# EXON

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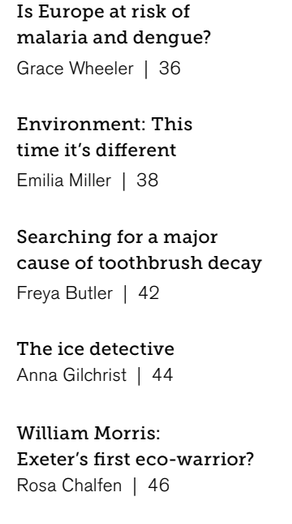
INNOVATION • LEARNING • RESTORATION

**THE ENVIRONMENTAL ISSUE**

# RED SKY AT MORNING

## THE RACE TO SAVE OUR PLANET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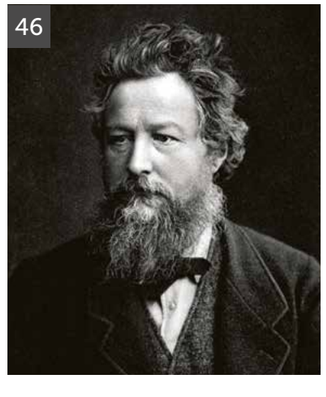
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# Editorial

This edition of *Exon* is different from previous years because, I am happy to say, for the first time the large majority of feature pieces are written by students. That reflects how strongly our students feel about this year's theme: *environment*. I often invite students to submit articles for *Exon*, but never before have I had so many volunteers anxious to write on a topic about which they feel so passionate.

I've interpreted the theme broadly, with articles comparing Oxbridge and US Liberal Arts learning environments, exploring how our childhood environment shapes who we later become, and discussing how we can create environments that promote innovation, sporting success, or equal opportunities. There's also stunning art by MFA student Saba Qizilbash that traverses contentious geopolitical environments. But the bulk of this year's articles draw on environment in the green sense, touching in different ways on Earth's beautiful, fragile and endangered environment.

Emilia Miller writes about natural cycles in environmental change, and why current increases in global temperatures present a climate crisis. Grace Wheeler looks at the effects of rising temperatures on the spread of diseases like malaria and dengue. Anna Gilchrist reveals how research by Exeter alumna Louise Biddle shows that Antarctic meltwater has profound consequences for carbon dioxide levels in our oceans and our atmosphere. Freya Butler considers ways of cutting plastic waste through chemical recycling of nylon. Rosa Chalfen shines a light on the life of Exeter alumnus William Morris, renowned artist and radical socialist, and also a pioneering environmentalist.

In College news, Finance and Estates Bursar Nick Badman reports on the projects that Exeter is supporting that help communities in Bulgaria, Kenya and Rwanda while reducing greenhouse gas emissions. We also hear from Peter Nitsche-Whitfield, Exeter's (and Oxford's) first college staff member whose role is entirely dedicated to sustainability.

Among the articles by alumni, Rabbi Jeffrey Newman describes why he felt compelled to take action and joined Extinction Rebellion – and his arrest that followed. Lebby Eyres shares an entirely different perspective on our environment, after rowing across the Atlantic.

I'm grateful for all the contributions and hope you enjoy reading them as much as I did.


**Matt Baldwin**,
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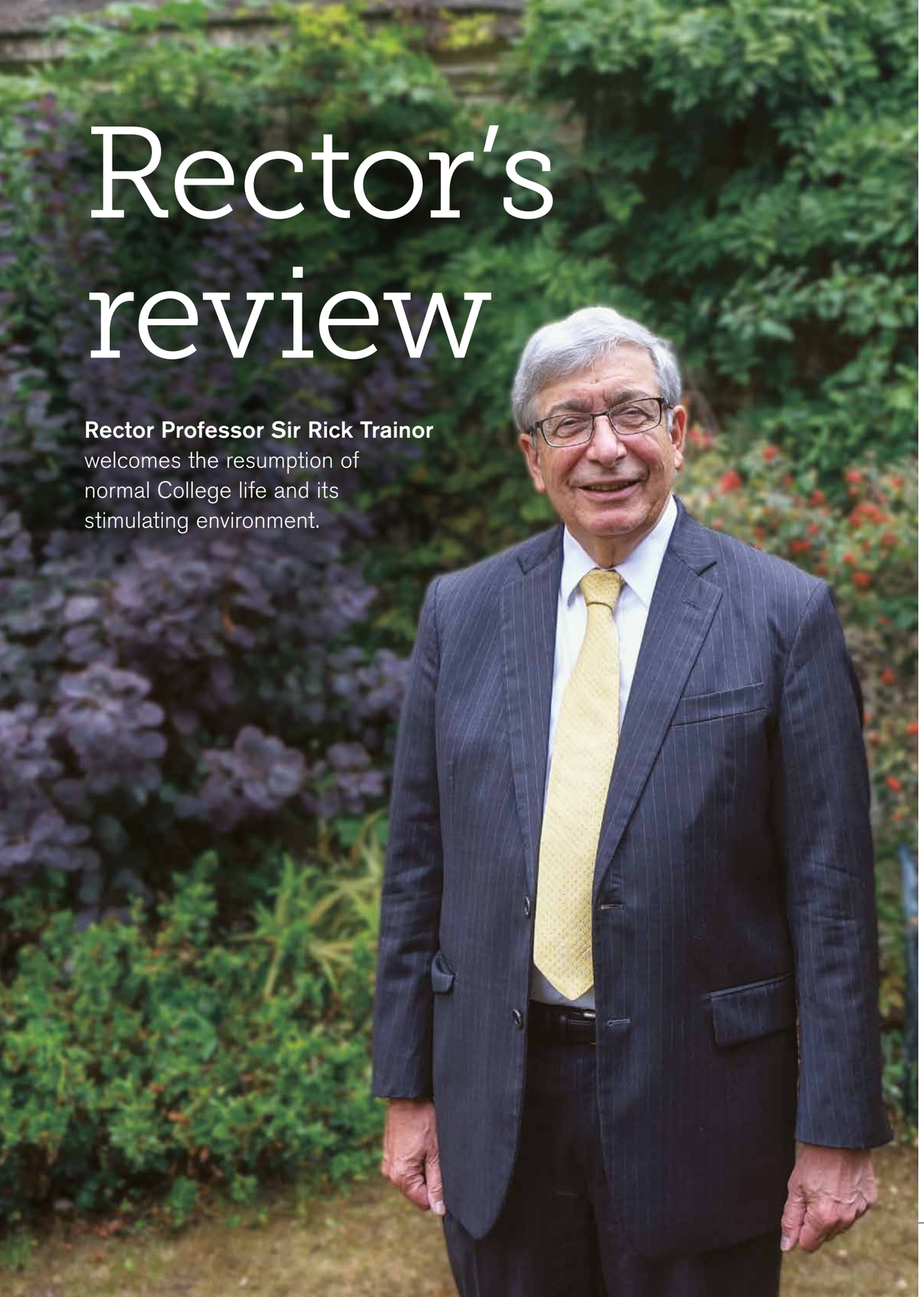
*Cover: Lebby Eyres (1990, Literae Humaniores) rows the Atlantic*

# Rector's review

**Rector Professor Sir Rick Trainor** welcomes the resumption of normal College life and its stimulating environment.



As Matt Baldwin notes in his Editorial for this edition of *Exon*, 'environment' has both a broader and a narrower (though still profound) meaning. The word, the dictionary reminds us, encompasses 'surrounding external conditions influencing development or growth of people, animals or plants: living or working conditions'. In terms both of the general situation in which the College operates and of the specific importance to Exeter of 'green' issues, environment provides an apt theme for the College's activities during the academic year 2021/22 and thus an appropriate focus for *Exon* 2022.

Covid-19 remained part of Exeter's environment during those twelve months. Various precautionary measures remained, and significant numbers of members of the Exeter community contracted the disease. However, the general easing of the pandemic allowed academic, social and extracurricular activities at the College largely to resume 'normal' forms. In-person tutorials flourished, 'bops' and the annual Ball returned, the Turl Street Arts Festival occurred in Hilary Term, the student-run ExVac charity resumed their holidays for disadvantaged local children, subject family dinners once more provided actual food as well as talks, and the College's athletes once again competed on playing fields and the river (to considerable effect, as demonstrated in this edition of *Exon*).

Indeed 2021/22 at Exeter was, in a very real sense, 'hypernormal': pent-up desires for face-to-face contact produced larger than normal attendance at College events – and the invention of new ones. For instance, most 'formal Halls' were crowded, by postgraduates and undergraduates alike. Conference business rebounded, and the Exeter College Summer Programme, after two years without physical attendees, had record numbers. There were more graduation ceremonies than usual as the pandemic backlog was cleared. Making up for lost time, during Hilary Term there were two parents' dinners rather than the usual one. In addition to resuming the usual seasonal observances, Exeter marked for the first time the Muslim festival of Eid and the Sikh festival of Vaisakhi. Moreover, the Middle Common Room successfully lobbied for an extra formal Hall – in black tie, no less – at the end of June, allowing Exeter's substantial graduating postgraduate population for the first time to mark the end of their time at Exeter (as Schools dinners and leavers' parents' lunches have done for generations of undergraduates). Also, a novel family day in September straddled various categories of affiliation to

*Graduation ceremonies have now resumed*

*Student helpers at the offer holders' day*

*Open Day volunteers*

*The refurbished Porters' Lodge provides a more welcoming, accessible and energy efficient entrance with enhanced security*

Exeter. Last but not least, the arrival of new Fellows in the spring, summer and early autumn reinforced the College's intellectual environment.

