experiencing stress can have a very negative impact depending upon which phase of life we are in.

Put simply, whilst there are certainly innate predispositions, the way that our brains organise in different phases of life is heavily impacted by environment and experience. But the phases themselves are common to us all.

Q: Could this framework of "brain eras" eventually be used in clinical settings or have other benefits in how we support cognitive health?

A: I honestly think it already is. For instance, we already know that adolescence is an extended period of vulnerability for mental illness - 75% of all mental illness will have its first onset before we're 25 years old.

What this study shows is that the brain is constantly reorganising itself across the entire life-span. It may well be that a whole host of different conditions can be situated within these newly defined epochs of life.

Q: How might this research evolve with advances in AI or neuroimaging technologies?

A: We are already there. This study was only possible because of population-level neuroimaging - data sharing at a scale previously unseen. Information gathered was combined using a branch of artificial intelligence called machine learning. Interestingly, this is increasingly becoming a two-way street. Things we've learnt about how the brain develops and organises are already being incorporated in the way artificial systems, even the chips themselves, are designed. And later this year we are launching the UK's first Master's course in exactly this space – the MPhil in NeuroAI and Intelligent Systems.

Q: What are the next big questions your team is hoping to answer?

A: We're focusing very heavily on early development. In fact, we are currently running a study with 6-week-old babies. We are scanning their brains and taking blood samples to explore how the development of the immune and nervous systems are interlinked. Understanding these connections could help us determine how our genetic background shapes our likelihood of experiencing mental illness. In turn this could open the door to policy interventions or even targeted interventions that start much earlier in life.

Find out more about this fascinating research into the development of the human brain:

PROFESSOR MELINDA DUER LEADS INNOVATIVE NEW RESEARCH ON 'FREEZING' BRAIN CANCER CELLS

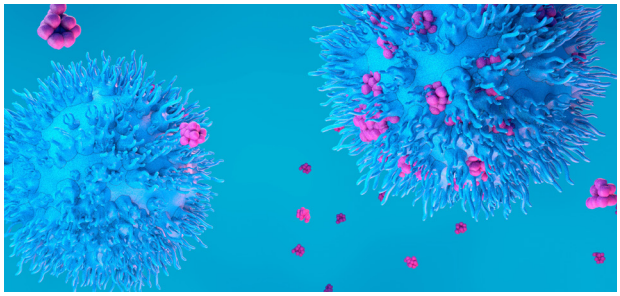
Robinson Fellow and former Deputy Warden, Professor Melinda Duer (pictured above at Robinson), is a leading figure in biological and biomedical chemistry and heads the Duer Research Group at the Yusuf Hamied Department of Chemistry at the University of Cambridge, where she was the first woman to be appointed a lectureship in the Department.

Melinda's passion for science was inspired by her chemistry teacher, Mr Trevithick, from her local state comprehensive school in Cornwall. The first in her family to go to university, she went on to study Natural Sciences at Cambridge, specialising in Chemistry. Melinda's research career at Cambridge now spans almost 40 years, and she continues to challenge conventions, utilising interdisciplinary chemistry to find ground-breaking solutions for real-world medical issues.

A pioneer in her field, Melinda's work focuses on uncovering the molecular structure of tissues and how these change with ageing and disease. Melinda's work draws on decades of expertise in molecular structure and nuclear magnetic resonance (NMR) spectroscopy, a technique that allows scientists to observe how molecules behave in complex biological systems. Her research aims to understand conditions ranging from osteoporosis to cancer, to inform life-changing new therapeutic approaches.

Melinda explains the work of the Duer Research Group: "We essentially work out the molecular structure of tissues like our skin, bones and tendons. The reason we do that is that with degenerative diseases, things go wrong, often drastically, and that causes the cells in those tissues to essentially misbehave. To do something about that we first need to know what's going wrong with the tissue, how the tissue structure changes, and then we can start to piece together why the cells react the way they do, and we can start to counteract that."

"My research group is very diverse in every respect and includes people from all around the world. We make a point to come together as a team to celebrate each success, however small, as these can accumulate to effect real change."



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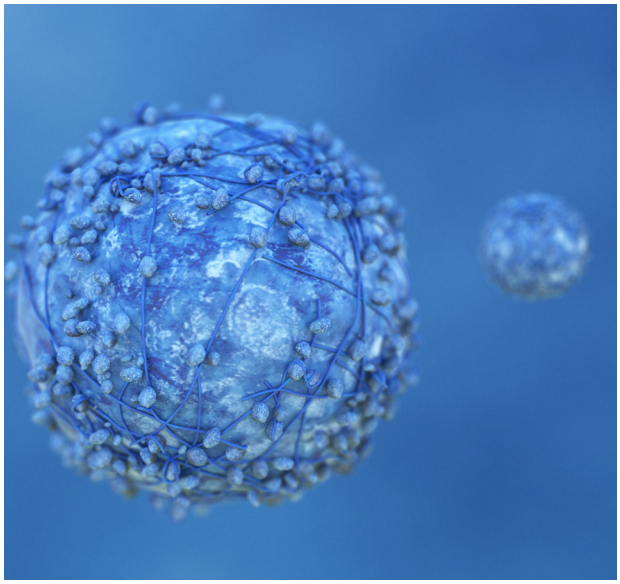


