Contents

02 LETTERS

Campendium

07 DON’S DIARY
Professor Marian Holness.

08 MY ROOM, YOUR ROOM
Eugenia Cheng (Caius 1994).

11 SOCIETY
The Cambridge University Digital Gaming Society.

13 BRAINWAVES
Professor Andrew Preston.

Features

14 ON AGE
Calling the under-60s: in 2017, this is what age looks like.

20 THERE’S A BOOK FOR THAT
Whether your problem be moral, social, ethical or – frankly – hypothetical, the novel cure never fails.

26 OF MICE AND WOMEN
Last year, Professor Magdalena Zernicks-Goetz made not one, but two world-changing discoveries.

30 EIGHT HUNDRED YEARS OF HISTORY
And just seven years in which to make your mark. CAM talks to the Vice-Chancellor about his term of office.

34 A NEW NORMAL
Forget everything you know about how the world works. This is the global economy, version 3.0.

Extracurricular

43 SHELFIE
Professor Anna Vignoles.

44 STUDENT LIFE
Finalists discuss the end of days.

47 CAMBRIDGE SOUNDTRACK
Joanna Marsh (Sidney Sussex 1989), artistic director of ChoirFest.

48 CROSSWORD
Welcome to the Easter edition of CAM. This October, Professor Sir Leszek Borysiewicz will complete his seven-year term as the University’s Vice-Chancellor. On page 30, he reflects on how he has approached his time.

When Roderick Braithwaite (Queens’ 1951) wrote to us to say he reckoned it was time we thought about the growing numbers of CAM readers working past retirement, we realised he was right. On page 14, we talk to leading members of the Cambridge community about what it means to extend your working life well beyond the usual 40 years.

Elsewhere, on page 34, we examine the future of the economy; on page 20, our bibliotherapists provide novel cures for all your ills. And on page 26, Professor Magdalena Zernicka-Goetz reflects on what it is like to make not one, but two world-changing discoveries.

Finally, as we go to press, we were very sad to hear the news that Sir Paul Judge had passed away. As well as being in large part responsible for CAM’s introduction back in 1990, he was always a great friend of the magazine and we shall very much miss his advice and insight.

Mira Katbamna (Caius 1995)

Cambridge booksellers
I’m surprised there has been no mention of the bookseller, G David. They used to have a small shop near St Bene’t’s Church and (in the late 1950s) a stall in the marketplace. In 1957, in between my interviews to read Classics at Catz, I wandered into the Market Square and was delighted to be able to buy not only leather-bound volumes of Scott’s novels for sixpence (2½p) but also Greek and Latin texts for a similar price. Admittedly the texts were falling to bits, but as I’d done bookbinding at school it was an easy task to stitch them together. So it was a happy discovery – and Catz gave me a scholarship.

Roger Smith
(St Catharine’s 1957)

Editor: G David is still going strong in St Edward’s Passage

I am grateful to Joan Schneider (CAM 79) for recalling the 1947 version of the Cambridge Bookshops ditty set to the tune of Frère Jacques. By the mid-1950s, my contemporaries may recall this had acquired greater accuracy and improved scanning: William Heffer, William Heffer / Bowes and Bowes, Bowes and Bowes / Galloway and Porter, Galloway and Porter / Deighton Bell, Deighton Bell.

Trevor Lyttleton
(King’s 1954)

India
My wish? That a good part of the next 70 years be focused on agriprises (rather than...
I was struck by your article Malthus redux (Trinity 1955) by Nawshir Khurody. It talks about the sustainability of resources, which enables the economy to be stable. Prosperity in farmlands at world-class nutritional levels, a principal source of food for Africa and the Middle East, which enables India to be the last of desperate refugees trying to flee their continent. Sadly, we have not seen the periodic famine and great loss of life. Contraception in Africa is not widely available. Of course, we have seen many Asian areas, farmers have met the needs of a growing population by increasing their inputs of labour per unit of land and by adopting new technologies. Influenced by her book, I led a team of researchers from the Overseas Development Institute and the University of Nairobi to make a detailed study of Machakos District, Kenya, comparing its badly degraded state in the 1930s (population 250,000) and its terraced, productive and tree-covered state in 1991 (population 1.4 million). In other words, more productive farming had led to more non-farm jobs and a diversified local economy.

Cathedral Soundtrack
Leslie Bricusse (CAM 79) is right to applaud the musical, Guys and Dolls, and particularly the opening number, Fugue for Tinhorns. But he shouldn’t be misled by its title into thinking it’s a fully-fledged fugue. While it shares with fugue the principal of ‘contrapuntal imitation’, ultimately it’s only a ‘round’, with each voice starting in turn and singing the same melody. A ‘proper’ fugue weaves its theme repeatedly into the texture using different transpositions and keys and in various combinations with itself.

I studied the writing of fugue for Part II of the Music Tripos in 1980 and I believe it’s still very much part of the curriculum for today’s Cambridge students. JS Bach would be proud.

And in case anyone’s wondering, the ‘tinhorns’ aren’t made of tin.

Christopher Mabley (Corpus 1977)

Space of possible minds
Your tantalising story (CAM 79) reminded me of several things. First, in his essays, DH Lawrence wrote confidently of the intelligence of individual bodily organs that could perform mental functions on their own, which perhaps did not rule out superior co-ordination and oversight by the brain. AI machines seem to be built with parts entirely directed by their ‘brains’.

Second, human language, which Chomsky regards as an innate mechanism (“universal grammar”), seems to have evolved over millennia, carrying over and modifying earlier stages of skills and functions. Some may even have been lost on the way. A thought-provoking essay.

Hiren Gohain (Gaius 1964)

My room, your room
I was delighted to see Katharine Whitehorn revisiting Cambridge (CAM 80). More than 20 years after she arrived, undergraduates at Trinity Hall were using her priceless work, Cooking in a Bedsitter, to produce complete meals in the single gas ring in the Gyp room. What I learnt served me well in bedsits in Balham, Manchester and Bristol before my first foray onto the property ladder.

There was also a chapter on wine, which advised that: “Red wine goes with meat but white wine goes with carpets”.

Bob Calver (Trinity Hall 1969)
RESEARCH

Neuroscience win

A Cambridge scientist has won the world’s most valuable prize for brain research. Neuroscientist Professor Wolfram Schultz shared The Brain Prize 2017, alongside fellow researchers Professor Peter Dayan (Trinity Hall 1983) and Professor Ray Dolan.

The three have been given the prize, worth €1m and awarded annually by the Lundbeck Foundation, for their work on how the brain recognises and processes reward.

Professor Sir Colin Blakemore, chairman of the Brain Prize selection committee, said: “The judges concluded that the discoveries made by Wolfram Schultz, Peter Dayan and Ray Dolan were crucial for understanding how the brain detects reward and uses this information to guide behaviour.”

The trio’s research could have wide-ranging implications for understanding aspects of human behaviour, including how we make decisions, why we become addicted to things such as drinking alcohol and gambling, and mental illnesses such as schizophrenia.

Professor Schultz said: “The Brain Prize is a fantastic reward for our research group. I can hear our dopamine neurons jumping up and down!”

To find out more about Cambridge neuroscience visit: neuroscience.cam.ac.uk.

GIFT

“It is my hope that the building will enable breakthroughs in our understanding of neurodegenerative diseases, bringing us closer to the development of new treatments”

R. Derek Finlay (Emmanuel 1952) is donating £5m to support fundamental research into the causes of disorders such as Alzheimer’s and Parkinson’s disease. His gift will support the completion of the Chemistry of Health building. To follow the progress of the campaign for the University and Colleges visit cam.ac.uk/YoursCambridge.
we didn’t put an oar wrong
The Light Blues pulled ahead early after Oxford made a disastrous mistake from which they never really recovered; just after the race began, Oxford caught a crab, which temporarily halted their boat.

The number of Cambridge Alumni Groups around the world, bringing together a remarkable network of friendly and engaged alumni who share a passion for and commitment to the University. To find an alumni group near you, visit: alumni.cam.ac.uk/groups.

We broke records this time
This year’s winning time was a record-breaking 18 minutes, 33 seconds, beating Oxford by 11 lengths. It’s the first ever Women’s Boat Race on the Thames Championship Course to clock in under 19 minutes, and beats the 2016 Cambridge men’s team’s winning time of 18 minutes 38 seconds.

DECONSTRUCTED

The 2017 Women’s Boat Race

We are ahead over the long-term, too
Their victory in the 72nd Women’s Boat Race puts Cambridge on 42 wins and Oxford on 30. This is the Light Blues’ first win since 2012.

It was a team effort
Club President Ashton Brown (Fitzwilliam) caught pneumonia after nearly sinking in last year’s race, and was delighted to be victorious this year. “I couldn’t have done it without the squad and I just had an awesome job leading them,” she said.

ALUMNI SURVEY

A huge thank you to the 30,500 of you who completed the alumni survey. The survey asked about your relationship with the Collegiate University and your thoughts on what we offer to alumni. Ninety-three per cent of you take pride in your Cambridge affiliation; 94 per cent rated your student experience highly; and 86 per cent of you say CAM is your most important source of Cambridge news and information. Analysis is ongoing, and will be used as we plan the future of our alumni programme.