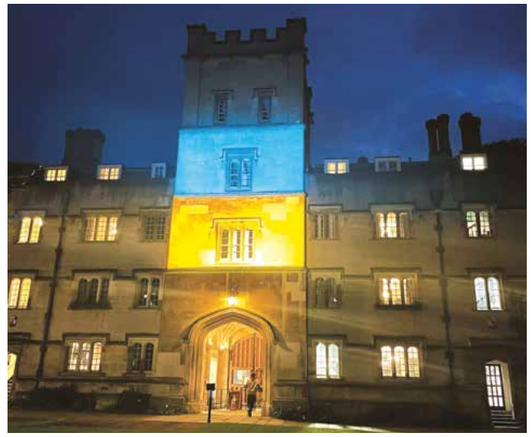
An important aspect of the College's changing social environment, Exeter's access and outreach efforts, also exhibited both resumption and innovation. The offer holders' day and the September Open Day returned to physical formats. In terms of novelty, the College deployed a second schools liaison officer, twinned with an Oxford primary school, and committed to participate in the University's new philanthropically funded Foundation Year programme. In the latter, students of high academic promise but middling predicted A-level grades, who come from backgrounds under-represented at Oxford, will experience a demanding preliminary year. Those who succeed will be admitted to an Oxford degree programme.

Alumni are key members of the Exeter community and thus of the College's environment. Alumni activities flourished during 2021/22. Gaudies resumed – in September, March, June and July – for the first time since Covid-19 struck. So did trips by the College to visit alumni. Marguerite and I accompanied Development Director Yvonne Rainey on tours of eastern and western North America in March/April and September respectively. Andrew Hope (1987, Physics) and his wife Skye hosted at their home, Hopetoun House, a spectacular dinner for Scottish-based alumni in May. There was an enthusiastic alumni response both to the second annual Giving Day in October and to the March Telethon. The Boat Club Association Dinner in May attracted a record number of alumni, and large numbers of Exonians flocked to the event the following month which marked the retirement of Jeri Johnson from her tutorial fellowship in English after 31 years in post.

2021/22 was also an important year for Exeter's physical environment. A major refurbishment of the Lodge culminated in the opening of the sympathetically refreshed premises in April. Cohen Quad secured further honours, garnering four prizes, one each from the Architecture MasterPrize awards and the RIBA South competition and two (for project of the year, and inspiring learning spaces) from the annual UK Education Estates contest. Many of the College's portraits underwent sympathetic conservation through a summer school led by Georgie Dennis (1988, Modern History). Last but not least, the restoration and renovation of the College Library began (as indicated by Matt Baldwin's 'Gothic Revival' article in this magazine), accompanied by an ongoing appeal for donations to this crucial project.

'Green' causes, a crucial aspect of the environment, also attracted increasing attention at Exeter, as many articles in this edition of *Exon* demonstrate. Philanthropically funded carbon offsetting initiatives flourished for a second year, and a sustainability coordinator (shared with Lincoln and Corpus Christi Colleges) started work. This appointment has added extra momentum both to the practical innovations of recent years and the current broader planning of how a college with extensive historic premises can advance toward carbon neutrality.

Exeter's 'green' initiatives – intensely supported by students, alumni and other members of the Exeter community – received added impetus from the Russian invasion of Ukraine. This dreadful event sparked a vigil for peace in the Chapel, donations to humanitarian charities by the student common rooms and the College, and Exeter's alumni-supported participation in the Oxford-wide initiative to host Ukrainian postgraduate students. The protracted war in Ukraine, of course, has also produced a Europe-wide energy crisis. The latter's effects on the College have mightily strengthened Exeter's enthusiasm for energy conservation.



*Exeter's main tower lit in solidarity with Ukraine*

In terms of what might be called Exeter's civic environment, the last month of the academic year brought both the death of Queen Elizabeth II – an event which produced much sorrow at Exeter as elsewhere – and the onset of a UK-centred financial crisis. The latter will reinforce the strong desire of the College to make its environment more efficient and green – but no less vibrant and sociable – during the reign of King Charles III.

*Conservation students restored portraits over the summer*

# Taking positive action on our environmental impact

For the second year running Exeter College offset carbon emissions by supporting environmental projects that aim to battle a global crisis while providing benefits for their local communities. Finance and Estates Bursar **Nick Badman** reports.

**What global projects did the College's carbon offsetting initiative support?**

With the generous support of a donor, we once again offset the College's annual carbon emissions. But where, you may ask, did our offsets go, how did they help reduce global emissions and were there any other benefits?

This year, the College's offsets supported projects:

- For safe community water management in Rwanda;
- To provide more efficient cookstoves in Rwanda and Kenya; and
- To capture methane at a waste treatment plant in Bulgaria.

*Kubratovo wastewater treatment plant*

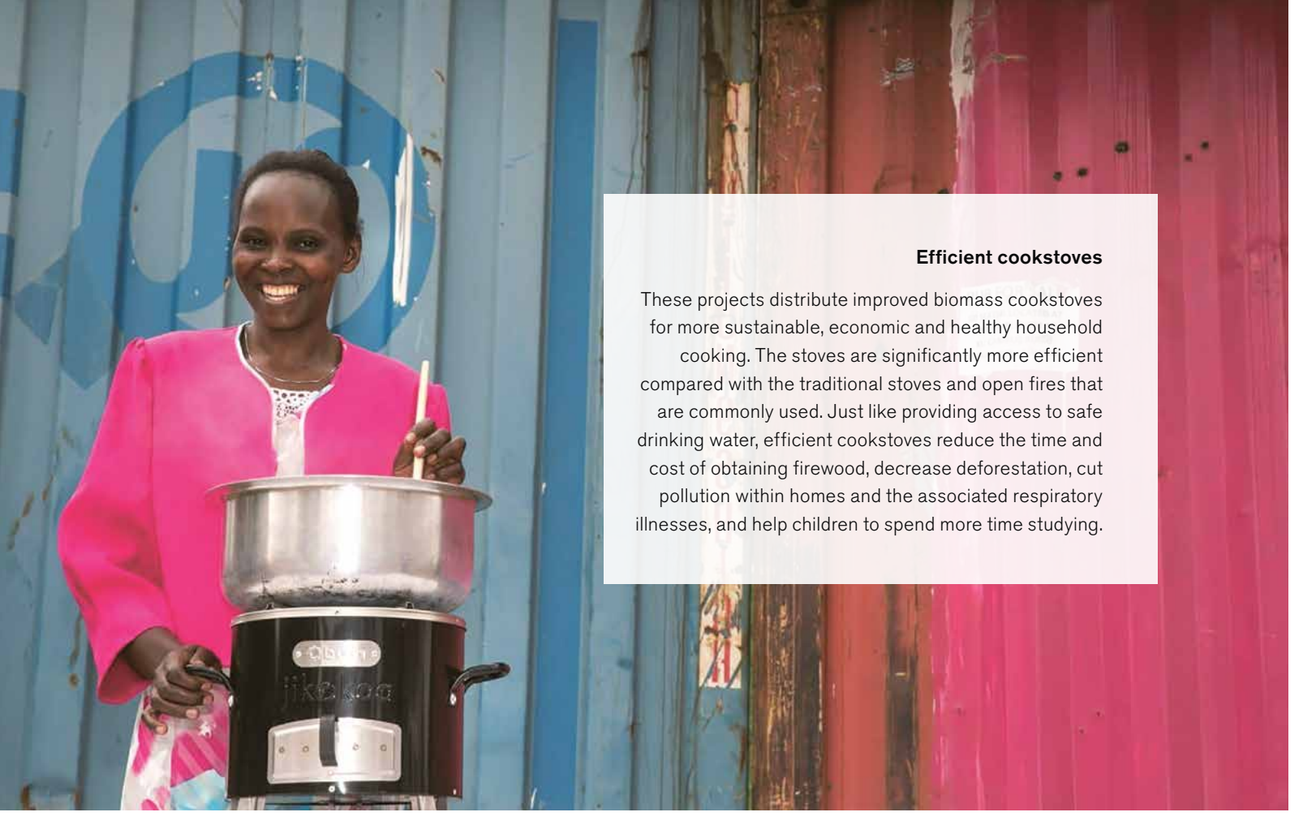
**Safe community water**

The quality of water in Rwanda is often not safe to drink. For clean water, families must either boil it over inefficient wood-fuelled fires or travel long distances. The burden of sourcing safe water, sometimes taking hours each day, or of suffering respiratory illnesses from inhaling smoke from the indoor fires, significantly impacts women and children in particular.

Boreholes offer an excellent solution. However, communities are often unable to maintain them over the long term. The project restores and repairs existing boreholes to provide clean drinking water to Rwandan communities, removing the need to boil water for purification.