The latest work from Melinda and her research team focuses on glioblastoma, the most common and most aggressive form of brain cancer which has a five-year survival rate of just 5%. To combat this cancer, Melinda decided they should take a radically different approach: rather than attacking tumour cells directly, they sought to change the environment around them to make it less fertile ground for tumour cells.

"We didn't have to kill the cells — we simply changed their environment, to one that instructs them to stay still, and they gave up trying to escape and invade neighbouring tissue," Melinda explains.

Central to this work is hyaluronic acid, a naturally occurring molecule that forms part of the brain's structural support system. Normally flexible, it instructs cancer cells to move and spread. But Melinda and her colleagues discovered that by "freezing" this molecule - locking it into a rigid form - they could effectively stop tumour cells in their tracks.

Crucially, this effect was achieved without destroying the cells themselves. Instead, they were "reprogrammed" - a concept that opens new avenues not only for brain cancer, but potentially for other solid tumours. "Cancer cells behave the way they do in part because of their environment," Melinda explains. "If you change their environment, you can change the cells."

This research marks a striking departure from conventional cancer therapies, which typically aim to destroy malignant cells through drugs, radiation, or surgery. Instead, the focus is on the tumour microenvironment - the surrounding "scaffolding" that cancer cells rely on.

"Nobody has ever tried to change cancer outcomes by changing the matrix around the tumour. This is the first example where a matrix-based therapy could be used to reprogramme cancer cells," says Melinda.

The implications of this new research are profound. It could significantly reduce the need for treatments such as chemotherapy and radiotherapy (and their accompanying side effects) and help overcome one of the greatest challenges in the battle against cancer: the ability of tumours to resist and adapt to drugs.

Even after surgery, glioblastoma tumours often return within months. A therapy that could slow or halt the spread of cancer cells would represent a major advance. "This could be a real opportunity to slow glioblastoma progression," Melinda says.

"The most exciting thing," she reflects, "is that we're seeing a completely new way of thinking about cancer. It's not always about destroying cells - it's about understanding them well enough to change their behaviour."

Find out more about the work of the Duer Research Group:

Alumnus Dr David Cox (Biotechnology, 2013) studied for his PhD in neuroscience at Robinson. As a specialist health and medical journalist, David writes for the BBC, NBC News, The Guardian, The Telegraph and WIRED. David's first book, *The Age Code* (HarperCollins 2026) is the result of a two-year investigation into the relationship between what we eat and how we age.

You're beginning to notice the signs of ageing – the wrinkles starting to appear with alarming regularity, the dull joint aches when you wake, and the sneaking sense that your cognition is not quite as sharp as it used to be.

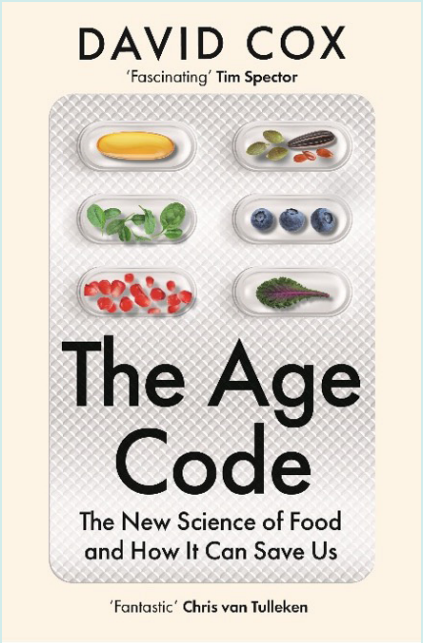
But had you considered that some of this is being fast-tracked by what and how you're eating? That's the focus of my new book, *The Age Code*, which tracks the emerging science connecting diet and ageing, and most importantly of all, what you can actually do about it.

Let's begin with how we cook. Numerous aspects of the ageing process, whether that's the fine lines which form in our skin or the loss of elasticity in heart muscle, can be accelerated by a class of toxins known as advanced glycation end products or AGEs. We accumulate them in our bodies throughout life, through a chemical reaction called glycation which takes place between proteins, fats and sugars.

While AGEs have long been known to form in our bloodstream following blood glucose spikes, emerging research is finding that they can also accumulate in our food, when cooked at high temperatures. Unfortunately, many of the cooking techniques we savour, whether that's grilling, roasting or barbecuing, generate AGEs in large numbers. Our body can cope with a certain number of AGEs but if we're ingesting too many, they can drive inflammation through activating a particular switch in the immune system called RAGE. Because they bind to and stiffen collagens, proteins which are particularly ubiquitous in our skin, joints and ligaments, AGEs can make us look and feel visibly older.