TWO-MINUTE TRIPOS

SUBJECT CATERPILLARS CAN EAT SHOPPING BAGS. DISCUSS.
Caterpillars. Aren’t they just incredible eaters?
I know! Do you remember reading about that amazing one which ate loads of fruit during the week and then had an all-out salami, Swiss cheese, pickle and cupcake binge on Saturday? Like an Insect 5:2 Diet? Well, the ones I’m reading about won’t be feasting on chocolate cake. These are ‘wax worms’: they are bred to be fishing bait and live parasitically in beehives.
Oh, get out of here with your horrible insect reality. I just like the cute coloured ones.
But that’s why they’re such big news. They were observed in the field eating a plastic bag.
Now, researchers from the Spanish National Research Council and the University’s Department of Biochemistry have found that they can eat almost a whole bag in 12 hours. This stuff normally takes between 100 to 400 years to degrade.
Yeech. That would certainly give me a stomach ache.
Well, plastic is a pain for the whole world. Maybe these caterpillars can play a part in getting rid of it, thus creating a better environment for everything on the earth.
Wow. Maybe so. It’s almost like they’re turning something unpleasant into something beautiful, just by doing what comes naturally. I wonder where they got that idea?
Probably from that book about the very hungry caterpillar. What was it called, The Very Hungry Caterpillar?
Yeah. I liked that bit when he turned into a butterfly.
I liked that bit, too.
The study was led by postdoctoral researcher, Dr Paolo Bombelli and group leader Professor Chris Howe; the paper was published in Current Biology (April edition). To find out more about their work, please visit: bioc.cam.ac.uk.
SMALL GROUP TOURS

INDIA
IMAGES OF INDIA
- Staying in Mumbai, the 'pink city' of Jaipur, Ranthambore NP, Udaipur (2018), Agra, Delhi, Shimla and Amritsar, plus Jaipur and Chicharama (2017).
- Early Booking Offer – SAVE £50

ITALY
GRAND HOTEL ON LAKE COMO
- Spend a week at the 4-star Grand Hotel Menaggio
- Special Events – Cruises on Lake Como
- Optional visits available to Milan, Bergamo and St. Moritz
- 3 and 7 night extensions available

FINLAND, RUSSIA
PASSENGERS TO ST. PETERSBURG
- Sail from Helsinki to the former imperial capital
- Tour Helsinki & St. Petersburg including the Yusupov Palace, the Hermitage, Catherine Palace & Peter & Paul Fortress
- Special Event – Fabergé Museum Visit

JAPAN
DISCOVER JAPAN
- Staying in Osaka, Kyoto, Hiroshima and Tokyo
- Visit Hiroshima Peace Memorial Park, Itsukushima Shrine and historic monuments of ancient Kyoto
- Travel by Bullet Train

TANZANIA
SERENGETI & THE SECRET MIGRATION
- Staying in Arusha, Tarangire National Park, the Ngorongoro area, Serengeti and on Lake Victoria
- Unique mobile accommodation in Serengeti
- Special Event – Private Bush Rover

PORTUGAL
AN IBERIAN RIVER JOURNEY
- Sail aboard the MS Douro Prince on the Douro River
- Visit Porto, Entre-os-Rios, Pégua, Vega de Terron, Salamanca, Barca Alva and Pinhão
- Full board & drinks at dinner included, plus Special Events

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A colleague who reads it declares there will be calls for our heads. We decide this is probably a good sign.

Professor Marian Holness of the Department of Earth Sciences and Fellow of Trinity.

O
ne of my post-docs starts the term on maternity leave, and her son arrives in late January. With dogged determination she continues working from home as we put the finishing touches to a big paper. It is highly controversial, so we plan carefully to make sure there are no holes in our arguments and that the evidence is unassailable. A colleague who kindly reads it for us declares that there will be calls for our heads. We decide this is probably a good sign.

Lent is my heaviest teaching term. Some of the practical sessions are on Saturdays, so I cheer us all up by bringing in chocolate biscuits. The practicals involve the use of the petrographic microscope, my main research tool; much of my life is spent staring down microscopes. This is such an important skill for geologists to master that I make sure I am present at all the sessions, even though it means that every lecture I give comes with an additional four hours in the lab.

In February, planning starts in earnest for a field trip to Greenland in August. My group will be collaborating with colleagues from the University of Exeter and the Danish Geological Survey. The Arctic is always logistically difficult, and the barren and empty east coast of Greenland is no exception. Our plan is to fly to a small regional airport and then charter a boat for the three-day trip up the coast, hoping for the best. Last time we tried this we were prostrate with seasickness for two days – and then became immobilised in sea-ice.

The term is broken up by forays to Liverpool, Bristol and Berlin. Talking to people in other departments can be really energising – outside the Cambridge bubble my ideas get challenged and robust discussions trigger fresh ideas and open up new research directions. At Liverpool I meet someone who tells me about some interesting igneous intrusions in Anglesey. The minute I get back to Cambridge I dig out the geological maps, search the literature and email everyone still alive who worked on these rocks. It turns out that two of the intrusions appear in one of the earliest ever geological maps, published in 1822 by the remarkable John Henslow (who was Professor of Mineralogy at Cambridge for a few years before becoming Professor of Botany and founding the Botanic Garden). It is impressive to see the extent to which he was able to decode the geology of Anglesey, decades before the invention of the petrographic microscope, with neither a decent topographic map nor GPS. I suggest to my family that Anglesey would be a good place for our Easter holiday.

The term ends as I accompany a group of first years to Arran for their introduction to real rocks. The transition from lecture theatre to field can be a shock and their faces betray their lack of confidence when faced with their first outcrop. They don’t yet have the experience to appreciate that the geology of Arran is extraordinary, with countless beautiful outcrops posing thought-provoking scientific problems. Gradually, these insecure novices realise that they do actually know enough to make sense of what they are seeing, and by the last day they’ve transformed into confident scientists, able to describe the 3D structure and geological history of the first area they have mapped by themselves. It’s immensely cheering to see such palpable returns on all the hard work that goes into teaching in Cambridge.
I2, Caius Court

Eugenia Cheng (Caius 1994) and second-year organ scholar Michael How share their stories of musical friendships and mathematical foes.

The walls of Room I2, Caius Court, have heard plenty of music over the years – it is traditional for the College’s organ scholar to reside here. But something special happens when current scholar, Michael How, and mathematician, pianist and author, Eugenia Cheng (Caius 1994), sit down to play Ravel’s Sleeping Beauty pavane together at the grand piano. It’s almost as if there’s a third generation present: Cheng’s friend and mentor Robert Anderson (Caius 1948) – and himself once a resident of I2.

“One of my strongest memories of this room is the day that Robert Anderson knocked on my door and said: ‘Excuse me, but this was my room many years ago. Might I come in?”’, remembers Cheng. “Of course, I said yes – this room was a hub for musicians. He asked: ‘Are you president of the College music society? I was president, too.’ And we became friends. He used to sponsor students from the developing world who didn’t have access to libraries. We would show them around Cambridge together.”

Anderson, a noted Egyptologist, musician and music writer, sadly died in 2015. “Otherwise, he would have been here,” says Cheng with feeling. “Three generations in one room! The way he managed to blend his academic life and his music was an inspiration to me. But I feel, especially in this room, that he is still an inspiration.”

How agrees. “I think there’s a real spirit to this room, and the College as a whole. It’s amazing to think that so many influential people have spent time here.”

So little has changed, says Cheng, that it’s easy to let the years fall away. The slightly tattered armchairs Cheng knew are still there. The grand piano, however, is a step up from the digital piano she brought with her in 1996.

“I was having to practise in the practice rooms,” she says. How looks mystified. “You’ve never seen them? They were in Harvey Court. There are eight rooms in a row and six of them are garages, so they always
TWEET OF THE TERM
We think there’s ‘conspiracy theory’ and then there’s ‘acceptable political discourse’
Simon Doubleday
(Pembroke 1985)
@Cambridge_Uni

in brief
honorary degrees
Honorary degrees have been awarded to a number of prominent individuals: Professor Sir Malcolm Grant and the Lord Turner of Ecchinswell become Doctors of Law; Professor Jean-Marie Lehn, Professor Eric Maskin, Professor Janet Rossant, Dame Stephanie Shirley and Ms Sophie Wilson have been awarded Doctors of Science; and Professor Manuel Castells is now Doctor of Letters.

new heads
Professor Jane Clarke is to become Wolfson College’s next President, succeeding Professor Sir Richard Evans. St Catharine’s has welcomed its 39th Master, Professor Sir Mark Welland. It has been announced that Dr Pippa Rogerson will be the next Master of Caius, succeeding Sir Alan Fersht when he retires at the end of 2018. And Professor Chris Young will become new Head of School at the School of Arts and Humanities, taking up his new position in January 2019 following research leave.

onoto pens!
The University is relaunching its partnership with fountain pen creators Onoto, whose pens are believed to have been a favourite of Winston Churchill. Hand-made in England by a small team of master goldsmiths and jewelers, each pen can be personalised with engravings and College crests. They make both the perfect gift and the ideal memento of your University years. To browse the range, visit: alumni.cam.ac.uk/shop.

A Cambridge guide to...
Alumni festival
This year’s Alumni Festival is the ideal way to make new connections and find out about what’s happening in Cambridge. Running from Friday 22 to Sunday 24 September, the Festival will feature favourites such as the alumni scratch choir, plus numerous talks, panel discussions and reunions across the Colleges and University. Plenty more events are planned; to get up-to-the-minute news of what is happening, please sign up for the newsletters online at: alumni.cam.ac.uk/AF17.
To find out more, please visit alumni.cam.ac.uk/events.

Easter 2017 | Cam 81

Illustration: Michael Kirkham

Reeked of petrol. Digital pianos were just coming in, and I bought a Clavinova, which ended up lasting me 20 years. And I brought paper, as mathematicians get through a lot of paper. And a fluffy duck my sister gave me.”

How came to Cambridge from Melbourne, Australia. “So I couldn’t bring too much stuff,” he says. He has no fluffy ducks, but he does have the bright yellow Laughing Bag, which sits rather incongruously on the shelf next to The New English Hymnal. “I always had an interest in music and medicine, and initially didn’t know which to pursue. But I’m drawn to the variety of the organ, with its heights and depths, and such wide range of sounds. Bach is probably my favourite – his work is just so perfectly balanced.”

Looking back, says Cheng, the room gave rise to a rich seam of inspiration that continues to run through her life today. “People would just turn up and play music, or sing,” she remembers. “They’d climb in through the window, or just let themselves in and I’d find them here. Now, I run a salon in Chicago – the Liederstube – and it’s the same. People just turn up and we sing and play.