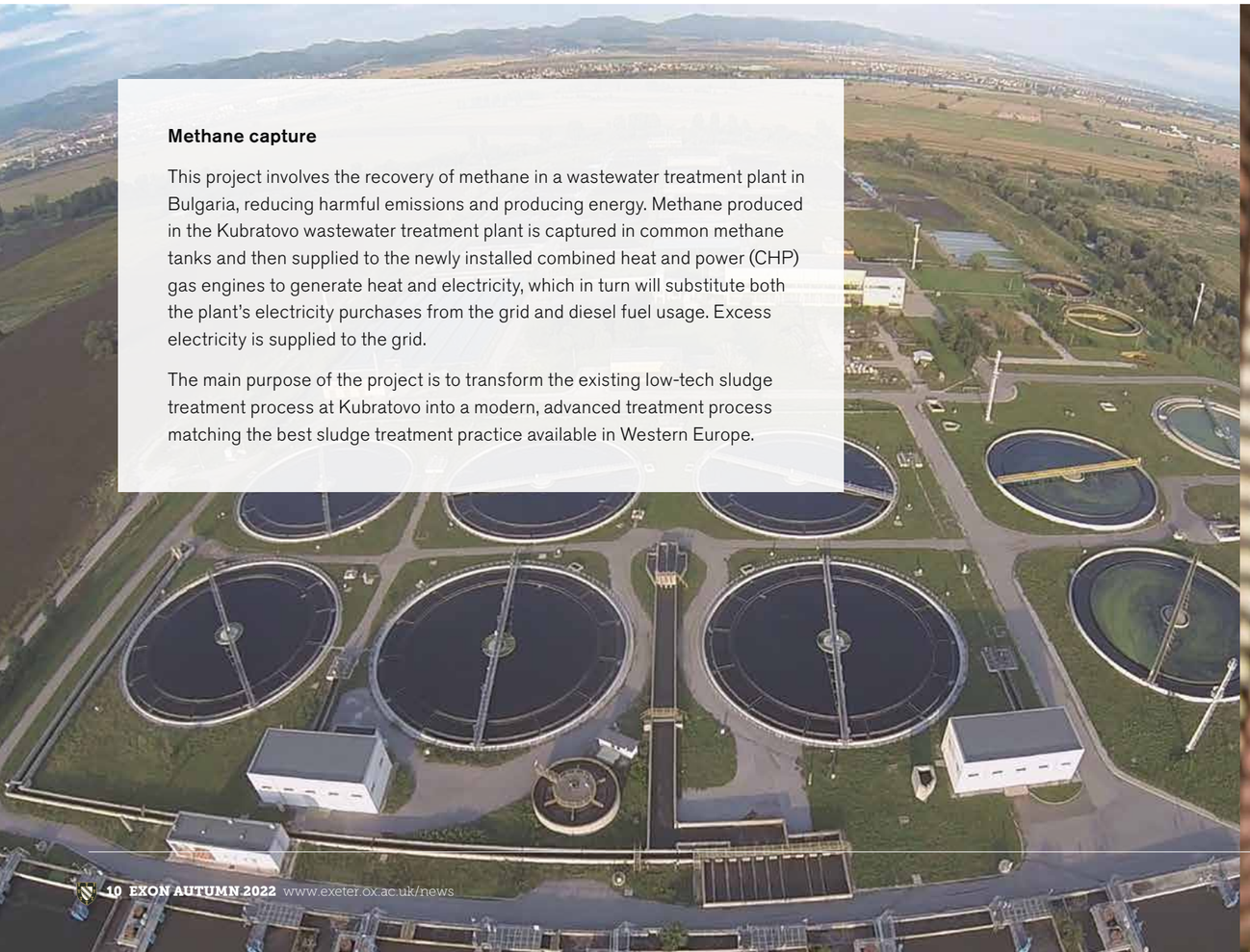
By providing safe water to communities, children do not have to spend as much time fetching water or firewood, so they can dedicate time to studying. Families' resources are freed up as they don't have to spend money or time on firewood. Waterborne and respiratory diseases are reduced thanks to better sanitary and living conditions.

By removing the need to boil water, the project significantly reduces greenhouse gas emissions as well as deforestation pressures on surrounding forests where firewood is sourced.



**Efficient cookstoves**

These projects distribute improved biomass cookstoves for more sustainable, economic and healthy household cooking. The stoves are significantly more efficient compared with the traditional stoves and open fires that are commonly used. Just like providing access to safe drinking water, efficient cookstoves reduce the time and cost of obtaining firewood, decrease deforestation, cut pollution within homes and the associated respiratory illnesses, and help children to spend more time studying.



**Methane capture**

This project involves the recovery of methane in a wastewater treatment plant in Bulgaria, reducing harmful emissions and producing energy. Methane produced in the Kubratovo wastewater treatment plant is captured in common methane tanks and then supplied to the newly installed combined heat and power (CHP) gas engines to generate heat and electricity, which in turn will substitute both the plant's electricity purchases from the grid and diesel fuel usage. Excess electricity is supplied to the grid.

The main purpose of the project is to transform the existing low-tech sludge treatment process at Kubratovo into a modern, advanced treatment process matching the best sludge treatment practice available in Western Europe.



**Calculating emissions**

Like last year, we calculated our Scope 1 and 2 emissions from the College's use of energy and we calculated the carbon footprint of our food and drink (Scope 3). This year, in addition, we calculated the carbon emissions from mains water plus domestic and international student travel to and from College, significantly expanding the Scope 3 emissions we offset. In total, we offset the equivalent of 1,830 tonnes of carbon dioxide emissions, roughly the same as the carbon absorbed by a forest of 80,000 trees every year.

- 735 tonnes of $CO_2e$ from the use of gas
- 22 tonnes of $CO_2e$ from mains water consumption
- 174 tonnes of $CO_2e$ from UK students travelling to and from College
- 872 tonnes of $CO_2e$ from international student travel
- 100 tonnes of $CO_2e$ from food and drink

Our calculations reflect a reduction of 74 tonnes of $CO_2e$ from the atmosphere by responsible management of College-owned woodland and grassland and avoiding a further 366 tonnes of $CO_2e$ from electricity as the College uses a 100% renewable energy tariff.


*A cookstove maker in Kenya*

**A greener future**

We are taking steps to reduce our Scope 1 and 2 emissions, such as improving thermal insulation across our premises and investing in energy-efficient lighting and equipment, as well as exploring ways of reducing further or ending altogether Exeter's use of fossil fuels. Our ability to understand, monitor and measure – and therefore implement ways to cut – the College's emissions, especially Scope 3, is improving.

In this context, we have recently recruited a Sustainability Coordinator who will focus on making the College greener and more sustainable. We are one of the first Oxford colleges to create such a role, sharing the new Sustainability Coordinator, Peter Nitsche-Whitfield, with Lincoln and Corpus. The three historic colleges have a considerable amount in common, which allows us to reduce cost and share best practice. Peter started on 1 September, so do look out for him around College. You can read about the experience he brings to the role and his initial impressions of the challenges ahead on page 12.

# Exeter appoints its first green guru

Exeter College is among the first Oxford colleges to create a position solely dedicated to sustainability. Meet **Peter Nitsche-Whitfield**, Exeter's first Sustainability Coordinator.

On 1 September I started my new role as Sustainability Coordinator at Exeter College, Lincoln College and Corpus Christi College. This is the first time that any Oxford college has created a post solely dedicated to sustainability. By creating a shared role between these three colleges, it will be possible to capitalise on learnings from each of the three historic institutions (founded in the 14th, 15th and 16th centuries, respectively), institutions which share many challenges and opportunities.

I am returning to Oxford after having completed my undergraduate degree in Philosophy, Politics and Economics at St Benet's Hall in 2019. After leaving Oxford, I worked for GermanZero, an NGO which campaigns for Germany to become climate-neutral by 2035. During my time working for GermanZero as Research and Policy Advisor I co-authored a climate action plan with academics and leading climate scientists, giving me an insight into the policies needed to implement an ecological transition in all sectors from transport to energy. Following this, I went on to do a master's in economics with a focus on sustainable development and the ecological transition in Vienna, Paris and Brussels.

I am now looking forward to helping guide Exeter College along its journey towards sustainability. I believe it is vital to address sustainability holistically by tackling all the dimensions of our ecological crises from the climate emergency, biodiversity collapse, land and resource use, to waste and pollution. Reducing the ecological impacts of Exeter's operations will thus be my main field of work. This will mean addressing Exeter's energy use and building stock, travel patterns, food procurement and waste as well as land use and biodiversity. In this, I aim to strengthen the links between town and gown on issues of sustainability and support the global role that Exeter plays for the sustainability transition through its research on sustainability and education of future decision-makers.

Since I have only just started, I am still collecting data and working on understanding Exeter's operations in order to develop key priorities for action. Nonetheless, I have already identified a key priority in reducing energy use to bring down emissions and reduce the College's expenditure. This will allow Exeter to play its part in tackling both the climate and energy crises at the same time. To find out more about my work in the months to come, keep an eye out for more sustainability updates on the Exeter website and other College publications.



# Gothic Revival

The modernisation of Exeter's Library will bring accessibility, energy efficiencies, and a third more reader spaces while restoring and enhancing its beautiful woodwork and stonework, writes **Matt Baldwin**, Head of Communications.

The restoration of Exeter's Library will be truly transformational, while preserving the character and appearance that are so greatly cherished.

The heart of Exeter's academic life is its neo-Gothic Library. Beautiful though the Victorian building is, it is also unfit for purpose. Study habits have changed since it was opened in 1857, and today it could no longer be described as suitable for 20th century students, let alone a 21st century learning environment. Lighting, heating, wiring, ventilation and insulation all desperately need to be modernised. Accessibility, too, needs to be completely rethought, in line with Exeter College's mission to be a first-rate learning environment for all – where the only barrier to entry is intellectual ability, not physical mobility.

Happily, Exeter's plans to make the Library a suitably modern study space will not be detrimental to its appearance, as the computer renders on this and the previous page show. In fact, the work will enhance it, restoring elements of Sir George Gilbert Scott's original vision, revealing the full height of the stunning Gothic windows and the exceptional woodwork in the Library's ceilings, repairing or replacing stonework that has become eroded or been painted over and bookcases that have sagged and bowed with age. The restoration of Exeter's Library will be truly transformational, while preserving the character and appearance that are so greatly cherished.

The result will be a library that attracts new students and scholars and supports them through their academic careers. A library that marries history with modernity, that nurtures great minds and glowing futures, and forms a heart to the College of which we can all feel justifiably proud.

Work is already under way and the Library is encased in scaffolding. Over the next year step-free access will be created between the Library's eastern edge and the Bodleian, in a space that was a garden store. A lift and a fully accessible toilet will also be added. A heating system that is compatible with ground source heat pumps, motion-detecting LED lighting, automated ventilation and modern insulation will significantly improve the building's environmental performance. We will also take the opportunity to utilise space better, creating 30 per cent more reader spaces, to upgrade seating, and to install display cases for some of the College's rare texts and objects of interest.