Yet there's a way to limit their accumulation. As part of my research for the book, I travelled to the Basque Culinary Centre in northern Spain where scientists and chefs are collaborating to devise new ways in which we can adapt our cooking to limit AGE formation. It turns out that slow cooking, or first marinating meat and fish in mixtures of olive oil, herbs and spices before frying and roasting, can act as a natural barrier. Clinical trials are now exploring whether this form of culinary medicine can help slow the progression of different diseases.

At the same time, science is also revealing that faster ageing is not only linked to what we do eat, but what we're not eating. While most nutritional information has traditionally focused on the macronutrients – fibre, carbohydrates, fat and protein – ageing scientists are increasingly discovering that it's an inadequate intake of various key micronutrients which can take its toll over time.



Insufficient amounts of vitamin K, which we get through consuming leafy green vegetables, eggs and dairy products, can drive calcification of the arteries, making you markedly more at risk of premature heart disease, while B vitamin deficiencies can drive ageing across multiple organ systems from the gut to the brain.

Crop Science Centre © University of Cambridge

A new realm of nutritional science is helping to unveil the importance of phytochemicals, nutrients produced by the immune systems of plants. Epidemiologists have long wondered why indigenous populations who consumed a large amount of unfermented cocoa seemed to be protected against hypertension, and we now know that this is due to the effects of a group of phytochemicals known as flavonoids. Consuming 400-600mg of flavonoids per day, something which you can also achieve through drinking teas (particularly green, oolong or chamomile tea), and various brightly coloured fruits and vegetables provides a biological kick to your blood vessels, prompting them to dilate and contract in a way which is ultimately beneficial for cardiovascular health.

There's also astaxanthin, a potent red-orange phytochemical which is found in algae, salmon, shrimp and in particular high concentrations in seaweed. It came to the attention of scientists studying groups of super-agers on the island of Hawaii, leading to the discovery that consuming sufficient astaxanthin on a regular basis can help ramp up the activity of a gene called FOXO3 which plays a major role in carrying out all kinds of repair activities throughout your body.

Finally, the timing of when you eat plays a major role in how well you age. So many of us concentrate our calorie intake in the wrong half of the day – we consume a large dinner and a small breakfast. Yet in reality, we should be doing the opposite as our metabolic enzymes are far more ready to burn through calories and use dietary protein to synthesise new muscle tissue in the morning. Changing the pattern of how we eat, even some of the time, could help you retain more muscle mass as you age and make it easier to manage a healthier weight.

Through the science of ageing we're learning all sorts of simple tweaks we can make to our everyday routines which could make a significant difference to both the length and quality of our lives.

The Age Code is available from Amazon, Waterstones, and all major bookshops.

TRYING TO UNDERSTAND THE MISFOLDING PROTEINS OF THE BRAIN

PROFESSOR GABRIELE KAMINSKI SCHIERLE, FELLOW IN CHEMICAL ENGINEERING AND BIOTECHNOLOGY

Gabriele Kaminski Schierle is Professor of Molecular Neuroscience at the University of Cambridge, and serves as the leader of the Molecular Neuroscience Group. She has built up an internationally recognised research group and infrastructure to investigate the molecular mechanisms causing proteins to misfold and mimic aspects of Alzheimer's Disease and Huntington's Disease. Her group has pioneered a research approach that combines advanced biophysical/optical methods with molecular neurobiology for research into neurodegeneration.

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As a molecular neuroscientist, my career has been driven by a desire to visualise the invisible processes that cause our brains to fail as we age. In my lab, we treat the brain not just as a biological organ, but as a complex landscape of physics and chemistry.

Our goal is to understand why certain proteins, which are essential for a healthy life, suddenly change shape and become toxic, leading to devastating conditions like Alzheimer's and Parkinson's disease.

One of the discoveries we made was that as these disease-related proteins transform into toxic structures, they develop their own intrinsic fluorescence. Specifically, we found that they possess energy states that we can excite with light; under the correct illumination, they light up like dye molecules, which we can thus detect even in biological tissues. This was a paradigm shift. Traditionally, scientists had to attach bulky chemical dyes to proteins to see them under a microscope, which often changed how the proteins behaved. By discovering this, we've opened a door to detecting these diseases earlier and more accurately, even using this knowledge to inspire new types of biological sensors and materials.

To truly understand how these proteins spread like "seeds" from cell to cell, we needed better "eyes". My team was among the first to apply optical super-resolution microscopy to this field. This technique is so powerful that my research was used as an example in the 2014 Nobel lecture to illustrate the concept. It allows us to watch, with nanometer precision, as toxic proteins induce healthy proteins to misfold.