“The very last thing I did before leaving Cambridge was sit in this court, on the little wall, and think: I’ll never find a community like this. I’ll never be able to have that thing where people just wander in and sing with me – because we all go off into the world, and get jobs, and responsibilities. And yet I have. It’s lovely to come back and remember how it started.” Anderson, certainly, would have approved.

Eugenia Cheng (Caius 1994) is Scientist in Residence at the School of the Art Institute of Chicago and the author of How to Bake Pi and Beyond Infinity: An Expedition to the Outer Limits of Mathematics. Her mission is to rid the world of ‘math phobia’.

Michael How is a second-year musician and Wilfrid Holland Organ Scholar and is considering becoming a teacher. As yet, none of his friends has climbed in through his window.
An inspiring read for bright children...

From Utopia to the Elizabethans, AQUILA Magazine is designed for curious readers of 8 – 12 years.

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*Free with this issue to new subscribers, while stocks last.

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Fun and games

The Cambridge University Digital Gaming Society is more collaborative than competitive. Except when it comes to Oxford.

The roar of the crowd, the thrill of helping your teammates crush a long-standing rival – and the soft glow of a laptop screen. Playing computer games might not be your typical spectator sport, but for the Cambridge University Digital Gaming Society (CUDGS) there’s no more exciting time than the annual Varsity match against Oxford. Every spring, five teams of five from each university clash in hotly-contested battles of League of Legends, Defence of the Ancients (DoTA), Counter-Strike, Hearthstone and Overwatch, with the overall winners taking home a trophy. “It’s like showing up at a football match,” says treasurer Povilas Slekys (Girton). “People cheer on their favourite players.”

The rest of the year, membership is less intense, and based on playing online rather than in person. The CUDGS Facebook group has more than 490 members, so it’s easy to find an opponent. “It’s a nice change from having to sit and write essays, to be able to let off steam and play with people you know, rather than strangers,” says club secretary Olivia Howard (Newnham).

She rallies her fellow gamers to go to pub meets every few weeks and organises LAN (Local Area Network) parties once or twice a term. These allow group members to pile into one room with their laptop or desktop computers and play face to face, often collaborating instead of competing. Sometimes a games company sponsors the event, which means free pizza. Everyone is welcome, says Howard. “It doesn’t matter if you’re not super pro. You’ll still find people to play with.”

cudgs.org.uk
Are you a mathematician?
Want to take part in research?

We are looking for mathematicians with and without a diagnosis of an Autism Spectrum Condition to provide a saliva sample to help understand the genetic link between autism and mathematical ability.

With your help we can achieve this!

If you are aged 16 years or over and are studying/have completed a mathematics degree please go to https://maths.autismresearchcentre.net (or scan the QR code) for additional information. You can email maths@medschl.cam.ac.uk with any questions.

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THE RAVERAT ARCHIVE

Buy original artworks by Darwin’s granddaughter, renowned Cambridge artist Gwen Raverat.

Gwen Raverat (1885-1957) was one of Britain’s most celebrated and accomplished wood engravers and author of Cambridge classic ‘Period Piece’. The Raverat Archive holds an extensive collection of her work, including limited signed prints pulled by Gwen herself, and bespoke reproductions from only £30. With over 800 images to choose from, there is something to suit every taste.

Visit: www.raverat.com to browse the gallery and buy prints and other merchandise. Enter code SUMMER17 at checkout for a 10% discount.

The Raverat Archive will be exhibiting at the Cambridge Art Fair, Guildhall, Market Square, Cambridge from 9th to 12th November 2017 www.cambridgeartfair.com.
US national security has become so expansive as to be virtually limitless

Professor Andrew Preston is Professor of American History and a Fellow of Clare.

In American politics, the term ‘national security’ is everywhere: the National Security Council coordinates foreign policy; the National Security Agency performs electronic surveillance, including (potentially) reading your emails and texts; the National Security Advisor is one of the most important officials in government. Intervention overseas is always justified in the name of national security. When the president wants to get something done, you can be certain the phrase ‘national security’ is at the ready.

At its heart, ‘national security’ means safety, the defence of the nation against foreign threats. It is also so expansive as to be virtually limitless. For the past several decades, threats to America’s national security have been found everywhere, from the beaches of Cuba and the jungles of Indochina to the deserts of Arabia and the mountains of Central Asia. Under the aegis of national security, America has no defensive perimeter, and no interest is peripheral. But national security encompasses more than just physical threats. It also includes the defence of American values. National security is about safeguarding ideology as well as territory and sovereignty.

Where did this very capacious definition of the requirements of American self-defence, which is both physical and ideological and spans the globe, come from? Have Americans always thought of national security, threat perception and self-defence in the same way they do now? If not, then when and why did it change?

The idea feels like a very old one, but it isn’t. For most of American history, self-defence meant protecting the territorial sovereignty of the United States. To Americans living in 1776, 1861, 1898 or even 1914, the notion that defending the continental US required fighting wars in places like Korea, Vietnam or Afghanistan would have been baffling. In fact, for most of American history, global involvement was thought to bring trouble, not safety.

Instead of a timeless principle, our modern understanding of national security was invented in the late 1930s. At the time, most Americans were ‘isolationist’, in the sense that they didn’t want to become involved in the conflicts brewing in Europe and East Asia. President Franklin Roosevelt, who did want America to play a greater role in fighting Nazism and fascism, needed to convince them otherwise.

Roosevelt’s problem was that the ‘isolationists’ were right about one thing: the continental United States remained safe from attack by Germany, Italy, or Japan. By the traditional standards of self-defence, there was no need to become involved in foreign wars. So in response, he broadened the terms of self-defence to include the spectre of remote threats spreading from abroad, eventually reaching American shores. He also linked the physical safety of the United States to the protection of American values. He christened this new doctrine of defence as ‘national security’, a term he used between 1937 and 1941 more than all other presidents before him, combined.

This made sense in an increasingly interconnected world, and the rapid German advance across Europe in 1940-41, and the Japanese assaults on Pearl Harbor and in Southeast Asia in 1941-42, seemed to bear out his warnings. From there, national security became conventional wisdom virtually overnight. By the late 1940s, as the Cold War with the Soviet Union was intensifying, national security became the unquestioned, instantly understandable way to describe America’s place in a dangerous and globalising world.

Roosevelt was probably right to do what he could to get America into the Second World War. But by embellishing the threats America faced, and exaggerating them out of all proportion, he embedded a visceral sense of fear at the heart of US foreign policy. An over-sensitivity to threats, and an excessive enthusiasm to confront them with armed force anywhere in the world, are the legacies we still live with today.

Professor Andrew Preston’s history of American national security will be published by Harvard University Press.

When the president wants to get something done, you can be certain the phrase ‘national security’ will be at the ready.

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Illustration: Kate Copeland
Calling the under-60s: in 2017, this is what age looks like.

WORDS BECKY ALLEN
PHOTOGRAPHY BENJAMIN McMATHON

Forget the slippers, give up your idea of a quiet cottage by the sea and prepare to release your inner grey panther. Historian Roderick Braithwaite (Queens’ 1951) reckons it’s time that the younger generations realise what awaits them in their sixth, seventh and eighth decades – and beyond.

Writing to CAM a few months ago, he declared: “The Cambridge input lasts at least a lifetime. Whatever sized smoking volcano we once were, we are not all automatically extinct the moment we reach 65 and there must be many of us who are continuing to ‘produce’ way into the so-called grey panther stage.”

So what is it really like to work beyond the normal span? We talked to four leading Cantabrigians about why old age is no longer what it used to be.
I didn’t go to Newnham to become a doctor or a judge. I went for the benefit of a broad education in all its meaning.

RODERICK BRAITHWAITE (QUEENS’ 1951)
CORPORATE HISTORIAN
Retirement is a dirty word to me. I have retired, but I never use the word. Life for me is like a football game, it has two halves. At 85, I’ve been out of corporate life longer than I was in it.

I did my national service in Germany – on the Russian border – in MI8 and then went to the Southeast Gas Board. I found myself in the publicity office and loved it. Next, I got a job with an advertising agency and was finally CEO at Charles Barker. When I retired at 55, it opened unknown doors.

I’ve always had itchy fingers, but I only discovered that I could write books in my late years. My first book was published in 1991. I had a black tin box, which my late wife told me to open. In it, I discovered documents about an ancestor who went to west Africa in 1849, so I took them to SOAS and as a mature student I spent a couple of years in their archives researching and writing the book. As a result, I was elected a Fellow of the Royal Historical Society.

I discovered I was a linguist at Mill Hill School and got an open scholarship to Queen’s in languages. After a year I decided I didn’t want to go on reading Goethe and Schiller, so I switched to law. I should have read history, but it was only late in life I discovered how much I loved it.

What I got from Cambridge is intellectual integrity; knowing whether you’ve done a good job or not. A great friend, who died two years ago, called me a terrier. Once I get my teeth into a project I only let go once it’s done.

Cambridge shaped my life after retirement in quite a subliminal way. Cambridge to me was about achievement, not just sitting back and enjoying life but doing things, getting somewhere, having targets.

When Mill Hill School asked me to write their history, it took me two seconds to say yes. Then the publisher asked me to do the history of the Fuellers, a livery company. One of the Fuellers was Lord Ezra, former chairman of the National Coal Board, and nobody had written about him. We met once a month and I fashioned his memoirs – and what he told me about D-Day led to my new project on The Transportation Plan.

Asking someone at 85 what their next project is is a wonderful question. Most people wouldn’t think of what’s next, except a holiday in Ibiza or a cruise. I don’t think that way. Whatever brain cells I’ve got left, I’d like to make them work for their living. I will retire into the earth, that’s where I’ll retire.

JOAN BAKEWELL (NEWNHAM 1951)
JOURNALIST
I’m 84 and thinking what will I do next, what’s my next project? I’ve always wanted to work. It was very hard when I started out in the 1950s and 1960s. There wasn’t much going for women. I was relentless in my pursuit of opportunities. I just wouldn’t give up. What I’ve been able to do isn’t the result of intellect and intelligence but sheer determination and willpower – I’ve just not let go! I’m a great one for thinking up ideas and shopping them around. If you think up enough, then some will take.