Exeter College has pledged £3 million towards the project's costs and alumni and friends have generously contributed £7 million. That means £1.3 million is still needed and there are naming opportunities, from bookplates to bookcases and more, which we would be delighted to discuss. You can make a gift at www.exetercollegelibrary.co.uk or call Deputy Director of Development, Adale Bennett, on +44 (0)1865 287163 to explore ways you can help transform the Library for future generations of Exonians.

£1.3 million is still needed and there are naming opportunities, from bookplates to bookcases and more.

# Unearthing stories and opening doors

Celebrated for her role as Lady Danbury in the hit series Bridgerton, and for directing the first major production of Richard II with a company entirely made up of women of colour, actor Adjoa Andoh spoke to Exeter College Fellow in English, Professor Nandini Das, about the personal and career experiences that have driven her to ensure that everybody is 'seen, heard and in the conversation'. **Dominic Madera** (2021, English) was in the audience.

'I never have the desire to distress, I want [people] to see themselves', the renowned actor Adjoa Andoh told a packed audience at Exeter College's Cohen Quad in June.

In a wide-ranging conversation with English Fellow, Professor Nandini Das, the celebrated actor who played Brenda Mazibuko in Clint Eastwood's *Invictus* (2009) and who plays Lady Danbury in the ongoing hit-series *Bridgerton* told us about her life growing up in Leeds, Bristol, and the Cotswolds; her experience directing *Richard II* at the Globe Theatre with a cast made up entirely of women of colour (pictured above); and her conviction to unearth the silenced Black and British stories of the past while opening doors for others.

The conversation took us back to Andoh's experience growing up in rural and working-class communities in Britain in the 1960s. In part that 'growing up' entailed learning how to navigate people's perceived differences and advocating for oneself. Andoh felt one thing fundamentally: 'any time you run across that feeling "it's not fair", that is usually a sound instinct.'

From reckoning with unfairness in childhood, we moved to Andoh's time at Shakespeare's Globe Theatre in London, directing *Richard II*. For much of their performance history, leading roles in Shakespeare's history plays in particular have been confined to white, and often male actors, but Andoh's casting choices rewrote that received script with women of colour at its centre. Especially moving were her reflections on the history of Black women in the London theatre community, which described a sense of the collective even when two people were up for the same job. It is this kind of ethos that made its way into her production of *Richard II.* As Andoh explained, it was a production that tried always to centre people as community members first and provide spaces for understanding and compassion. This ethos of mutuality informed the entire production, which encouraged actors to bring their own experience and history into the acting space. Andoh described how this was acknowledged even in the props, which provided an implicit reminder of places that Britain had colonised, and their own histories – India, Africa, and the Caribbean.

So far, as the writer of this article, I have mostly left myself out of the exposition. But I can say, as an audience member who comes from several groups minoritised in elite spaces, the talk modelled ways for me to make my voice heard while also opening doors for others. Das and Andoh demonstrated what it means for us to navigate these spaces and make them our own while remaining generous with the resources and privileges we gain while attending them. I think often about studying literature and what it means to study and become expert in a language that colonised my own. But even that word – 'own' – presumes that this language, and this history, does not belong to all of us. Andoh's insistence that we 'hold these stories all the same time' is a reminder of the world's complexity, of the narratives that can so easily be afterthoughts and then erased from our consciousness. Her talk serves as a pertinent reminder that we come to these spaces with a whole life and story beyond it, and taking up space is also a responsibility – to listen, to keep those spaces open, and to bring others along with us.

As Andoh put it, 'for the rest of my life, that's all I want to do with the work I do, is [to] say "everybody come in."'

For this audience member, she certainly held out that message of openness and hope.

*To watch Adjoa Andoh's conversation with Professor Das visit:*
**www.exeter.ox.ac.uk/andoh**

*Adjoa Andoh speaking to a packed audience in Cohen Quad's FitzHugh Auditorium*

# Encouraging a diverse student body helps to create a richer learning environment for everyone

By **Ellie Lee**, Access and Outreach Lead.

*Ellie Lee, pictured above*

We have now completed a full year since the easing of lockdown restrictions in the UK. During the lockdowns we still continued our Access and Outreach programmes for Exeter College, adapting just like everyone else and moving everything online.

It was important for Exeter College to have continued this work despite the challenges; we believe that students who have the academic potential should have the opportunity to study here no matter their background.

Now that we have had a full year back in person, what has become even more apparent is the importance of bringing young people to Exeter College so they can see for themselves what it is like, and hopefully imagine studying here one day. This is especially significant for students from backgrounds that are underrepresented in the student population, many of whom will have been told that they won't fit in at Oxford or that they won't meet people similar to them.

We have recently completed the first year of our Exeter Plus programme for Year 12 students. The programme was set up to support young people from disadvantaged backgrounds in applying to Oxford. This combined both in-person visits to Exeter College alongside virtual sessions. We covered all travel costs to College and hosted the visits outside of school time to reduce the challenges that many of these young people face when trying to visit Oxford. Many of the group had never visited Oxford before and some were not even sure whether they would apply to Oxford because they didn't think it was a place for them.

I imagine it is a lot more challenging motivating yourself to go through the rigorous Oxford application process when you can't even visualise the goal that you are striving toward, but once students have visited, this goal becomes a lot more tangible. They have put themselves in the environment of Exeter College, met current students and even sat and had lunch in the dining hall like students do here every day.

We have an amazing cohort of Student Ambassadors (both undergraduate and postgraduate) who have been key to a lot of the access and outreach work that we have achieved recently. Common questions that they get asked are about making friends in College and what their social life is like. The Ambassadors respond with a whole range of anecdotes showing that you will find your people when you come to study at Oxford, both people who have had similar experiences to you and also vastly different. The Ambassadors make it clear that Exeter College really is one of the friendliest colleges in Oxford.

Part of what makes Exeter College so friendly is the diverse range of people who study and work here. Going beyond just the student body there are many members of staff dedicated to encouraging students from diverse backgrounds to apply to Exeter and then supporting them when they arrive. This is why programmes such as Exeter Plus are so important. Many of the students who took part have now changed their mind and are planning to apply to study here.

There is still more work to be done to improve Exeter College's environment and show even more that it is a place for all students, but I know that with the dedication of staff and students we will be able to achieve this.



# CELEBRATING 40 YEARS OF 'Best Days Ever'

ExVac Vice President **Carla Handford** (2020, Medicine) explains how the student-run charity is bringing fun and laughter to the lives of children experiencing difficult times.

ExVac is an entirely student-run charity, which organises two holidays in the New Forest every year for disadvantaged children aged 7-12 from the Oxfordshire area. These children have challenging home lives, and are often referred to us through social services, so these holidays provide them with a much-deserved break and leave them with many positive memories. Every child deserves to have fun, and to see the children smiling, laughing, making new friends and growing more confident (and cheeky!) throughout the week is something really special to be part of. It is so important to recognise that not everyone has the same opportunities in life, and ExVac helps those who need it the most.

We strive to make the holiday a safe space, where everyone feels comfortable to be themselves and show their true personalities, and it is amazing to see how quickly the children trust the leaders and talk about their lives, and how important it is for them to be able to do this. We get to see what wonderful and interesting, as well as incredibly strong, individuals they all are. To hear them say things like 'this was the best day ever' is something we cherish. For many children, this may be their first holiday, or time away from home, and often the activities we do, such as the canoeing, pottery painting, adventure courses and going to a theme park, are new experiences for them. Whilst running the week can be quite challenging and emotionally demanding, more importantly it is such a rewarding experience, from which you learn endless amounts and get so much enjoyment.

The ExVac committee is involved in all aspects of the organisation of the holiday, from booking accommodation, activities and travel, to selecting children to go on the trip, contacting families and ensuring the week runs as smoothly as possible. We also carry out fundraising activities both in and outside of College, and keep alumni and other supporters of the charity informed about its activities.

We want ExVac to be run and supported by a range of people with different experiences and backgrounds, who can contribute a variety of ideas to the running and development of the charity, and also ensure that the children going on the trip have leaders they feel truly comfortable being around and can at times relate to. If you are a student and want to get involved as a volunteer or an alumnus keen to support our charitable work please visit our website, **www.exvac.web.ox.ac.uk**.

This year is ExVac's 40th anniversary, which is really exciting! It is a time to appreciate all the people who have been involved in ExVac in the past and will continue to be involved in the future. I am so grateful to have been part of such an incredible charity during my time at university, and cannot recommend getting involved enough!

# The Art of the Possible

**Saba Qizilbash** (2021, Master of Fine Art) explores difficult landscapes through her art, imagining open topographies in search of new futures. Her award-winning work, shared on these pages, visualises a future of peace, positive change and reconnection – inspired by the erasure of historic roots and communities caused by the partition of South Asia 75 years ago.

*To view more art by Saba Qizilbash visit www.sabaqizilbash.com or @sabaqizilbash*

## INDUSTAN

*Graphite and sumanighashi on paper, 49" x 69".*

This is a visualisation of the Indus River basin in which I have traced the river from its mouth to its source walking, metaphorically, through Pakistan, India, and Tibet. In the forefront is an abandoned skull of a boat in the Arabian Sea, where the river drains.

## WATER BARRIERS

*Graphite and wash on paper, 15" x 60".*

In 2014 Indian Kashmir faced flooding of biblical nature. The clouds burst and River Jhelum overflowed for days, drowning the city of Srinagar under 10 to 14 feet of water. We watched the restless city of the valley constantly struggling for independence drown and gurgle, momentarily submerging the line of control.

## SIR CREEK

*Graphite and wash on watercolour board, 15" x 60".*

Sir Creek is a disputed tidal estuary that divides Sindh, Pakistan, with Gujrat, India. When the water level rises, the floating barriers that divide the estuary vanish, causing fishermen to trespass into hostile waters. Abandoned boats can be seen on both sides of the shore while the fishermen languish for years in prison without trial. I drew both sides of the divide, compressing the distances to draw attention to the absurdity of the situation.