We also developed fluorescence-lifetime sensors. These are essentially "fitness trackers" for proteins that provide a real-time readout of their health and shape within living cells. If we excite the amyloids, attached to small dye molecule, with short pulses of light, they emit light for a short period of time in the aftermath, much like a bell "rings down" after it has been struck. We found that these "ringdown times" for amyloids inform us on the severity of aggregation and, hence, the progression of the disease. These tools are now used by laboratories worldwide to link the tiny movements of molecules to the actual progression of dementia.

In Parkinson's disease, a protein called alpha-synuclein is the primary culprit. For a long time, it was viewed only as a "bad actor". However, our group identified its vital, positive role in how brain cells signal to one another. By understanding its "day job," we are better equipped to understand why things go wrong when it stops functioning correctly. This has opened entirely new therapeutic directions that focus on restoring its natural function rather than just clearing away the damage.

Beyond the microscope, I am deeply committed to the community that makes this research possible. As the Director of the MPhil in Biotechnology, I help train a diverse, international cohort of students, merging the worlds of biology, physics, and engineering. I believe that the biggest problems in medicine will only be solved when we stop thinking in "silos" and start collaborating across disciplines.

Being a Fellow of Robinson College since 2018 is a cornerstone of my life in Cambridge. Robinson is more than just an academic home; it is a vibrant, supportive community that mirrors the interdisciplinary nature of my research. Whether I am serving on the College Council or the Safety Committee, I am constantly reminded of the value of a grounded, ambitious academic environment where a casual dinner conversation can spark the next great scientific insight.

Looking ahead, I am incredibly optimistic. By combining deep learning and advanced biophotonics, we are moving toward a future where we can predict "brain age" and neurodegeneration long before symptoms appear. The goal is no longer just to treat the end stages of these diseases, but to intervene when the very first proteins begin to misfold.

I am deeply honoured to have been awarded the 2026 Sosei Heptares Prize in Biophysics. This recognition is not just for me, but for the many talented students and collaborators who have shared this journey of discovery with me.

DR BRISTI BASU LEADS PIONEERING NEW TREATMENT FOR PANCREATIC CANCER PATIENTS

Robinson Fellow and Director of Studies for Part II Medicine, Dr Bristi Basu, is at the forefront of experimental cancer therapeutic approaches. As part of her role as an academic medical oncologist at Cambridge University Hospitals (CUH) NHS Foundation Trust, Bristi leads the Cambridge Experimental Cancer Medicine Centre and the Cambridge Cancer Trials Centre, and she co-leads the Cancer Research UK (CRUK) Cambridge Pancreatic Cancer Programme with Dr Giulia Biffi. She also chairs the CRUK Expert Review Panel, serves as Vice-Chair of Cancer CRUK's Clinical Research Committee, and is Co-Chair of the UK National Pancreatic Research Group, leading its Novel Therapeutics workstream.

Bristi's research focuses on early-phase clinical trials – studies that test promising new therapies and play a vital role in translating laboratory discoveries into treatments for patients. Her areas of focus are cancers, or tumours, arising from the liver, pancreas and biliary tract. A defining feature of Bristi's career is her commitment to early-phase trials. These studies are often complex, intensive and incremental, as they are the route through which new treatments first reach patients.

One of the investigator-initiated trials that Bristi is currently leading as Chief Investigator is CRISTAL-APC, which translates research undertaken by Dr Tony Wu and Dr Michael Gill at the Cancer Research UK Cambridge Institute. Pancreatic cancer remains one of the most challenging cancers to treat: often symptomless in its early stages, typically diagnosed late, and resistant to many therapies. In the UK, around 10,000 people are diagnosed each year, many only after the disease has spread.

CRISTAL-APC aims to make pancreatic cancer treatment more effective, combining standard chemotherapy with a novel drug, VP-002, developed by Cycle Pharmaceuticals (**meet the Founder of the company pp 18-19**) which is

designed not to attack the tumour directly but to affect cell signalling within its surrounding environment. The trial, funded by Cycle Pharmaceuticals with a large translational grant from CRUK, is co-ordinated via the Cambridge Cancer Trials Centre, sponsored jointly by CUH and the University of Cambridge, and is supported by the NIHR Cambridge Clinical Research Facility.

Pancreatic tumours are notoriously difficult to treat because they create a dense, protective microenvironment with intricate signalling from multiple cells and chemicals called chemokines, that protects them from drugs and the immune system. VP-002 targets the CCR1 receptor, a protein involved in this process. By inhibiting it, the drug has been shown in the laboratory to may make tumours more vulnerable to chemotherapy - thereby potentially allowing lower doses to be administered to patients with a reduction in associated side effects.

If successful, the implications are significant. As Bristi explains: "We have few options available to help people diagnosed with late-stage pancreatic cancer. With CRISTAL-APC, we've worked with patient representatives to design a trial that has the potential to give them more time, but we hope also a better quality of life."