I came from Stockport, which was smoky factories and post-war scarcity. When I arrived in Cambridge – this golden, sunlit, beautiful place – I just wanted to walk around and talk to everyone. I didn’t go to Newnham to become a doctor or a judge or a teacher. I went for the benefit of a broad education in all its meaning. I learned about argument and how to write a decent essay. Those were the superstructure to support the development of ideas. And that time informed everything; today there are so many ideas in the air, so many conflicting views, and I’m chasing them all and trying to work out what I think. So ideas matter hugely.

Has my attitude to work changed? I don’t know that it has, much. Freelance work in older age can be isolating. But it suits my temperament because I like periods of being alone – I can’t sustain the continual adrenaline rush of being in a team day after day. It’s exhausting. Work does get thinner on the ground as you get older, not least because my own generation’s dying off, so they’re not going to phone me. I depend on the friendship of young people. That’s very important.

It’s important as you get older to keep up with technological change, and I’m struggling to do it. But if I’m feeling a bit glum, I’ll fire off a few tweets before I get out of bed in the knowledge that, by the time I’ve had breakfast, people will have responded.

If I have an episode in my life when I lapse and don’t take an interest in things, my spirits fall very fast and I get a bit low. But it only takes a contact or an event, such as calling an election or someone asking me to do a voiceover or give an award, for my spirits to pick up.

There are so many more older people, and this cohort of the old is quite healthy and affluent and is flexing its muscles. We have to tell the young what we expect, and keep ourselves fit so we can look after ourselves – and each other. It’s the next social revolution. We’ve all got to help make later life worthwhile. It’s very valuable time.
Life is like a football game, it has
two halves. In my 85th year I've been out
of corporate life longer than I was
in it — longer out of work than in it.

MIRIAM MARGOLYES (NEWNHAM 1960)
ACTOR
Ours is a business that builds in insecurity. Without
the work we do, we don’t know if we really exist. It’s
proof of being. If nobody asks you to act, then you’re
not an actress, so we’re all very anxious, insecure people.
When you do get asked to work you feel you must
do it, because who knows when the next job will come
along. I’ve been very lucky in my life. To think that I’m
76 and I’ve been able to sustain a career from the time
I started without doing any other jobs.
I have more work than I’ve ever had in my life.
But it’s not always work that I want to do. It’s work
that I do to earn a living. I would like to do more in
the theatre, and I would like to be considered more
of a serious actress doing important work. So far I
don’t think I’ve achieved that.
At the moment I’m working in a play in the theatre
[Madame Rubinstein], which is a very demanding
role and it’s seven performances a week. A friend from
Newnham, Professor Nelson, was at the show recently.
We were on University Challenge together and I hadn’t
seen her for 30 years.
Cambridge gave me everything that I have. It gave
me knowledge, friends, emotional excitement; it was
an extraordinary emotion-filled, action-packed time —
exactly what it should have been.
In a professional sense, it is the study of Dickens
that has been professionally vital to me. I did my own
show, Dickens’ Women. People had to take me seriously
then because it was a combination of scholarship and
artistry which was very impressive. I’m extremely proud
of it — I’m not going to be humble — and it was only
possible because of what I learned at Newnham and in
the English Faculty through Jean Gooder and FR Leavis.
The thing about Cambridge is that I feel terribly
emotional about it. Whenever I come back I’m in tears
half the time because I see round every corner the ghosts
of the people I knew, the ghost of myself riding down
Sidgwick Avenue on my bicycle. It is full of precious
ghosts. It was a time that I loved, when I was fully alive,
when I became fully myself — it gave me the person I am.
It allowed me to do some very good work in plays
like Long Day’s Journey into Night and Macbeth, and I
was somebody in Cambridge — I think I had a sense
of myself. It was a magic time, no question about it. And it’s
gone, it’s gone for good and I shall never have that again,
and I mourn its passing — but I am so grateful for it.
Whether your problem is social, moral, ethical or hypothetical, the novel cure never fails.

Words Susan Elderkin and Ella Berthoud Illustration Matt Blease

We’re no longer quite sure which of us was the first to do it. But let’s say for the sake of argument that it was Suse who came back to her room one day in her first term at Downing College to find a book outside her door. It was a copy of Archy and Mehitabel by the satirical New York columnist, Don Marquis, famously written from the point of view of a cockroach who believes himself to be a poet. It didn’t take her long to realise who’d left it there – and why. Ella was the only person who knew that she, too, wanted to be a writer one day – and that she would need the sort of determination and perseverance that Archy had in order to stay the course – even if it meant having to hurl herself head first at each typewriter key in turn. On the inside cover she’d written, “If Archy can do it, you can bloody well do it too.”

A lot of books went between us after that – Jane Eyre, Mrs Dalloway, Charles Bukowski’s Women. Some novels showed us someone going through what we were going through, and helped us to feel less alone. Some rallied and inspired; some warned us off. Some simply calmed and soothed with the rhythm and pace of their prose.

Seventeen years later, with English degrees and rather more life experience under our belts, we finally found a word for what we’d been doing: bibliotherapy. The concept dates back to the Ancient Greeks, but hadn’t hit the mainstream for several hundred years. So here we are, in 2017, handing out books instead of prescription drugs – and offering cures for your social, physical and psychological problems, wherever you are in the world.

Susan Elderkin (Downing 1987) and Ella Berthoud (Downing 1987) are the authors of two bibliotherapy compendiums, The Novel Cure and The Story Cure (both Canongate). They run a bibliotherapy service at Alain de Botton’s (Caius 1988) The School of Life.
Many of us are regularly confronted with to-do lists that are so long, we’re paralysed before we’ve even begun. If this sounds familiar, read The Martian – the story of someone for whom completing their to-do list is a matter of life and death.

When a violent sandstorm hits the NASA spaceship Ares 3 during a mission to Mars, the crew’s botanist, Mark Watney, is buried in Martian dirt. His fellow astronauts leave him for dead; but as Watney slowly emerges into consciousness, he’s struck by the grim realisation that there’s no food, air, water, radio signal or hope of rescue for another four years. Watney’s only chance is to put his formidable knowledge of plant and bacteria life to immediate use. Or, in his words, “to science the sh*t out of this”.

What follows is Watney’s indefatigable ticking off, item by item, of what is possibly literature’s most daunting to-do list. He must somehow turn the 31 days for which his “Hab” is designed to keep him alive into 1,412 days. First job is to stitch up the wound in his own stomach. Second is to create soil to cover the floor of the Hab, turning flammable hydrazine into water, encouraging earth-born bacteria to grow. Ultimately he must produce enough food for four years out of the 12 fresh potatoes thoughtfully provided by NASA for the crew’s Thanksgiving meal.

Most people would just curl up and submit to an unpleasant death. But Watney greets each task with impressive zeal. With occasional glimpses of an agonized NASA watching from Earth, and the light relief of seeing Watney torment himself with the only entertainment available, Seventies TV, we root for the cowboy spaceman all the way. By the end, your own list will seem laughably easy.
The tendency to compare ourselves unfavourably to others is hard to avoid these days. Every half hour our computers ping us a Facebook status update announcing somebody’s self-proclaimed perfect day in their self-proclaimed perfect life, accompanied by a smiling couple on a white, palm-tree-fringed beach or up a skyscraper in New York. It’s enough to make you want to live inside a hermetically sealed box, unplug the computer and put on a noise-cancelling headset.

This is, in fact, what the protagonist of AM Homes’s book, Richard Novak, does – though for slightly different reasons. Since leaving behind his four-year-old son, Ben, after a divorce 13 years ago, Novak has lived in a glass box house, his life representing everything artificial about modern-day LA. The only people he sees are his housekeeper, his nutritionist, his masseur and his personal trainer.

But one day, Novak starts to feel again – beginning with an undiagnosed physical pain. Gradually, people start coming into his life: Anhil, the owner of the donut shop, Cynthia the put-upon housewife, and his ‘startlingly sexy’ movie star neighbour, Tad. The next thing he knows, he’s breaking his own rules – drinking coffee, snacking on donuts, bursting into tears... and he doesn’t care what anyone thinks.

Gradually Novak rediscovers an appetite for living his own life. Soon, this turns into an urge to be heroic – to rescue abducted women and save people from themselves. When his son Ben, now 17, pitches up on his doorstep, Richard is ready to rescue the most important person of all.

You’ve only got one life to live, and comparing yourself to others will only lead to dismay. By all means notice the achievement of your peers, and your own – but then turn your attention back to the job of living instead.
Let’s be honest: we suffer from it too. Part guilt, part yearning, the feeling is perhaps an inevitable part of being a reader, unless you have no job, a broken leg and live either alone or with someone who doesn’t mind your mental absence (eg a dog). We spoil many a reading moment fretting about this ailment... and then along came this witty novella and banished it forever.

When a travelling library parks behind Buckingham Palace one day, the Queen goes in to apologise for her barking corgis – she only borrows a book (by Ivy Compton-Burnett) out of politeness. The truth is, she’s never had an interest in reading. But brought up to finish “what’s on one’s plate”, she reads the Compton-Burnett, and follows it with a Nancy Mitford. Soon there’s no stopping her, and she takes off on a delightfully random reading extravaganza, devouring everything from Jean Genet to Anita Brookner – and wishing she’d started earlier.

Through books, the Queen discovers what it’s like to be ordinary. Books do not ‘defer’ to her, like everyone else; to books, all readers are equal. And in a lovely example of bibliotherapy at work, she expands her understanding of human nature and learns to empathise. None of which goes down well with her equerry. Sir Kevin, who sees how books are distracting her from her public duties (she gets very good at waving while reading as she parades down the Mall).