# For the challenge, for the glory, for the friends!

**Henry Hampson** (2019, Physics), Exeter College Boat Club President, explains why freezing hands, abstemious evenings and falling asleep in the Library are all worthwhile, following an exceptional year on the river.

Exeter College Boat Club began this year with very few experienced rowers and little idea how to run a boat club, but with the enthusiasm of our new coaches (Rachel Cannon and Louis Nares), rowers and committee it has been one of the biggest years of expansion the Club has ever had. Now, after two years in semi-hibernation, it's back to business as usual with training, early mornings, crew dates, post-erg pub trips, Boat Club dinners, barbecues, pre-term training camps and, most importantly, successes on the river.

Michaelmas Term saw huge interest from new rowers, leading the Club to start the year off strongly with good performances at Christ Church Regatta. However, with most of the Club having taken their first strokes at the start of the term, there was still a long way to go. A marked improvement came after our pre-Hilary Term training camp, based at Abingdon Rowing Club, where our provisional top four boats made huge progress in what was an intense training week, massively helped by the presence, encouragement, and instruction of alumni. During Hilary Term we stepped up training intensity with up to four early mornings a week for the first boats, on top of their regular training.

It all paid off at Torpids, with all three Exeter boats (M1, M2 and W1) achieving a clean sweep of bumps after day three. Day four of Torpids was Exeter's day to prove themselves. It was the Club at its very best. First, the mighty M2 came through to get a surprise bump on a stricken Wolfson M3, obtaining merely the first set of blades of the day. The M1 and W1 celebrated with them as the pressure grew. The W1 stormed out from the start to gain a quick bump, going up six places through the course of the week and gaining their first set of blades since 2011. Now, to make it three out of three it was down to the M1, chasing St Hugh's. Having closed them down to a canvas in the Gut (a key bend in the river), the M1 was held off down the course, just missing out on blades. Nevertheless, the week of exceptional achievement was celebrated with Cèilidh dancing after a merry dinner.

Trinity Term came with nice weather and renewed drive to build on the success of Torpids. The Club entered five boats for Summer Eights with excellent campaigns from the M1 and W1 boats, both moving up two places and ending the week unbeaten.

Rowing with ECBC has undoubtedly been the best thing I have been involved in while at Oxford. We may ask ourselves, and I often have, why we get up before the sun rises to trudge down Turl Street with freezing hands, only to get on the water in the dark and often have what can only be called a frustrating outing. Why we may forego a fun night out for an erg test or early morning the next day. Why we are falling asleep in the Library. It's worth it for the challenge, for the moment that the boat comes together perfectly on a Trinity Term evening, for the bump on the last day of Summer Eights in front of huge crowds on the banks, not least Rick and Marguerite, the Club's biggest supporters. It's worth it for the friends. The Boat Club has become a close-knit community of Exonians from all year groups and stages of study. This community is undoubtedly the reason for the ECBC success this year, it keeps people coming back, day in and day out, to train hard with a boat of people they have become so close to. Now, with such a strong community of rowers in the rising second year, many taking on leadership roles next year, and with such impressive momentum and involvement, the next few years at ECBC look very bright.

Special thanks go to our senior member, Nicholas Badman (Finance and Estates Bursar), for his constant help and support.

Floreat Exon!

# GOING FOR GOAL

It has been a busy year with triumphs both on and off the pitch for Exeter College Association Football Club, as Men's Captain **Guy Nuhushtan** (2019, Engineering) and Women's Captain **Hannah Morris** (2019, English) report.

The annual Old Boys fixture saw a return of over 20 recent alumni, who faced a selection of current ECAFC players from all the squads. After a deadlock of 1-1 after extra time and a whopping six yellow cards, the Old Boys defeated the Young, 5-3 on penalties, with old-Exonian Sean Gleeson saving two from the spot and Giles Dibden tucking home the winning penalty. The football alumni dinner followed, with a record attendance of over 80 people, including current club members, recent graduates and a mixture of men and women dating back to the 1970s squads! Guest speaker Mark Labbett (currently known as 'The Beast' on ITV quiz show *The Chase*), an Exeter alumnus who was keeper for ECAFC Thirds back in the '80s, ended off a successful night for ECAFC.

The Men's First Team's opening game of the season, in JCR Division 1, was against St John's and proved to the rest of the league what Exeter were all about. Thanks to a late Crispin Straker corner, Exeter showed resilience to recover from two goals down to win 3-2 in the last minute. Out of seven league games in Michaelmas, the Firsts managed to win five, taking them top of the league with a whopping +13 goal difference, the highest in the league. In the meantime, the Seconds also showed their dominance, with three wins out of four games in the Reserves Division 2.

*The Firsts managed to maintain their strong form... winning all but one game to be crowned as champions of the Division.*

Unfortunately for both the Firsts and Seconds, the Cuppers runs were not as successful, with early-round exits against Jesus (our age-old rivals) for both. This meant the Firsts went straight through to the Hassan's Shield, where a 6-2 thrashing of Oriel ended Michaelmas on a high.

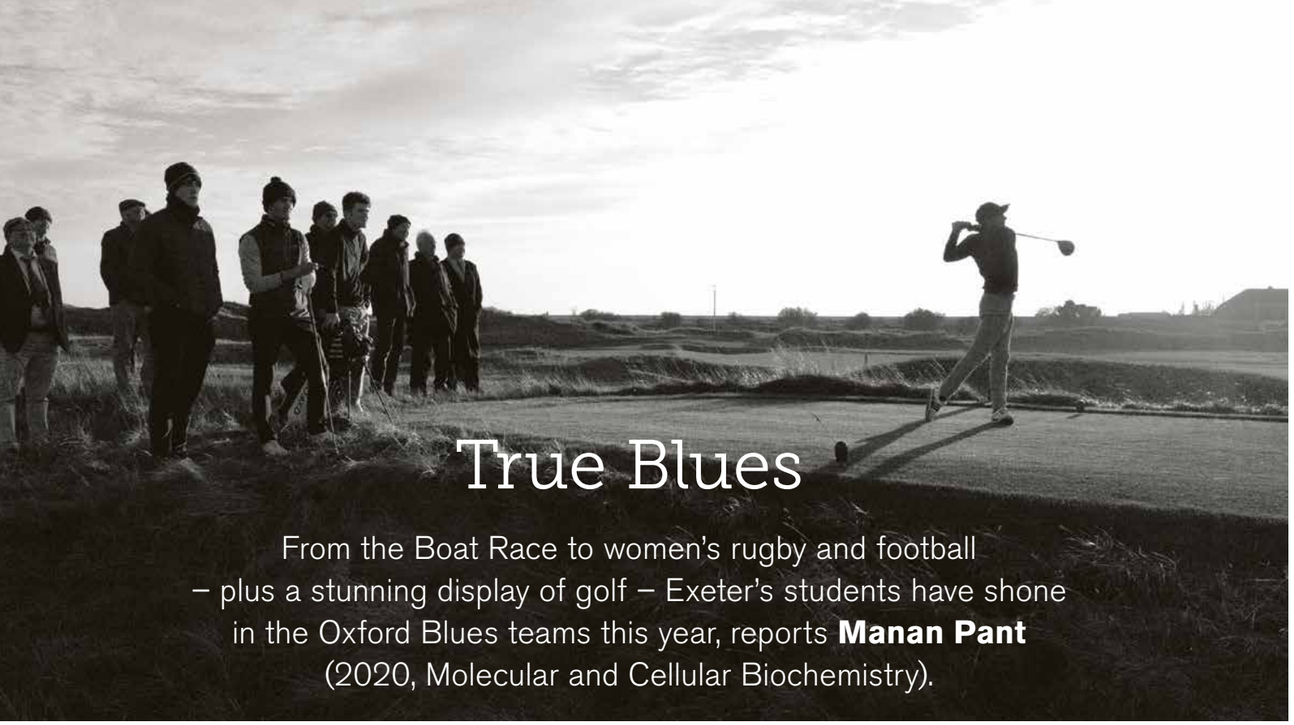
The Firsts managed to maintain their strong form going into Hilary Term, winning all but one game in the remaining five league matches to be crowned as champions of the Division, gaining promotion to the highest tier of college football, the Premier Division. The Seconds, too, kept up their good form, however New and St Anne's managed to creep ahead of them, keeping the Seconds in tier two of Reserves football going into next season.

The remaining matches played were the Firsts' Hassan's Shield fixtures, where victories against Magdalen and Christ Church took ECAFC to the final of an Oxford football cup competition for the first time in eight years. LMH took an early two-goal lead in the final, ending the half with the Firsts 3-1 down. A long shot from team captain Dan Gallagher and a bullet header from Sam Ritblat brought the Firsts back to 3-3 going into the last 20 minutes. To everyone's horror (everyone from south of University Parks, at least), a last-minute header from LMH brought the season to an end with a harsh and unfortunate 4-3 loss.

*Having women allowed at the football alumni dinner for the first time ever was incredible.*

As for the women's teams of ECAFC, 2021-2022 proved to be a very enjoyable season. One major success was getting girls of all levels on the pitch, improving and having fun no matter their starting ability. This season was of particular note for achievements off the pitch too – having women allowed at the football alumni dinner for the first time ever was incredible, not to mention the efforts put into a year spent fighting for equal budgets and facilities. Moreover, the decision to unite our team with the women's football team at Somerville allowed both teams to develop even further. With these increased numbers, we could have proper training sessions while also meeting new people. Well done girls!

Overall, a very successful season for all the Exeter football teams – well done to everyone involved!