Patient experience has been central to the design of the trial. In diseases like pancreatic cancer, where treatment effects can be as difficult as the illness itself, quality of life is a fundamental consideration.

The trial plans to recruit around 120 patients across 15 hospitals in the UK, testing different doses before comparing the regimen with standard chemotherapy. If successful, it could lead to larger studies and contribute to a new standard of care, or greater understanding of factors that may benefit from this approach.

Alongside her national and international leadership in cancer research, Bristi is committed to her role at Robinson College. As a Fellow and Director of Studies, she supports and mentors medical students at a crucial stage in their development.

"My role at Robinson is incredibly rewarding. It keeps me connected to the next generation of doctors — their curiosity, compassion and fresh perspectives are inspiring. It's a privilege to support them as they gain the skills and knowledge required for their careers, and to be part of a college community that values both academic excellence and genuine human connection."

Bristi's work is guided by a clear purpose: to make a difference where it matters most - improving patients' lives and supporting the next generation of clinicians and scientists.

Scuba diving is one of Bristi's favourite pastimes and she recently enjoyed a diving trip to Raja Ampat, Indonesia. She says, "It's important that medics learn how to decompress and switch off from work." Bristi also practices ashtanga yoga and has a TikTok account for her beloved lhasa apso dog, Tashi, who currently has a following of 2.5K @tiktok.tashi2.

MEET THE ROBINSONIANS LEADING THE WAY IN TREATING RARE GENETIC DISEASES AND CANCER

When James Harrison (Natural Sciences, 1992), pictured above, returned to Robinson College to speak at a Scholars' Dinner, he did not expect to recruit his first employee. But that evening led to a conversation with fellow alumnus Steve Fuller (Natural Sciences, 2005) and the beginning of a working relationship which now places them at the forefront of cutting-edge treatments for rare genetic diseases and cancer.

James, now an Honorary Fellow of Robinson, is Founder and Group CEO of Cycle Pharmaceuticals, a company he created "from a blank sheet of paper" to provide treatments for children with rare genetic diseases. Steve became Cycle's first employee in 2013 and is now the Chief Strategy Officer. Fellow Robinsonians Martin Smith (Natural Sciences, 1992) and Mike Dinan (Natural Sciences, 2009) followed suit – Martin is Cycle's Director of Commercial Operations and Mike is Associate Director of Product Management.

What began as a small start-up has grown into a thriving international pharmaceutical business at the cutting-edge

James (left) and Steve (right) with Victoria Dickinson their Chief Product & Marketing Officer, collecting Cycle's award for Best Private Business of the Year 2025 at the prestigious Private Business Awards.

of transformative treatments and patient care. Cycle now employs 220 people across Cambridge and the US, recorded revenue of more than $205 million in 2025, and was ranked in the Sunday Times Tech 100 for the second consecutive year in 2026. The company also launched a Graduate Recruitment Programme this year to attract the next generation of scientific talent.

Before founding Cycle, James worked in private equity and pharmaceuticals, where he became increasingly aware of how few treatment options existed for children with life-threatening rare diseases.

"Our aim at Cycle is to help some of the most fragile members of our community - children born with rare genetic diseases – who often have little to no support or hope of treatment," says James.

He explains: "The sad truth is that there are around 7,000 rare diseases in the world with only around 1,000 medicines to treat them. The number of untreatable diseases is growing because, as our knowledge of them develops, they are divided into smaller subtypes at a faster rate than drugs are approved to treat them.

"I founded Cycle to do something about this," he continues. "We now have nine drugs in the US market treating more than 2,500 patients, in addition to our other patients in the UK and around the globe."

James and Steve invented Cycle's first drug, NITYR, which treats a rare genetic metabolic disorder called Hereditary Tyrosinemia Type 1. This life-saving drug has been dosed to babies as young as one-day old, effectively saving their lives.

Social responsibility has remained central to the company's mission. As such, Cycle established a programme offering free treatment to patients with rare genetic diseases in the developing world and is currently treating 100 patients with life-long illnesses in Pakistan, India, Bangladesh and several African countries.

"The best news I get is when I'm sent a photo from a Bangladeshi family of their son going to school for his first day, when he would likely have died of liver failure without our support. This is why I do what I do," says James.

Cycle's work extends beyond prescribing medicines. The company also provides ongoing support through dieticians, nurses and patient-care teams who help families manage the long-term practical demands of treatment.

"These are lifelong conditions with lifelong treatments," James explains. "Improving quality of life is just as important as the medicine itself."

Meanwhile, Cycle's ground-breaking work on cancer includes the CRISTAL-APC trial, led by Robinson's Dr Bristi Basu. Developed and funded by Cycle, the trial combines standard chemotherapy with VP-002, a compound designed not to target the tumour directly but to alter its surrounding environment to improve the effectiveness of treatment while reducing side effects.