Sir Kevin’s concerns are not misplaced. The more she reads, the more the Queen starts to question what she’s doing with her life – and of course when you’re the Queen, such thoughts are problematic. Read this novel to reassure yourself that you’re reading just the right amount. Any more, and you may inadvertently turn your life upside down.
Back in the day, an individual suffering from hubris – overly confident or impressed with him or herself – would receive a stout put-down from the gods. Nowadays, we must look to our partners, family and friends to correct us when we get too cocky. But where do we go for our put-downs if, in these days of technical audacity, hubris has infected us all? To literature, of course – and post-apocalyptic novels such as Station Eleven.

When world-famous heartthrob, Arthur Leander, suffers a fatal heart attack while playing King Lear in Toronto, everyone is in shock. But Leander’s death turns out to be the prelude to a disaster of far more epic proportions. A fatal strain of flu is sweeping the world. Told of its spread as he tries to resuscitate Leander, trainee paramedic Jeevan stocks up on essentials, filling seven trolleys at a corner-shop. Then, holed up in a penthouse flat, he watches as civilisation implodes.

Fast forward 20 years and we find a very different world. Countries, as such, no longer exist and modern technology is inoperative. People scavenge and kill to survive. A prophet emerges who takes brides against their will, while claiming the ‘collapse’ was God’s way of purging humanity of their arrogance. His own hubris a twisted echo of Leander’s. But there is also Kristen who, as an eight-year-old, shared the pre-apocalypse stage with Leander in Toronto. As she recalls the end of the old world in flashbacks, she and a travelling troupe perform Shakespeare in an attempt to salvage the best of humanity’s legacy.

Read this novel to remind yourself of all that is worth preserving from the realm of art and our better natures. But also to ward against the feelings of omnipotence that man’s achievements can inspire in us. What is there to be proud about if all – or nearly all – is so easily lost?
One minute you’re poooting your way merrily down Sidney Street, whistling to yourself and marveling at the fact that you’re in good time for your supervision at the other end of town. But then you feel the dread bump-bump-bump of metal against tarmac. You look down to see your back tyre slouching towards the ground... So much for punctuality.

Do you curse, kick the bike and rage against fate? Or do you possess a strange sagacity born from the happy knowledge that you are like Santiago in Hemingway’s famous novel, to whom nothing is too great a setback? For once you have this tale at your mental disposal, all impediments, great and small, will be met with equal composure – to be analysed, observed and borne.

Santiago achieves his remarkable equilibrium after living a long and simple fisherman’s life in Cuba. Now an old man, he has been unable to catch a fish for 84 days. Nonetheless, he keeps going out in his boat alone, determined that this will be the day when his luck changes. And then he does indeed hook an 18-foot marlin.

The marlin, however, has other plans, and leads the old man a grim, three-day dance that ends with the fish being devoured by sharks while still attached by a line to his boat, even as a battered Santiago makes it back, barely alive, to his village. Physically, he’s ready to collapse on his bed – but mentally, spiritually, he’s been made stronger and more noble by this ultimately hopeless fight.

Accept the pain of wheeling your bike to the nearest verge, getting out your repair kit, and quashing your reluctance to dirty your hands. Infuse yourself with the spirit of Santiago, knowing that this setback will lead to greater depths of wisdom and forbearance – even if the puncture ultimately defeats you and you end up calling a taxi 🌟
Last year, Professor Magdalena Zernicka-Goetz made not one, but two world-changing discoveries.

WORDS LUCY JOLIN PHOTOGRAPHY KATE PETERS

Walk into Professor Magdalena Zernicka-Goetz’s laboratory and it is her sofa that catches your eye. A gaudy pink-purple, it is easily visible through the glass that separates the benches, fridges and microscopes from the office where she draws the threads of her thinking together. It converts into a bed – handy for all-night experiments. And it’s where her team sat last year, when, during a regular update meeting, they realised that they’d made a world-changing discovery. They had created a structure resembling a mouse embryo, entirely in the laboratory, using stem cells: a world first.

“I still remember that moment,” says Zernicka-Goetz, Professor of Mammalian Development and Stem Cell Biology and group head of the Zernicka-Goetz Laboratory. “It is one of the most happy moments in your life, when your dreams come true. You work on something, very intensively. You often have to inspire and motivate people in the lab to work on it. These are super-intelligent people. They do it because they see a value in it, not because you are telling them to. And the result is very much a team success.”

Until she was four, Zernicka-Goetz lived in her father’s scientific laboratories. Her family had lost everything during the war, including their home. Now, growing up in Warsaw, behind the Iron Curtain, the laboratory was home: a lab converted into the family’s apartment, with the kitchen installed in a corridor. Zernicka-Goetz would walk to her pre-school, hand in hand with her father, Professor Boguslaw Zernicki and together they would discuss his passion: the brain. How do we think? Why do we think? Where do our dreams come from? The young Zernicka-Goetz was encouraged to dig deep, to probe cause and effect.

“At the time, I didn’t realise it was inspirational,” she says. “Now, tracing my steps back, I can see the connection. At school, my biology teacher wasn’t so great. I wouldn’t have been so fascinated by science if I hadn’t had this charismatic father, motivated not by career progression, but by pure science.”

She came to Cambridge in 1995 as an EMBO Fellow, supervised by Professor Sir Martin Evans (who discovered embryonic stem cells). Her fascination, nurtured during her PhD at the University of Warsaw under the supervision of Professor Andrzej Tarkowski, was around the plasticity of embryos. They are gloriously flexible, she says: remove one cell from an embryo and
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the rest will develop normally. “We know that they can
recover from their different perturbations in early life,
hut how does that work? How do they recover? Embryos
of many other animals can’t do this, hut mammalian
embryos can. Why? The process fascinated me.”

She deliberately chose a different specialisation to
her father’s, not wanting to be directly compared to him.
But when it comes down to it, she says, both areas are all
about cells. “I was fascinated by our thoughts and where
they come from, and how it can all be narrowed down
to the function of individual cells within the brain,”
she says. “I like painting and sculpture, which somehow
translates into playing with embryos and stem cells.
Making shapes with them – that’s what helps me to
think and sometimes inspires me.”

Zernicka-Goetz’s playful and imaginative
attitude to the astonishingly complex structure that
is the mammalian embryo has given rise to some
extraordinary work. In 2016, Nature and Nature Cell
Biology published her papers outlining a new technique
for allowing human embryos to develop in the lab
for up to 13 days. Previously, embryos could survive
in vitro for only seven days (the point at which an
embryo would normally implant into the womb).
The new technique is vital for studying early
pregnancy loss. Under UK law, researchers are permitted
to study human embryos in the lab for up to 14 days, but
as no method existed for keeping them alive after seven
days there was no way to study the changes which might
be taking place. Then came Zernicka-Goetz’s technique,
which involves creating a system in the lab which allows
embryo cells to organise themselves to form a basis for
future development, just as they do in the womb.

Zernicka-Goetz had wanted to develop just
such a system from her very early days as a biologist.
“1 very much wanted to grow these embryos beyond the
so-called ‘blastocyst’ stage – the fourth day of their life
in the culture dish. This is when the transformation of
an embryo’s architecture happens. Nature looks very
different before the embryo is implanted, and
afterwards.” Her supervisors discouraged her. Far too
difficult, they said. “Lots of famous scientists had tried
it and failed, so they told me I should not be wasting
my time. But seven years ago, I decided to return to my
dream. And it worked.” That work resonated around
the world, winning the People’s Choice award for
Science magazine’s ‘Breakthrough of the Year 2016’.

Then, this spring, came her work on growing mouse
embryo-like structures. Zernicka-Goetz was on her way
to Paris to make a speech when she heard of the paper’s
publication (authors are not told in advance when their
papers will be published in scientific journals). Interest
was phenomenal – the world’s media descended on her.
“It was a very important speech, which I was honoured
to have been asked to give, and I didn’t want to cancel,”
she remembers. “So I spent the whole journey on the
Eurostar on the phone to journalists. It was actually
more stressful than happy as I wanted to be part of
it, but had to delegate it to people in the lab, and to
everybody who I knew I could rely on reporting the story
accurately and say: please go to the TV studio and speak
about it, because I can’t do it! I have to give this speech!”

How did her team achieve this landmark when all
other efforts failed? Like many discoveries, it came about
through a new way of thinking about the problem, says
Zernicka-Goetz. The key to her success lay in the use of
two different kinds of stem cells. “The first type of cell,
pluripotent embryonic stem cells, make the mouse baby.
The second type, multipotent trophoblast stem cells,
make the placenta,” she explains. “We allowed these
two types of stem cells to interact with each other
by providing an extra-cellular matrix to help them
communicate – a kind of 3D scaffold. We hoped that
they would self-organise to create an embryonic
structure – and they did.”

It is important to understand that this is not
’creating life’. Her team will not be attempting to ’grow’
baby mice in the lab. Rather, Zernicka-Goetz says, this
work is providing a system to enable scientists to better
understand development. Using actual mouse embryos
in research is not ideal: they are complex structures
which aren’t easy to grow at the life stage that is of
interest to Zernicka-Goetz’s team. Mimicking the
developmental processes taking place in these embryos
using stem cells is far more convenient. “And this is of
enormous importance,” she says. “This is the stage
where many human pregnancies fail. Human and
mouse development at this time have a lot of common
elements. So using this system, we will be able to
identify the role of specific genes and processes, and
the communication between different kinds of cells
in order to build the organism.”

Two world-changing discoveries in a year is an
astonishing record, but Zernicka-Goetz says she doesn’t
necessarily feel proud. “Often, in life, things are mixed,”
she says. “You have to deal with happy moments and
difficult moments. The difficulty for me is still mastering
my balance between my life as a scientist and teacher
and mother and friend and wife. During the normal day,
I often run to keep up with it all – all those different lives.
So when the unusual happens, it is overwhelming and
you feel not proud but rewarded. Rewarded for all this
effort, and training, and forgetting about your own
feelings and life for what you are trying to achieve.”