# True Blues

From the Boat Race to women's rugby and football – plus a stunning display of golf – Exeter's students have shone in the Oxford Blues teams this year, reports **Manan Pant** (2020, Molecular and Cellular Biochemistry).

For many of us, the peak of our sporting glory at university is achieved at College level – whether that be scoring the winning goal of a Cuppers final against a Turl Street rival or simply taking part in a casual rounders game in University Parks. However, this year several Exeter students surpassed this by representing the University and cementing their places in Blues' history.

Perhaps the most celebrated of the achievements occurred on the River Thames in April. Specifically, along a four-mile stretch between Putney and Mortlake, where Oxford beat Cambridge in the 167th Men's Boat Race. Exeter's Tobias Schröder (2021, MPhil History of Science, Medicine and Technology), in his fourth year in the Blue Boat, stroked the team to their first victory in five years. A stellar performance meant long overdue vindication for Tobias as Oxford posted the third fastest time in history at 16 minutes 42 seconds. His accomplishment to not only row in, but stroke, a team that boasted five Olympians is a testament to his ability, strength and determination. Tobias summed up the achievement saying, 'It has been a long time and a lot of hurt… I can't describe how much winning the Boat Race means to me.'

Just the day before Tobias's success on the Thames, and a few miles west, Exeter students Jessica Abele (2019, DPhil in Physiology, Anatomy, and Genetics) and Megan Isaac (2019, PPE) helped Oxford secure a 10-10 draw in the Women's Rugby Varsity Match at Twickenham Stadium. Jessica, playing in her fourth Varsity Match and her first for the Dark Blues, led the side, becoming the first Exeter student to captain the Women's Varsity. Megan made her own mark on the game when, after phases of relentless Oxford attack, she ran a brilliant support line to score Oxford's first points just before half time. In a match that saw two disallowed Oxford tries and both teams in turns leading on the scoreboard, Jessica reflected on the afternoon saying, 'We definitely go away from here with our heads held high.'

*It has been a long time and a lot of hurt… I can't describe how much winning the Boat Race means to me.*

From rugby to football Exeter make their presence known, with three students representing the Women's Blues football team this year. Alice Nichols (2018, Chemistry), Isabella Wordsworth (2020, Modern Languages), and Amelia Levitt-Smith (2021, Williams) helped the Blues secure victories in their Varsity matches against Cambridge and local rivals Oxford Brookes. In February, all three students played a role in the 5-0 thrashing of Oxford Brookes which spurred Alice and Isabella on in the 137th Blues Varsity a month later. A tight match, in which Cambridge dominated possession, ended 2-2 after regular time, but Oxford held their nerve, winning 4-0 in the penalty shootout. Alice was proud to score her penalty, calling it 'a sensational end to the season as well as [her] Blues career.'

Exeter's prowess extends beyond team sports. Josh Fallows (2020, Earth Sciences) caused a stir in the golfing world by winning the 94th President's Putter Championship. This year the annual event hosted 144 past and present Blues from both Oxford and Cambridge. In his first appearance at the competition, Josh went undefeated through eight rounds, beating the defending champion in the final. This is a staggering achievement for someone who earned their Blue just last year. 'Josh impressed all generations of Society members with his ball-striking, tenacious grit, and calm demeanour', Exeter alumnus and golf Blue Nick Saunders (2020, EMBA) commented. Josh went on to help Oxford win the Varsity Match a few months later.

*Josh impressed all generations of Society members with his ball-striking, tenacious grit, and calm demeanour.*

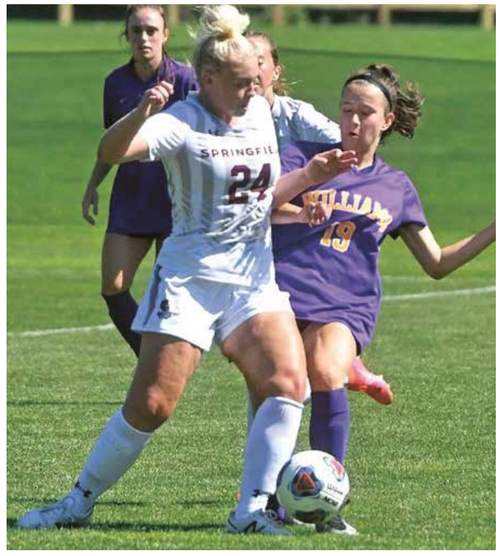

*Images (clockwise from top left): Josh Fallows (2020, Earth Sciences) tees off at Rye Golf Club, the winning crew of the Men's Boat Race, the winning football team of the Women's Varsity Match*

# ‘As I stood there, I wondered, how could I make a difference in this ancient school?’

**Amelia Levitt-Smith** (2021, Williams) went from queuing at the campus bookstore to a ‘freefall’ into academic independence when she swapped her liberal arts college education in the US for the Oxford tutorial system at Exeter.

As I stepped off Turl Street, through the heavy wooden door, and into Exeter College for the first time I was struck by the feeling of permanence and timelessness. Everything around me looked as if it had been standing in that exact spot for hundreds of years. And indeed it had. The Williams College campus is beautiful in that old (for America) New England brick and white church style, surrounded by the Berkshire mountains, but it had never made me stop and stare in reverence the way Exeter did that morning. Standing under the archway next to the Porters’ Lodge, I found it hard to believe that there could be any new thoughts or actions taken in a place that so firmly tethered the twenty-first century to the fourteenth. As I stood there, I wondered, how could I make a difference in this ancient school? What ideas did I have that hadn’t already been thought of here since 1314? I clearly had not foreseen the dynamic, creative, and intelligent student body and tutors I would go on to meet at Exeter College.

At Williams, at the beginning of each semester, a long queue forms in the campus bookstore as students find the books that their professors have preassigned for the classes. No searching for texts is required. A few weeks before the start of Michaelmas Term, before I had left for England, my tutors each emailed me a brief overview of the tutorial, its structure, and my primary and secondary texts. There were so many books and other readings on these syllabi that I initially thought it was perhaps a mistake or the tutor would inevitably narrow down the reading list to an amount that I could feasibly read in eight weeks. Once I stepped into Exeter that first time, however, I realised that this would not be the case. My responsibility each week was to determine which readings informed the subject of the essay. Oxford, housed within its ancient walls, requires individual thought. The academic independence at Exeter was unlike any previous educational experience I have had. The constant search for next week’s books was certainly unlike the single-file line at the bookstore that I was used to standing in once a semester.



I had taken a tutorial at Williams during the first semester of my first year. This was not recommended. Upperclassmen cautioned me that tutorials are hard and probably too intense for a freshman trying to settle into a new world, let alone a new learning environment. I decided to disregard these warnings and take the class anyway. Maybe it was foreshadowing. I read all the assigned books and the pre-prepared course packet on historical interpretations of childhood in Africa, and with an engaging professor I greatly enjoyed the class. Throughout the process of applying to the Williams-Exeter Programme at Oxford, I often thought back to that class and how much I liked the tutorial style of learning. Little did I know, that ‘tutorial’ had not actually prepared me for the tutorials I would go on to face at Oxford.

The unstructured Oxford system that I struggled with at first allowed me, in the end, to grow more as a student than I had thought possible. In my circuitous search for books around the Radcliffe Camera or the Bodleian, or most often the Exeter College Library, I found what I was most interested in and passionate about. What initially felt like a freefall, became an exploration of new ideas, subjects, and eventually the focus of the senior honours history thesis I will write back at Williams this coming year. Finding my way at Exeter, and especially the tutorial style of education, proved to me something people had been telling me my whole life: with struggle comes lessons learned and new paths forward. What began as a feeling of impossibility – too many books, too much to read, not enough time, and what to write – transformed into an ability to get through the reading material and write persuasive essays. The academic lesson I was learning in my tutorials likewise applied to the rest of my experience at Oxford. I pushed through shyness about my accent or unfamiliarity with British customs to make great friends. I took a chance, tried out, and played football with the Blues, and even shoed the Tabs. I explored the United Kingdom, from Scotland to Wales to London to Cornwall. I learned to cook a curry, bake scones, and ride my bicycle on the ‘wrong’ side of the road, with only a couple of crashes.

*The unstructured Oxford system that I struggled with at first allowed me, in the end, to grow more as a student than I had thought possible.*

I highly value the freedom and breadth of the liberal arts education we have the privilege of receiving at Williams, but I also loved the independence and depth of the Oxford system. I recognise how lucky I am to have experienced both academic environments in my undergraduate years. As a student of history, studying at Exeter was an inspiring confluence of new and old. Yes, we walked through storied halls with ancient walls and studied in centuries-old buildings, but physical permanence does not impede the flow of new ideas or global consciousness. Just like at Williams, the students at Exeter govern themselves, debate important issues, apply past knowledge to new pursuits, and strive to make real and positive change in the world. And as young adults privileged to attend such remarkable institutions, I do believe this needs to be our goal.

*Amelia left historic Williams College for ancient Exeter College*

*Emily's mother (left) and father (right) both travelled far from their countries of birth to Denmark, where they have built a happy life together*

# The Danish girl

**Emily Luo** (2019, English) is 'from Denmark' but her parents overcame major struggles in very different parts of the world to get there – stories she was determined to share as a student speaker at TEDxOxford.

When people ask me where I'm from, I wonder whether I should give them the short or the long answer: 'I'm from Denmark' or 'I'm from Denmark, but my mom is from China and my dad is from Iran.' When I was younger, I mostly gave the long answer to prevent people from asking me where I was really from, since I don't look Danish. But now I give the long answer because I'm proud.

My parents each came to Denmark in their twenties and have since built a happy life together. My mom works as a financial consultant, and she's a strong-minded woman who makes the best dumplings, loves to buy new jackets, and always wants to travel somewhere warm. My dad runs a nursing home, and he loves his job. He cries at Disney movies, loves baking the same vegan, sugar-free cake every week, and if you meet him, you'll remember him as kind.