"With CRISTAL-APC, we've worked with patients to design a trial that has the potential to give them not only more time but also a better quality of life. It could make a huge difference for these people and their families," says Steve.

From rare genetic diseases to some of the most challenging forms of cancer, the work of James, Steve and their colleagues at Cycle is helping to turn scientific advances into life-changing treatments – markedly improving the quality of life of their patients and, in many cases, saving lives.

Q&A WITH ROBINSON ALUMNA DR SUSAN GALBRAITH

Dr Susan Galbraith (Medicine, 1987) has dedicated her career to improving outcomes for cancer patients, first as a clinical oncologist and now as a drug developer. Susan is Executive Vice President of Oncology Haematology R&D at AstraZeneca and has contributed to the development of 13 approved medicines for cancer treatment. A Clinical Oncologist by training, Susan read Medicine at Robinson College and the University of Manchester and holds a PhD from the University of London.

In recognition of her contributions to oncology drug development, Susan received an honorary Doctorate of Medical Science from the Institute of Cancer Research (ICR), is a Fellow of the Academy of Medical Sciences, and has been elected to the Academy of the American Association for Cancer Research (AACR). Susan is also a member of the Cambridge Cancer Centre Executive Committee, the Scientific Advisory Board of the ICR, and the European Association of Cancer Research (EACR) Advisory Council.

Q: Looking back to your time at Robinson and your early medical training, what experiences or influences first sparked your interest in oncology?

A: When I was doing my medical training after graduating from Robinson, I was planning to specialise in cardiology, but I didn't get the placement I wanted. However, things worked out for the best as the placement I got gave me my first experience of oncology and I've never looked back! What particularly appealed was the combination of the science - cancer biology is fascinating - and caring for patients at a very hard time in their lives, allowing me to combine my scientific curiosity with compassion. I'm grateful for my time at Robinson and the Cambridge School of Clinical Medicine as it gave me a network of fellow students who provided friendship and support through the early years of my career and the long hours on the wards.

Q: Cambridge is a global hub of excellence for academia, research and innovation. What do you value most about the Cambridge ecosystem?

A: The concentration of talent in Cambridge across colleges, hospitals, institutes and industry, from fundamental biology all the way to clinical medicine, is truly remarkable. There is also a culture of collaboration across these different sectors which raises the bar for all of us and drives innovation. A lot of our medicines have benefited from collaboration across the ecosystem, for example with a drug candidate we are developing for breast cancer a lot of the early work was done in collaboration with Dr Richard Baird from the Cancer Research UK, Cambridge Cancer Centre. We are also collaborating with Professor Rebecca Fitzgerald, Director of the Early Cancer Institute and Professor of Cancer Prevention, University of Cambridge, on the early detection of cancer. Finally, I value the proximity of our research, particularly our Discovery Centre (DISC), to patients through the Cambridge Biomedical Campus which keeps the science anchored to the unmet needs we are trying to solve and focuses us on our collective goals.

Astrazeneca's Discovery Centre in Cambridge where Susan and her team are based.

Q: You have contributed to the development of 13 approved cancer medicines to date. Which of your achievements are you most proud of and why?

A: It's hard to pick just one of the medicines I've had a role in developing – that's like asking me to choose a favourite child! However, what I can say is I get huge pride when a therapy changes a standard of care and gives patients more time with a better quality of life. An example of how we've been able to do this is through our biomarker driven approach that match the right patient to the right therapy. Seeing precision medicine move from concept to routine practice has been particularly gratifying because it acknowledges the biological diversity of cancer. All of this of course wouldn't be possible without a great many teams working from target discovery through to pivotal trials, regulatory and beyond, so I'm also proud of building and sustaining high-performing multidisciplinary teams that can repeatedly deliver new medicines for patients.