It’s hard for her to predict the future, she says. Her lab
is currently working on 17 different projects. Her ideas
develop as they go along, she says, but behind them,
always, lurk the biggest of big questions: where does life
come from? How does it start? And why do we still know
so little about it? “I often wake up with ideas,” she says.
“Perhaps I see something during the day, or I think of
something in conversation, or when I am discussing
something with my kids. Sometimes I go for a run and I
think about how we might solve a specific problem. But
the important question for me is to find a way to address
those big questions. We know there are many things we
don’t know, so how do we find out about them?”
1913-14  MONTAGUE RHODES JAMES
1915-16  THOMAS CECIL FITZPATRICK
1917-18  SIR ARTHUR EVERETT SHIPLEY
1919-20  PETER GILES
1921-23  EDMUND COURTENAY PEARCE
1924-25  SIR ALBERT CHARLES SEWARD
1926-27  GEORGE ARTHUR WEEKES
1928    THOMAS CECIL FITZPATRICK (AGAIN)
1929-30  ALLEN BEVILLE RAMSAY
1931-32  WILL SPENS
1933-34  JOHN FORBES CAMERON
1935-36  GODFREY HAROLD ALFRED WILSON
1937-38  HENRY ROY DEAN
1939-40  ERNEST ALFRED BENIANS
1941-42  JOHN ARCHIBALD VENN
1943-44  THOMAS SHIRLEY HELE
1945-46  HENRY THIRKILL
1947-48  CHARLES EARLE RAVEN
1949-50  SYDNEY CASTLE ROBERTS
1951-52  SIR LIONEL ERNEST HOWARD WHITBY

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For an institution that is more than 800 years old, seven years feels like the blink of an eye. And yet that is the maximum length of time that every Vice-Chancellor gets to make their mark – to deliver a vision, to make a contribution, and to make an impact that can be felt decades or even centuries into the future. How do you approach the time you have? What do you prioritise? And what do you want your legacy to be? These are the questions that may well determine your success – or otherwise.

One man who knows how quickly seven years can go by is Professor Sir Leszek Borysiewicz, who in 2010 began his inaugural address as the 345th Vice-Chancellor by reiterating Cambridge’s purpose in the world. This October, he will hand over the helm to Professor Stephen Toope. So how has he approached his time at the top?

“You do have some key agendas,” he says. “The key driver for me – and one I think most people are fed up of my citing – is the part of our mission statement which says our role is to ‘contribute to society through the pursuit of education, learning and research at the highest international levels of excellence’. First and foremost, I felt my role was to ensure that Cambridge remained among the top international universities able to do that,” he says. “Alongside that, I wanted to rapidly begin to develop the physical estate and provide the physical infrastructure needed to sustain excellence, as well as getting the right individuals here. And finally, I wanted to strengthen the postdoctoral community.”

And then, as Sir Leszek wryly observes, events take over. From the very beginning of his term in office, the ability to plot out a seven-year plan has been tempered by the need for pragmatism in the face of external pressures. He says: “Even within six weeks of starting, we had the debate on the big increase in student fees, and what they would do in terms of our ambitions to widen participation.”

“That’s what happens all the time in a role like this. The changing nature of political climates and challenges means you may have a vision and you push toward it, but you’re going to be deflected and pushed around. The trick is to always keep your eye on the horizon of maintaining excellence.”

All the while, there is the daunting complexity of the University to contend with. “I think most people may not appreciate what a huge enterprise Cambridge University is,” he says. “This is an institution with the best part of 13,000 undergraduates, 6,000 postgraduates, 4,000 postdocs and around 11,000 staff. On the financial end, it’s an organisation that turns over £1.6bn per annum.

“It has strategic partnerships with the NHS, involving all 31 Colleges; it has links to the City, and to the political issues that are going on in Whitehall. And it has a high level of influence with large companies and virtually all the charities and major funders of research projects.”

Effecting change in a short period of time often means having to shift focus from broad considerations of policy to the individuals who make up your team or community – the people who will actually deliver the strategy. “He has done a fantastic job at this,” says Professor Christopher Dobson, Master of St John’s. “He has managed to combine the big picture of Cambridge’s role in the world with an interest in individual people’s research programmes, or the nitty-gritty of giving lectures that students go along to.

“One of the things I admire is his ability to relate to all sorts of different people, from prime ministers to undergraduates. Approachability is a very important part of leading a diverse group of people in our slightly strange, democratic system. And, of course, his support for particular projects has been incredibly important, from Addenbrooke’s to women’s rowing. He’s somebody who takes on issues and sees them through.”

What about the form of complexity that is unique to Britain’s two oldest universities – the collegiate system? How does that help – or hinder – a time-limited delivery plan? The Vice-Chancellor says: “That question, about how impossible it must be to work with 31 Colleges, is probably the most common one I get asked. And my response is that it is probably one of the highlights of the Vice-Chancellorship for me.

“I don’t mean to say that we’ve always seen eye to eye on every issue. But the Colleges remain unique to this University and our friends in Oxford. It’s a system that provides individual support at an incredible level for our undergraduate and graduate students, to help them achieve in ways that many other universities are not able to do. It’s expensive, to be sure, but I believe that expense is more than worth it, in terms of what we’re able to deliver.”

Indeed, the Colleges have been vital in helping to bring about one of Sir Leszek’s most prized achievements: ensuring better conditions for those engaged in postdoctoral research. He says: “These individuals are so much the bedrock of what Cambridge is able to achieve, particularly in terms of its research area. I wanted to make sure that the collegiate University was able to recognise postdocs, not just as individuals who work on particular projects, but as fully integrated members of the academic community.”

Sometimes, the role you sign up for changes as much as the environment, and in the past few years, the ambassadorial duties of the Vice-Chancellorship have gained far greater prominence. “At Russell Group universities, the role has changed,” says Professor Abigail Fowden, Head of the School of the Biological Sciences. “A vice-chancellor used to be the senior administrative officer, but now they’re much more outward looking. I think this has played to his strengths. He is an extremely good communicator, and this has been an advantage in the business of advocacy with the Government.”

Sir Leszek says that three types of engagement have proved particularly important. He says: “Firstly, there has been the development of regional agendas. Cambridge is not a university in isolation; it has been seeking to work with our nearest friends, from the
You have key agendas but then, as Sir Leszek wryly observes, events take over. From the very beginning of his term, the plan has been tempered by the need for pragmatism in the face of external pressures.

University of Essex and UEA Norwich to our closest colleagues at Anglia Ruskin. We’re increasingly coming together to establish a sense of regional identity and regional engagement.

“The second is at national level and with the major funders; to ensure we can participate as effective collaborators and partners on major programmes and projects. Then we have the international developments in China, India, the United States and many other parts of the world. It isn’t just around developed countries. The Cambridge-Africa programme is something I’m particularly proud of. I think that’s fantastic for the future, because it ensures that young people will take a truly global perspective on what the University of Cambridge can offer.”

Professor David Dunne is the director of the programme, which supports the career development of African researchers through partnerships with universities and institutions across the continent. He says: “His definition of an international university is one that shares its world-class expertise, facilities and experience to support fellow academics in the world’s least-resourced countries. He has shown absolute commitment to that during his time in office.”

That commitment has resulted in action. Under Sir Leszek’s watch, the University has established 25 PhD scholarships for applicants from sub-Saharan Africa, and fee waivers for postgraduate applications from the most economically disadvantaged countries. Professor Dunne says: “I think he has a particular commitment to supporting African researchers – one that may have been reinforced by his early experiences as a young medic in West Africa. He has often given speeches about the responsibility of universities to the world’s poorest billion people, and I think this is an absolute keynote of his influence on this University.”

Domestically, the greatest disruptor emerged in the Vice-Chancellor’s final 18 months of office. “Brexit has been a challenge,” he says. “I make no bones about it – I was a staunch remain, but I recognise the decision that the referendum reached and understand why we will be leaving the EU. At the same time, we mustn’t damage the fantastic academic collaborations that we have with our European colleagues and counterparts. We are the UK’s most successful single institution in Europe, and it’s so important for Britain’s position in the future that these relationships continue to evolve and develop.”

Securing the University’s financial future has been one of the Vice-Chancellor’s main strategic objectives. Here, Sir Leszek has built upon the work of his predecessor, Professor Dame Alison Richard, in making philanthropy a priority. “We have many sources of government, international, commercial and other research funding available to us as an institution. However, philanthropy is unique. Very quickly in this role, one begins to realise the many advantages in having established relationships with like-minded philanthropists who subscribe to the University’s mission, understand us as an institution and really wish to contribute.”

When he took office, the 10-year fundraising drive to mark the University’s 800th anniversary was being wound down; it has been followed by the “Dear World... Yours, Cambridge” campaign that aims to surpass its success. He says: “On top of the £200m or so we raised for the back end of the old campaign during my tenure, we’ve raised £860m for this latest one. I’m sure that it will reach its target of £2bn, ensuring we maintain the diverse funding base that allows us to have the academic freedoms to carry on being the institution that we are.”

The legacy of Sir Leszek’s seven years in office on Cambridge’s built environment has been profound, and nowhere is it more evident than at the £1bn North West Cambridge development. “It’s the most ambitious project any university has really embarked on, to develop a new part of the city to ensure we can remain competitive despite rising accommodation costs,” he says. “Then we have all the other buildings that have been put up during my time – in particular, the development of the Addenbrooke’s campus.”

Beyond this, what does he think his legacy has been? “I suspect that will be up to others,” he says. “But I hope I’ve been able, during a reasonably difficult time, to sustain Cambridge’s enviable international positioning as a major centre of learning; to attract amazing staff and students to this institution; and to leave it well-placed to take on whatever challenges may be present in the future.”

Colleagues will have more personal recollections of his style of leadership. Professor Fowden says: “He has a scientific mindset – his views are evidence driven, and we get clear-cut decisions as a result.”

“I’ve always felt that he enjoys the job,” says Professor Dobson. “I’m sure there are bits of it that aren’t fun, but you always get the feeling that he’s fundamentally optimistic and looking for the opportunities that exist, even when circumstances come along that he might not like much. I don’t think you can have a forward-looking institution if the head of it isn’t optimistic.”