I've gotten so used to our life, so I sometimes forget that my parents had a life before me and before they came to Denmark. But, at the end of last year, I started thinking about their backgrounds more than I ever have before. In November, I began seeing posts for a competition related to the upcoming TEDxOxford conference, as they were looking for a student speaker. With the theme being 'Beyond Frontiers', I immediately thought of my parents and decided to apply. As immigrants, they went beyond frontiers when they left their home countries and came to Denmark in the 1990s. To this day, I still don't know everything about their pasts – and in November I knew even less, but I knew that their stories deserved to be told.


My childhood and early adulthood could not be more different from what my parents have experienced in China and Iran. They each grew up in poverty – my dad during the Iranian Revolution and my mom during the Chinese Cultural Revolution.

When the Iranian Revolution began, my dad was eight years old, and his world completely changed from one day to the next. He was no longer allowed to see his female friends at school, men were forced to grow beards, and music, alcohol, and poetry were suddenly illegal. Growing up, he used to sleep directly on concrete floor with his five siblings every night because they couldn't afford beds. It was only when he came to Denmark at the age of twenty that he finally got a bed of his own. On his way to school, it was normal to see dead bodies hanging in the streets or people being beaten to death in broad daylight. When he was a teenager, he was almost arrested for wearing a denim jacket because it was deemed too 'western'. Already then, he knew that he wanted his kids to have a better life than that, so he went beyond frontiers for me and my brother before we even existed.

Meanwhile, more than six thousand kilometres away, my mom was growing up in China under the Cultural Revolution. She was eight years old when the Chinese leader Mao died. On the day he died, she stood inside a big hall with the rest of her school to 'mourn' him. She had to stand there and cry on command for nine hours straight. Like my dad, my mom also grew up poor. My grandma had walked two hours to work every day instead of taking the bus, just to save the equivalent of a few pence. They'd been so poor that a neighbouring couple had offered to buy my mom in exchange for nothing more than a bike.

In preparing for my TEDx talk, I sat down to talk to my parents, so they could help fill in the gaps of what I already knew about their lives. One of the biggest life lessons that I've learnt from them (which I'm still trying to remind myself of) is realising how lucky I am: to be able to wear denim and take the bus, and to have a bed to sleep in.

During my three years at Oxford, I would sometimes feel overwhelmed by all the deadlines, difficult essays, and feelings of insecurity. But, on my inevitable walk outside to gain clarity, I would always find myself thinking about my parents and everything they've been through. It sounds like a ridiculous comparison, but that's the point. Of course, I still have my own struggles and they're still legitimate, but most of my worries seem miniscule in comparison to what my parents have endured. It's not that I'm comparing myself to their hardship to undermine my own, but rather because it's important to put things into perspective.

Knowing about the struggles my parents have overcome has made me appreciate the small things in life which many of us (including myself) often take for granted. That's why I was so determined to share their stories at TEDxOxford. Although I'd never done public speaking before, I never questioned standing alone on a stage in front of almost 800 people. I wanted to share their stories to help others realise just how lucky they are too. My dad, especially, has suffered unimaginable hardship – much more than I can do justice in this article, but you can watch my talk on YouTube to better understand why he is the epitome of never giving up. My parents are the strongest people I know. Without their strength, resilience, and hope for a better life, I wouldn't be here today.

To watch Emily's TEDxOxford talk visit **bit.ly/emilyluo**

# How might we cure the ‘Great Stagnation’?


**Mark Bissell** (2021, Williams) introduces a young field of study which seeks to create an environment for innovation and progress which we have perhaps too easily dismissed as the ridiculous musings of science fiction.

*Fantasy or our future? A scene from The Fifth Element, the 1997 English-language French science fiction action film conceived and directed by Luc Besson*

Flying cars, humanoid robot servants, precise control over the weather, luxury resorts on Mars – when we reflect on the future that sci-fi authors from the mid-1900s predicted, we might burst out laughing. It’s ridiculous for those starry-eyed prophesiers to have expected so much!

But what if we flip perspectives? If those sci-fi authors could have taken a peek into 2022, if they saw their hopes for a shining utopia fall way short, they’d be more likely to burst into tears than laughter.

Were their visions too lofty? Or could it be that we’ve let them down?

Their ambitious predictions aren’t so far-fetched when we consider their historical and societal context. The period from 1870-1970 – the ‘Special Century’, as historian Robert Gordon calls it – was an era of unprecedented progress, packed with revolutions across every facet of life. Many of the technologies that were invented, scaled, and widely adopted during this period are now considered basic necessities – automobiles, airplanes, telephones, radio, antibiotics, and homes with running water and electricity, just to name a few.

Most people living in 1870 were undereducated, overworked, and unaware of just how much the standard of living would increase over the next century. It’s no wonder, then, that when 1960s sci-fi authors extrapolated this progress into the future, they assumed their lives would pale in comparison to ours in the 21st century. A rational assumption – and yet, we tend to scoff at their boldest predictions.

We consider ourselves a high-tech society. But are modern innovations *really* as transformative as those from the Special Century? Digital technologies have improved entertainment, communication, and access to information, but we’ve stagnated in other key areas. Transportation hasn’t fundamentally changed since 1970. Humans first visited the moon in 1969, and we haven’t been back in nearly 50 years. We’ve made important advancements in healthcare, but they can’t touch the nearly 30 years of life expectancy that were added during the Special Century.

What explains this ‘Great Stagnation’? Humans are just as industrious and creative as we used to be, so something about our *environment* must have changed. There must be some *systemic* factor causing progress to stall, even as global education levels rise and R&D funding across various industries soars to new highs.

One hypothesis, supported by the economist Benjamin Jones, proposes that we’ve picked all the low-hanging fruits of progress. The frontier of knowledge in every academic field is as far out as it has ever been, and since each generation of humans is born with a complete lack of knowledge, the passage of time makes innovation harder. Aspiring innovators must spend increasing amounts of time and effort getting to the frontier before they can push it further.

Others believe the Knowledge Frontier hypothesis can’t fully explain our stagnation. They argue that other factors are restraining progress. But those on both sides of the debate agree on one thing: we ought to be investing more resources into studying these open questions. And that’s precisely what a new field of study – championed by a range of leaders across business, government, and academia – seeks to do.

Progress studies is a multidisciplinary subject that asks: how can we cultivate environments that are optimised for the advancement of our standard of living? The young field employs lessons from a variety of subjects including history, economics, politics, and organisational studies. Progress studies distinguishes itself from these related areas by being *prescriptive*, not *descriptive*. It doesn’t aim to merely explain the world, it aims to offer tangible strategies for improving it. It is an applied science, more akin to medicine than to biology or anatomy.

*Humans first visited the moon in 1969, and we haven’t been back in nearly 50 years.*

Proponents of progress studies broadly agree that we must improve both our culture and our institutions.

Culturally, we must adopt an attitude of optimistic agency. *Optimistic* means rejecting nihilistic and faulty claims that progress is impossible or undesirable. *Agency* means recognising that progress is something we can, and must, endeavour to create.

Institutionally, we ought to study, experiment with, and reform the systems that are crucial for driving progress. We can start with education (how can we more effectively produce tomorrow’s innovators?), regulation (how can we reduce red tape that hampers experimentation, without compromising safety?), and funding (how can we ensure capital flows to the most promising projects?). Progress studies tells us we shouldn’t be opinionated about which particular reforms to make, but we should remain dedicated to rigorous experimentation and analysis as we work to discover the strategies that are most politically, socially, and technologically optimal.

Progress is possible if we are thoughtful about how we design our societies. Building an environment that’s conducive to innovation and inimical to stagnation involves cultural and institutional shifts. Doing so won’t be easy, but it is necessary if we hope to build a world more like the one those hopeful sci-fi authors once envisioned.

# Is Europe at risk of malaria and dengue?

Rising temperatures, mild winters and increased flooding are making Europe an increasingly welcoming habitat for disease-transmitting mosquitos, warns **Grace Wheeler** (2019, Medicine).

Climate determines the spatial and temporal range of mosquitos, vectors for life-threating diseases which affect 700 million people worldwide, killing more than a million people a year. These diseases include malaria, the fourth leading cause of childhood death globally, and dengue, a viral infection endemic in over 120 countries which can result in severe illness and death. Will climate change put Europe, a continent largely free of mosquito-borne endemics, at risk?

Mosquitos thrive in warm, humid regions that receive high rainfall, hence the equator being home to the greatest number of mosquito species. However, climate change is altering the habitats of mosquitos, enabling them to move further from the equator. Rising temperatures in Europe, a factor mosquitos are particularly sensitive to because they are cold-blooded, are making it an increasingly viable habitat; the warmer winters, such as 2019 when the UK experienced the hottest winter day on record (21.2C in London), are lessening the protection previously afforded by the distinctive winter seasons, during which temperatures usually fall low enough to prevent prolonged mosquito survival. Additionally, increased flooding throughout Europe, including the UK, as a consequence of higher temperatures, and the subsequent use of salt marshes to protect coastlines, are creating attractive habitats for mosquitos. Resultantly, models predict that if greenhouse gas emissions continue to rise unabated, 49% of the world's population in 2050 will live in places where *Aedes albopictus* and *Aedes aegypti* will be established – this 49% includes large swathes of Europe.

*Aedes albopictus* and *Aedes aegypti* are the two species most responsible for transmitting Plasmodium (the cause of malaria) and dengue. Whilst it is easy to think 2050 is far in the future (albeit only 28 years away), in 2020 the European Centre for disease Prevention and Control reported 18 domestic cases of dengue compared to only three cases in 2010, proving this mosquito migration has already begun.