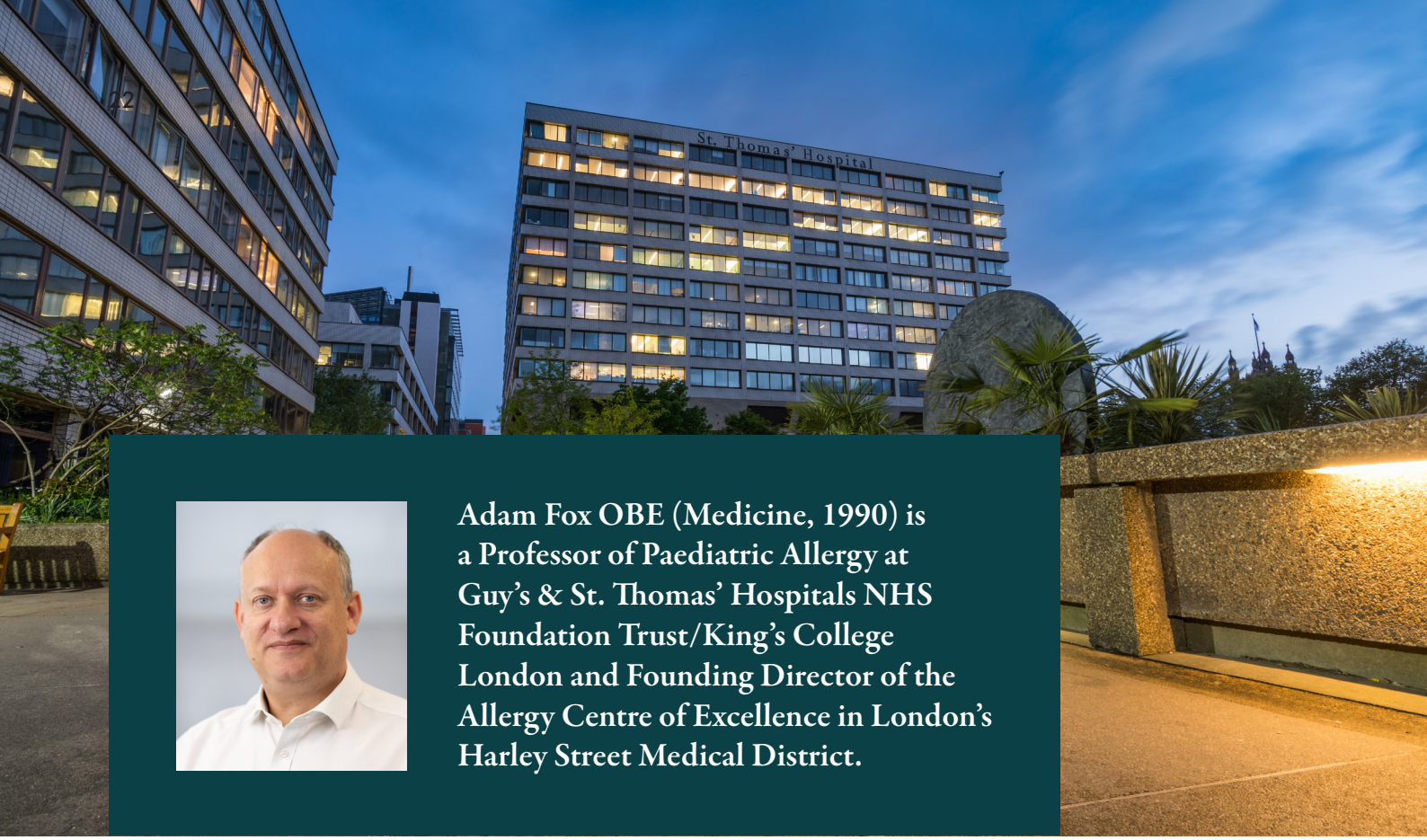
Q: Cancer treatment is evolving rapidly, which advancements do you believe will have the greatest impact in the next 5-10 years?

A: There are some key trends with real potential to transform cancer outcomes. First, I believe that we can improve on backbone chemotherapy and radiotherapy by deploying next generation antibody drug conjugates (ADCs) with optimised linkers and payloads, and by integrating radioconjugates (RCs) to enhance radiotherapy regimens.

Second, I think we will move beyond today's immune checkpoint inhibitors by segmenting the cancers sensitive to immune-directed treatment with the next wave of bispecific immuno oncology agents, which as the name suggests target two mechanisms at the same time. These medicines may have the potential to offer more targeted approaches, aligned to specific biomarker profiles, with the aim of improving outcomes.

Third is the scaling of cell therapies and T cell engagers (TCEs) to enable many more patients to benefit from these potentially transformative medicines in both haematological malignancies and solid tumours. We ae starting to move from custom made therapies toward off the shelf models that, if successful, can make these types of treatments more scalable and accessible.

Finally, treating cancer earlier before and after surgery with combination regimens is important. Earlier intervention offers the best chance for long-term outcome and cures. With advances in screening and diagnostics, it is becoming increasingly common to treat earlier, particularly the pre-surgery setting, where the potential to change the disease trajectory is greatest.



Adam Fox OBE (Medicine, 1990) is a Professor of Paediatric Allergy at Guy's & St. Thomas' Hospitals NHS Foundation Trust/King's College London and Founding Director of the Allergy Centre of Excellence in London's Harley Street Medical District.

It's difficult to overstate the impact my time at Cambridge had on me – both personally and professionally. Whenever I am asked about the happiest time of my life, I reflexively respond that it was my 3 years at Robinson.

Reflecting back on exactly why this was the case is a little more challenging. It would be disingenuous to suggest that I loved and embraced the academic side of my course – those close to me at the time would know this to be untrue, and the fact that I spent two long summers in college preparing to retake anatomy exams would also evidence otherwise. However, the time I spent focused on studies stimulated enough interest for me to want to return some years later and complete my doctoral thesis, which led to the academic highlight of my career: being awarded the 2012 Raymond Horton-Smith prize from the University for the year's best doctoral thesis. Indeed, this was something that shocked me at the time as much as it would have done my undergraduate peers.