It is a sentiment that the Vice-Chancellor echoes in his handover notes for his successor. “I would say, you are privileged to have the best job in the world,” he says. “So enjoy it – and make sure that you fully engage with all of the wonderful people who are here in Cambridge.”
A NEW NORMAL

Forget everything you know about how the world works. This is the global economy, 3.0.

WORDS ALEX MARSHALL ILLUSTRATION DAN WOODGER
Most of the world’s leading economists reckon we are – probably – heading towards a future of slow, but steady, growth. Great news, right? We survived the Great Recession. Back to normal. Phew!

Well, sort of. The bad news is that those same economists are pretty glum about that future. Not in a we-don’t-like-uncertainty, what-will-Brexit-and-populism-lead-to kind of way. Because, really, that would be understandable. More in a there-are-fundamental-problems-that-are-hard-to-fix kind of way. In a future-economists-are-ongoing-to-struggle kind of way.

Take Adair Turner (Caius 1974), now at the Institute for New Economic Thinking, formerly of the UK Financial Services Authority and the International Financial Stability Board’s major policy committee: “The world economy does seem to be going through a bit of a recovery,” he says. “But the fundamental problems are still there, and they’re quite profound.” Profound you say? We wanted to know more.

**PROBLEM NUMBER ONE: GLOBALISATION**

You may have got used to hearing politicians say that globalisation (the free movement of capital, goods and people) is a problem. But from some economists’ perspectives, it’s far from that alone – it just makes for an obvious target, as Dr Meredith Crowley, Lecturer in the Faculty of Economics and former senior economist at the Federal Reserve Bank of Chicago, explains: “Globalisation – for example, rising imports from China – bring a lot of benefits, especially to low-income people in high-income countries, because those imports are really cheap. It means the prices of consumer goods are falling, which means budgets can be stretched further,” she says.

“But at the same time as imports are pushing prices down, wage growth for that lower-income group has been very, very slow. Flat. For those at the very bottom it may even have been negative. Maybe both parents are working, all the time, but neither of the jobs is very good. Or where there’s only one wage-earner, and they lose their job, then that family is going to have a terrible struggle.”

But isn’t globalisation the reason why wages are flat? And haven’t the jobs all gone to China? According to Dr Crowlehy, this is only part of the picture. “I think the reason so many jobs have been lost is primarily due to automation – that’s the fundamental driver. But at the same time, the reason why firms in high-income countries want to pursue automation is because they are under competitive pressure from foreign imports. So while, in the long run, most economists would say the driver is technology, the two are self-reinforcing.”

**PROBLEM NUMBER TWO: AUTOMATION**

Which brings us to profound problem number two. Automation and new technologies are transforming our world – and creating great value. In theory, if robots take your job, the overall increase in productivity should result in your being able to get a better job – or, in wider terms, it should result in greater employment opportunities and rising incomes.

Indeed, says Todd Buchholz (St John’s 1986), US economist and George HW Bush’s White House director of economic policy, you just need to look at the New York Stock Exchange. “When I’m in New York, I often go down to the Exchange to do interviews. And it’s basically just a TV set – there aren’t any traders on the floor. They’ve been replaced by algorithms.”

Noreena Hertz (King’s 1992), author and ITV News’s Economics Editor, reckons traders won’t be the only ones. “I’m of the view that there are going to be very severe job dislocations and that technological disruption will create clear winners and losers,” she says. “The owners of machines will do well. Those who have been replaced by them, won’t. Which raises the question: will everyone ultimately lose out in the long term, including the owners of capital? Because there will be fewer people with money to spend.”

Indeed, it is the inequity that many economists find the most alarming. Dr Ha-Joon Chang, author of *23 Things They Don’t Tell You About Capitalism* and Reader at the Faculty of Economics, says that this is what makes 21st-century automation different. “In the 1950s, ’60s and ’70s relentless automation resulted in many workers finding new and better jobs, because...”
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the economy was expanding. Workers’ rights were strengthened, and they took a substantial part of the gain,” he says. “So the problem is not automation itself, it’s the social economic arrangement: labour rights, the increasingly uncontrolled power of corporations and the increased financialisation of the economy.”

But even if you believe that, eventually, automation will bring benefits to workers, there remains a big question about how long that might take. “If you look at industrialisation in the first 40 years of the 19th century, almost all the benefits of rising productivity went to the capitalist class and particular categories of skilled labour,” says Adair Turner. “Eventually, in the late 19th century, it swings around – so in the very, very long term, real wages rise with productivity, but that might not take a decade, it might take a century.”

LEADING TO PROBLEM THREE: FEWER GOOD JOBS
According to Dr Crowley, the biggest concern of policymakers across the world in 2017 is securing high-quality employment for their citizens. “Whether you are from a high-income, middle-income or low-income country, it seems like everywhere you go in the world the concern is about jobs. People want good jobs – the chance to enhance their own life and wellbeing and, for the most part, not through a handout but through a job. They want to be able to contribute,” she says. “The really difficult question is: ‘What can we do to improve that?’”

For Buchholz, the answer is simple: education and training. “If you ask me what is the most important long-term economic challenge, it’s not interest rates or tariffs – it’s education. We’re in a global race for IQ points, and whoever harnesses intelligence will prosper most,” he says. “We need to recognise that the era of the long career at the single firm with a gold watch upon retirement doesn’t exist anymore. People will need to be more entrepreneurial and look after themselves, and we need to equip people for that world.”

But the future is unpredictable. The skills needed now may not be those most valued tomorrow. Worse, the real issue is not with the young, but with the old. “We know from the research that educating the under-fives has a major, and lifelong, economic impact,” says Dr Crowley. “But as people age, it becomes harder and harder to get value out of training and education. It’s really hard to come up with a programme that retraining 40 and 50-year-olds in a way that makes them really successful.”

That’s not the only problem. Even if you can train people in the ‘right’ skills, it may not help. “However skilled people may be, not everyone can earn their living writing software because there is only so much software that needs writing,” says Turner. “And while it is true that new jobs will be created – shining people’s shoes, looking after elderly people, gardening, serving at people’s parties, because there is no limit to what you can find people to do – those jobs may be at wages so low that the people who do them no longer feel they are equal participants in society. That means we cannot necessarily rely on participation in a free labour market to give people a standard of living that enables them to be equal and contented citizens.”

And that can lead to the kind of political unrest that could become really serious. “A regime of low investment, low growth and low quality of employment has been built into the system, resulting in the growth of income inequality, which in turn results in less demand and further discourages investment,” says Dr Chang. “This is a recipe for increasing social conflict, right?”
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Problem number four: Low growth

The usual solution to all of this would be to boost growth (low growth also being the cause of the problem). But as Dr Jeremy Green, Lecturer in International Political Economy, explains, growth is in short supply.

“Economist Larry Summers calls this the ‘secular stagnation thesis’ – the idea that there is a long-term decline in demand because of aging populations, technology companies like Apple and WhatsApp that don’t need to invest as much to generate profits and the automation of the workforce,” says Dr Green. “And then you have someone like Robert Gordon who argues that the new sectors of the economy simply don’t generate productivity on the same levels as new industries did in the 19th and 20th centuries, again resulting in the long-term slowing of growth.”

In this model, income inequality and low investment are both causes and results of low growth and, for Dr Chang, that means the answer is to take a strong line across the board. “If I could implement any change I wanted, I would be arguing for some serious downward redistribution of income rather than the upwards redistribution we have seen in the past three decades.

“I’d want serious restraint put on the financial sector so that they would not be able to impose a short-term bias on the economy. I would abolish tax havens, with the income brought back home to fuel the national economy.

“And I would say, yes, there has to be more focused industrial policy if we are going to create decent jobs and not just these fake self-employed jobs that put people on the breadline. There are obvious things that can be done and have good backing of economic theories. But unfortunately few of these are likely to be done in the current political arrangement.”

However, Mervyn King (King’s 1966), former governor of the Bank of England, reckons that the solution lies at the international, rather than the national, level. “Monetary or fiscal policy is not the answer – we just end up returning to the pattern of spending in 2006 [just before the Great Recession]. Total debt is now higher than 2007 and we need to recognise that,” he says.

“Instead we need an array of incentives, changes to exchange rates and structural reforms to enable a rebalancing of global economies. Germany and China need to invest less in export sectors, and the UK and US need to invest less to support domestic spending.

“That’s difficult as no one wants to be the first mover. The International Monetary Fund needs to play a bigger role and bring countries together, but it gives no confidence it will. I don’t have confidence that the necessary changes will happen.”

Dr Chang and King may be sceptical about the political will required to implement change, but at least they think the problem can be fixed. Many economists believe that the most honest response to the current economic situation – low growth notwithstanding – is to accept that economics may not have an answer.

“We’re dealing with a situation in which the dominant thinking is lagging behind changes in the actual economy,” says Dr Green. “It’s a little bit like the 1920s – policymakers were so wedded to the idea of the Gold Standard that they tried to resuscitate that system, with very destabilising effects. That approach lasted until the 1930s, and the breakdown of the whole liberal economic order.”

So, there you have it. We may have turned a corner but there’s an awful lot waiting for us there.
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Professor Anna Vignoles is Professor of Education, Director of Research at the Faculty of Education and a Fellow of Jesus.

1. INEQUALITY: WHAT CAN BE DONE?  
TONY ATKINSON  
Tony Atkinson died this year. He was an incredibly kind man, as well as an amazing academic. He really cared about income and wealth inequality and wanted to measure and document it carefully, to make reasoned arguments about how we should address it. I didn’t agree with all his proposals, but he was a rare academic in that he was very clear and comprehensive about what he thought we could do to bring about a shift in the distribution of income in developed countries – and that’s what makes this book so important.