Since moving on, I was delighted to hear that the focus of the medical sciences course has been very much overhauled since those days when somehow insect embryology found its way onto a curriculum already too full to include many vital areas of medicine.

Of course, what really made the experience was the people – the friends, peers, college staff and faculty. As a medical student, living and working in an environment filled with others studying philosophy, engineering and history is a real privilege and one that is not enjoyed by many of those who attend medical schools that are less integrated into the wider university. I am certain that this exposure led to what became a portfolio career encompassing education, research leadership and entrepreneurship. The latter of these continues to this day to involve fellow Robinson undergraduates who remained a part of my life. I am still a strong advocate of this portfolio career model and included it in the narrative of the **Fox Nasim Bursary** that Mohammed Nasim (Medicine, 1990), now CEO of a telecoms firm, and I jointly endowed for future Robinson medical students that now funds electives.

Looking back, one of the real strengths of Robinson was its strong sense of community – one that stays with you and for me, continues to this day, whenever I serendipitously encounter a fellow Robinsonian. This was something I don't think I fully appreciated at the time, but missed when I moved for my clinical studies to a large London medical school. From my visits to Robinson since, I have a clear sense that this community is still in good health.

ALUMNI EVENTS

ENTREPRENEURS NETWORK EVENT – FEBRUARY 2026

Our Entrepreneurs event took place at Rathbones in London and explored the life cycle of new ventures from start-up to scale-up. Alumni guest speakers included: Jennifer Toll (Natural Sciences, 2003), Co-Founder - Festival of the Girl; Max Medhurst (Engineering, 2015), Co-Founder - Icenine Drinks; and our host, Chris Coomber (Economics, 2003), Financial Planning Director, Rathbones. Our next Entrepreneurs event will take place in February 2027.

MARCH REUNION 2026

Our March Reunion welcomed our 1981, 1991, 2001 and 2011 matriculants for drinks and dinner. Feedback included: "Such a wonderful evening reconnecting with old friends whilst making some new ones. Thank you to everyone for giving us alumni such a warm welcome, as always, and such a memorable event. The evening really reinforced what makes College so special."

HONG KONG AND SINGAPORE ALUMNI DINNERS – APRIL 2026

The Warden and Development Director's trip to Hong Kong and Singapore included special alumni dinners organised by Dr KK Chan (Electrical and Information Sciences, 1986) and Sok Theng Cheng (Law, 1990). These offered a fantastic opportunity to connect with part of our vibrant international alumni community.

ALUMNI SUSTAINABILITY LEADERSHIP INSIGHT SHARING DAY – MAY 2026

We were delighted to welcome alumni and other leaders from across business, academia, policy, and sustainability to Robinson to exchange perspectives on the challenges and opportunities shaping the global sustainability agenda. We were especially honoured to host the event in partnership with alumna Her Highness Sheikha Shamma bint Sultan bin Khalifa Al Nahyan, pictured left, President and CEO of Frontier25, an impact-focused climate-action advisory.

JOIN US FOR ROBINSON'S 50TH ANNIVERSARY GALA DINNER IN LONDON - 14TH MAY 2027

Please join us for Robinson's 50th Anniversary Gala Dinner at Merchant Taylors' Hall, London EC2 on Friday 14th May 2027. The evening will include music performances, opportunities to connect with old friends and hear from alumnus Neil Mullarkey, founder of The Comedy Store Players. We hope you will join us for what promises to be a unique evening filled with memories, laughter and good company.

Visit our Alumni Events page to see our upcoming event programme or contact the Development Team for more information: **development-office@robinson.cam.ac.uk**

SUPPORTING ROBINSON

Philanthropic giving has enabled Robinson to make meaningful progress in innovative teaching and learning. With your support, we can go even further – extending interdisciplinary learning, expanding digital skills, and widening participation – all while ensuring that every student can thrive, regardless of their background.

There are a variety of ways that you can get involved and support Robinson:

MAKE A DONATION

Regular donations from alumni and friends have a real impact, year after year. Whether monthly, quarterly, annually, or as a one-off gift, your support can help to fund bursaries, scholarships, research grants, academic prizes, and travel opportunities.

LEAVE A LEGACY

Legacy gifts have helped to endow teaching positions and create funds that support students from underrepresented backgrounds. A legacy can help to shape future generations.

VOLUNTEER YOUR TIME

Whether through mentoring, speaking at events, or offering internships, volunteering helps bridge the gap between academic study and the wider world – broadening students' horizons and ambitions.

To find out more, visit our giving page or contact the Development Team:

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Connect with us: @robinsoncollegecambridge

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