2. HUMAN CAPITAL  
GARY BECKER  
This was the first text I had to read for my PhD. It comes up for criticism for reducing education to an investment – but I think that’s a misreading. What it actually does is highlight the opportunities that come out of education and therefore why equal access (or at least reducing unequal access) to education is critical. Education is such an important pathway to being successful, economically and socially. I saw this for myself, when I was working in HR in South Tyneside recruiting factory workers. I found it incredibly interesting, but also difficult because some people had so few skills that we couldn’t employ them.

3. DOWN AND OUT IN PARIS AND LONDON  
GEORGE ORWELL  
I first read this when I was 16. It sparked my curiosity about how we end up with inequality and massively influenced my decision to do Economics at A level. Looking back, I’m not sure just how much I really understood of the book, but I do remember it impacting my understanding of what it means to be rich or poor and it changed my thinking about how people react to others based on their wealth. That’s the bit that really stayed with me – how the poor were invisible and ignored. I went back to the book when I was older and instantly saw why I’d been so moved by it.

4. GRAPES OF WRATH  
JOHN STEINBECK  
I went to high school in the US and, as an English outsider at a school in Baltimore, I was struck by how incredibly divided America was compared to some other cultures. When we were set this text, it was illuminating not only because it’s amazingly well written, but because even though Steinbeck is writing about the Great Depression, I felt that a lot of what he talked about still had resonance. I think it should be compulsory reading, especially in the era we are entering, where we seem to have forgotten what the past has taught us. I re-read it a couple of years back and my own children have appreciated it too.
It’s not over until it’s over

As this year’s crop of Finalists come to the end of their time at Cambridge, we talk endings – and new beginnings.

Your final year at Cambridge is such a mixture of emotions and experiences: the joy of delving deeper into your subject, the pressure of Finals and extracurricular activities, and the excitement and fear of going out to try your luck in the wider world. But every Finalist has one thing in common: a well-prepared and slightly weary answer to the eternal question: “So! Graduation! What are your plans?”

For Bea Hannay-Young (Emmanuel, Human, Social & Political Sciences) the question looms large.

“Thinking about the future occupies a pretty big chunk of my time,” she says. “The final year is when you start realising you are not coming back to Cambridge next year and begin thinking about what you want to do after that.”

Hannay-Young is hoping to take a year out to “expand my CV and bolster my savings”, then take a Master’s in Chinese art and Mandarin. She would eventually like to become a Chinese art and antiquities expert. To that end, she’s been using all the schemes the University offers, such as attending Arts and Heritage networking events and Arts career panels.

“It’s hard to tell what the jobs market is like. On the one hand, there’s a lot of talk about the culture boom and an increasing demand for people to participate in art. On the other, people who work in mid-level positions say it’s very competitive, as so many people want these jobs,” she says. “So hearing industry professionals talk about their experiences and give advice has been really useful. There are so many different things you can do in the arts – lots of people flit around between different jobs, working in many different departments before they find somewhere to settle.”

The final year has also been a whirlwind of activity for Hayden Banks (Queens’, Human, Social & Political Sciences). He has served on the JCR committee, is Queens’ LGBT representative and previously College’s access officer, and is the publicity officer for the University’s branch of educational charity Education Partnerships Africa – and all the while, thinking about his post-Cambridge future.

“I’d like to work in international development, policy or social mobility. I’ve had a one-to-one meeting which was pretty good. I’ve also been applying for roles in various charities and the Department for International Development graduate scheme. Of course, it’s very competitive.”

And for some, being a Finalist is about discovering what you don’t want to do. Brontë Philips (Newnham, Asian and Middle Eastern Studies) started the year with every intention of going into law. The Careers Service, she says, were hugely helpful. They identified opportunities and advised on her CV, training contracts and vacation schemes.

When a careers adviser, during a practice interview, asked her: “Are you sure you want to do this?”, Philips reconsidered.

“Partly because I am so enjoying the work in my final year, I’ve decided that I want to stay in academia but I will probably take a year out,” she says. “The final year is more intense but it feels like real academia. It feels like you are closer to the source, not just doing something for the sake of it.”

Her future could involve translation or policy and research – the effect of sanctions on Iran, for example. But she wants to keep her options open.

“I think we get the feeling there is so much rush to have a job straight out of university: you have to be sure, you have to earn megabucks,” she says. “I need to stop and have a minute to reassess everything. I think it is important that people know you can do that.”

To share your employment experience with current undergraduates and find out how the Careers Service supports Finalists, recent graduates and alumni visit: careers.cam.ac.uk
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(Michael Griffiths, Corpus Christi 1957)

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That kind of scope and colour and density of sound. It transformed my world.

Joanna Marsh (Sidney Sussex 1989) is composer-in-residence at Sidney Sussex and co-founder and artistic director of ChoirFest Middle East.

“I loved lying on the sofa late at night playing this track about a hundred times in a row.”

PRELUDE AND FUGUE NUMBER 4 IN E MINOR
SHOSTAKOVICH
In my second year, a friend gave me Shostakovich’s 24 Preludes and Fugues for Piano, Op. 87 played by Tatiana Nikolayeva. Each one is unique. I loved lying on the sofa late at night playing this track about a hundred times in a row. It has a soulfulness about it.

PAVAN: PARADIZO
ANTHONY HOLBORNE
This was on a disc by Fretwork called Armada, which was music for viol consorts in Elizabethan England. I knew viols existed but it was a very theoretical knowledge of these strange, thin-sounding instruments. Anthony Holborne showed me that they were capable of a rich, broad, textured sound.

A (ST PAUL’S SERVICE)
HERBERT HOWELLS
I went to Cambridge as organ scholar at Sidney Sussex. The organ was very present at that stage of my life as I learned a new repertoire. Howells is unmistakable as an individual voice. That kind of scope and colour and density of sound; it transformed my world.

IF I EVER LOSE MY FAITH IN YOU
STING
I listened to this a huge amount and now I see how well-written it is: strong ideas, efficiently expressed – a clear musical language that doesn’t faff around. I heard Sting here in Dubai last year and felt transported back to my room in College – I could practically smell the dust.

Joanna Marsh will premiere her new Magnificat and Nunc Dimittis in the Chapel, Sidney Sussex on Sunday 12 November. For more information please visit: sidneysussexchoir.org/news
EXTRACURRICULAR CROSSWORD

CAM 81 PRIZE CROSSWORD

Titles by Schadenfreude

ACROSS
2 Abuse Republican with a symbolic gesture (5)
8 Admin unit’s not working for the French hippodrome agents (6)
13 Visionary haunts lofty stronghold (5)
14 Right anterior length of an old organ (6)
16 Power shown by senate backing more than one legal venue (6)
17 Souls strengthen us after a time (6)
19 Company rule confused Hard Times translator (7)
20 Hotel in deserted principal town west of Surrey (8)
22 Shrubs and trees fading over open country (4)
24 Pay attention to male Arab with mighty range of knowledge (7)
26 Woolly mink left a scent (6)
27 Some decaying not accurately specified particles (6)
29 Retired teacake vendor tucked into skinned steak fillet (7)
31 Dull affair abandoned by Elizabeth (4)
36 Large plant meter wrongly installed in new water pump at Wick (8, 2 words)
37 Admirable chap is framed by half backward swimmer (7)
40 Scots below a town in Wales (6)
41 Trophy accepted by loose broadcaster (6)
42 State provisions expert’s eating in (6)
43 Bears near the empty square (5)
44 Deck accommodating united force completely (8)
45 Stage catchword Romeo’s forgotten (5)

DOWM
1 A language acting naval officer initially heard in US city (6)
3 Water drowning son of a bear (6)
4 Extinct creature as before eats at home (4)
5 Cheese cooked following recipe emits an offensive smell (7)
6 Anonymous special order involving Liberal and Tory (4)
7 Henry and one junior associate finally finish going out (6)
9 Playwright’s unopened tomb (5)
10 Tools for compressing resin lacking density restricted by Royal Society (7)
11 Logged call for Latin American in islands north of Malta (5)
12 Tiny marine organisms start to settle under rough stones (7)
15 Posh non-smoker (sort of decent) not wearing perfume (9)
18 Doughty African rhino leaning awkwardly after about 536 metres (9)
21 New data removed from wizard software on trial (4)
23 Use a hammer to fix leak over new patio (4)
25 Frozen silver fish on board large Dutch trailer (7)
26 Brave as female captured by ordinary unit (7)
28 Excursion using plane circling university somewhere in Devon (7)
30 End of peace interrupts these clumsy laughs (6)
32 Old awards remain special, including Tourist Trophy (8)
33 Money box is in the front room holding special charm (6)
34 Dab boat master found in catch (5)
35 Settled like some Baltic dust (5)
38 Spiteful sort used to be soft (4)
39 Wild beast turned over amateur Australian hunter (4)

SOLUTION TO CAM 80 CROSSWORD
STRANGE CAREER BY SCHADEFFREUDE

Extra letters from wordplay give ROLE, ACTOR’S NAME, NAME OF CO-STAR. Missing letters from wordplay give IT’S A WONDERFUL LIFE (cells highlighted here for information only), a film starring JAMES STEWART (replacing his role GEORGE BAILEY in the leading diagonal) and DONNA REED (highlighting required). Note that the second A in BAAED was L in the preliminary grid.

Solutions and winners will be printed in CAM 82 and online at alumni.cam.ac.uk/magazine on 15 September 2017.

All entries to be received by 1 September 2017.

Please send completed crosswords:

- by post to CAM 81 Prize Crossword, University of Cambridge, 1 Quayside, Bridge Street, Cambridge, CB5 8AB
- online at alumni.cam.ac.uk/crossword
- by email to cameditor@alumni.cam.ac.uk

The first correct entry drawn will receive £75 of vouchers to spend on Cambridge University Press publications and a copy of The Cambridge Art Book: The City Through The Eyes Of Its Artists edited by Emma Bennett. The book captures the essence and energy of Cambridge through the work of local contemporary artists (UIT Books). Two runners-up will also receive £50 to spend on CUP publications.

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Image: St John of Chrysostom, engraving c. 1880