In addition to expanding the habitats of mosquitos, thus increasing disease spread, rising temperatures cause greater rates of pathogen replication and maturation and lengthen the mosquito season, all of which increase the likelihood of infection. This is demonstrated in a multi-modal framework model by Colon-Gonzalez, which estimated the malaria and dengue season will increase by 1.6 and 4.0 months, respectively, including in the Eastern Mediterranean.

*'Malaria and dengue predicted to affect billions more people if global warming continues uncurbed'.*

*London School of Hygiene & Tropical Medicine*

Ultimately, it is clear that climate change is happening, evidenced strikingly by the summer 2022 European heatwave, during which temperatures exceeded 40C in the UK for the first time on record. Whilst efforts should be made to stop and reverse this trend, we need to accept that mosquitos will continue to migrate into Europe and subsequently result in increased numbers of malaria and dengue cases. This calls for enhanced surveillance of endemic and non-native vectors, increased awareness of mosquito-borne diseases within the medical profession, such that cases can be more easily identified, and a greater amount of funding dedicated towards these diseases. The latter is particularly important given the absence of approved dengue antivirals and relatively ineffective vaccines for both diseases. Although these diseases might not pose immediate risk to Europe, the Covid-19 pandemic demonstrated how diseases that do not initially affect the western world can have a global impact.

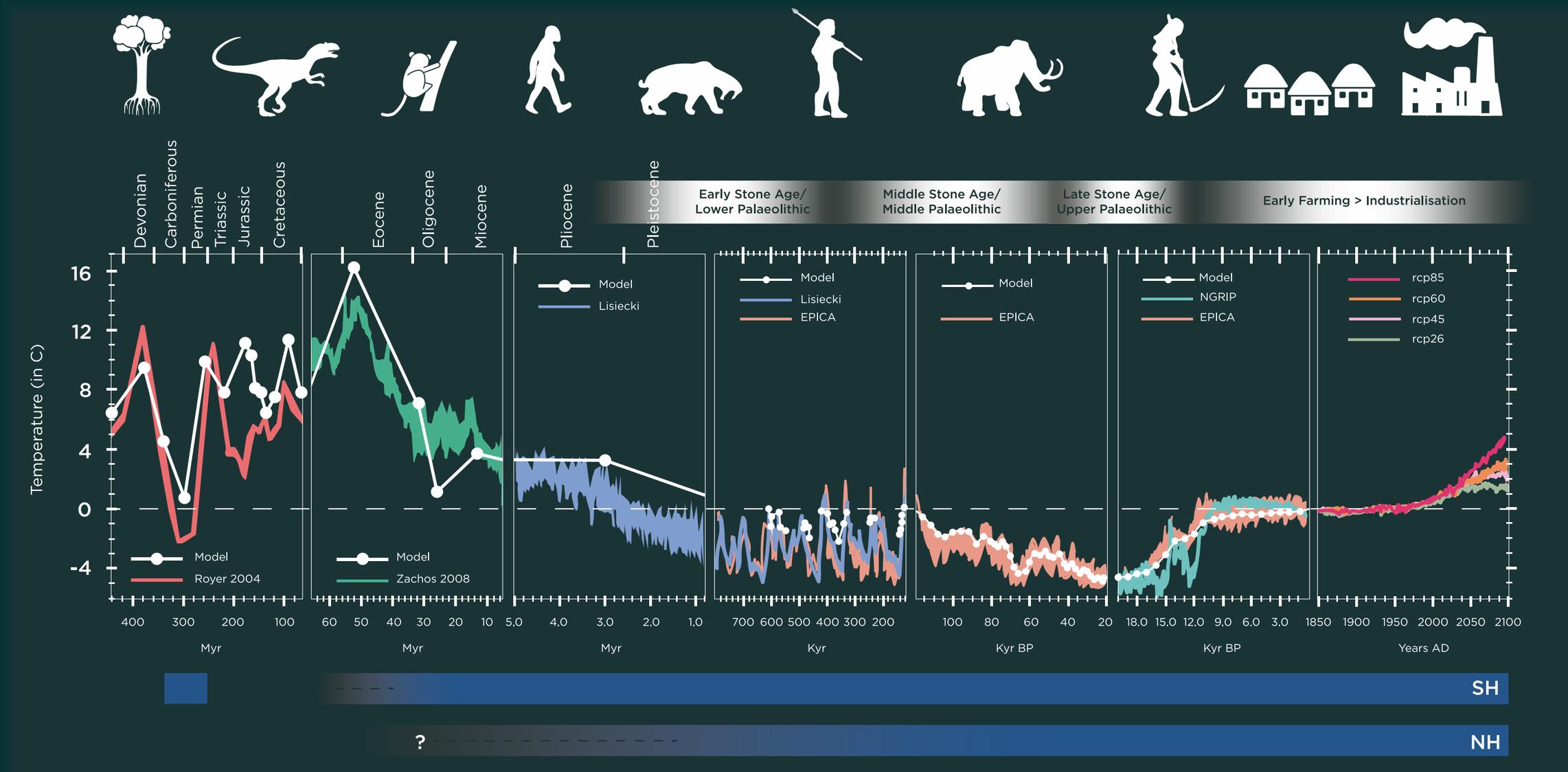
*Increased flooding throughout Europe, including the UK, as a consequence of higher temperatures, and the subsequent use of salt marshes to protect coastlines, are creating attractive habitats for mosquitos.*

*Flooding in the UK is predicted to increase as greenhouse gas emissions and average global temperatures soar*

# Environment: This time it's different

If the climate has changed so drastically over Earth's history, why is present climate change worrying? Earth Sciences student **Emilia Miller** (2020) examines the data.

*Figure 1: Variation in global mean annual temperatures over the last 400 million years. Horizontal blue lines represent ice sheets present in the Southern (SH) and Northern (NH) hemispheres. Note the change in scale going from millions of years (Myr) to thousands (Kyr) to single years*




The fact that the climate is changing is entirely undeniable.

The global warming seen over the course of human history, particularly since the onset of the industrial revolution in the mid-eighteenth century, is not the first time that the Earth's climate has changed. It is within our collective narrative that at some point our distant ancestors fought mammoths and woolly rhinos, braving the tremendous cold of an ice age, which culminated 20,000 years ago. Many, too, know that before this, in the era known as the Mesozoic, dinosaurs roamed the Earth in a predominantly tropical climate. And that prior to visible life on Earth, the planet underwent several phases of icehouse and greenhouse worlds. Here ice covered the majority of the Earth's surface, followed abruptly by pleasant warmth in events known as the 'snowball Earth'. What, then, drove climate in the time before human emissions? Are these forces still at play? Which stage of the cycle are we currently in, and how do our recent industrial activities impact these cycles?

Since the formation of Earth's climate as we know it around four billion years ago, with an atmosphere and operating plate tectonics, the general trend has been of stable warm periods, punctuated by briefer, more dramatic glacial events. These are the worlds of greenhouse vs icehouse. Within each of these worlds there are perturbations in temperature, atmospheric $CO_2$ concentrations, and ocean chemistry. Geologists break up these greenhouse and icehouse worlds into glacial and interglacial phases. And even smaller phases of cold and warm temperatures, stadials and interstadials. We do live on a dynamic planet.

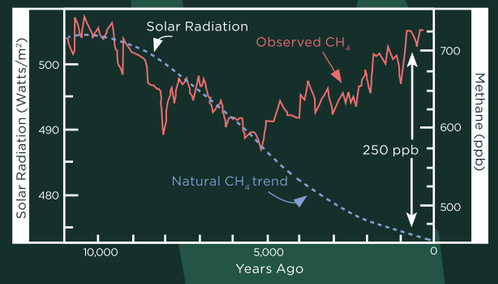
We presently find ourselves in an interglacial period within an icehouse world that has spanned 33 million years. This world is characterised by ice sheets on both hemispheres. Interglacial periods have typically been

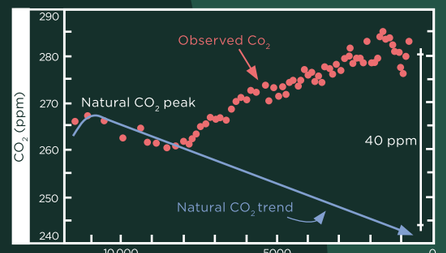
relatively brief, lasting around 4,000 years. However, the last period, the Holocene, was a period of lasting warmth for over 11,000 years (Zalasiewicz & Williams, 2012). This sustained warmth allowed humans to establish civilisations that relied on a stable climate, allowing agriculture and permanent settlements.

Why was the Holocene a period of such extended warmth? For many years, scientists thought that the current period of stability was due to a balance between Earth's climate changing mechanisms. This balance is made up of three main factors: orbital geometry, known as the Milankovitch cycles, the movement of plate tectonics, and irregular, discrete events like volcanic eruptions. Milankovitch cycles affect how much, and where, sunlight hits the Earth's surface, by small shifts in the Earth's tilt, the wobble of the Earth about its axis and the eccentricity of its orbit (i.e. whether Earth's orbit around the Sun is more circular or oval). Plate tectonics change how much of the land surface is exposed to weathering, a process which draws down $CO_2$ and sequesters it in carbonate rocks. When the factors are balanced, the climate remains broadly stable. When one factor becomes dominant, the climate shifts.

Interestingly, geological research shows that the amount of sunlight reaching the Earth during summer periods has been steadily decreasing for the last 11,000 years. If the Earth is to follow previous trends since the Holocene (and why shouldn't it?) then after a peak 11,000 years ago, concentrations of greenhouse gases should have shown steady decrease, along with global temperatures, sending us into the next stage of the oscillation – another glacial phase.

This hasn't happened, as we can see, with recent summer highs of 40 degrees in Britain. William Ruddiman, American palaeoclimatologist, proposed a reason why: our early ancestors were already modifying the climate 8,000 years ago. He called this period the 'early Anthropocene'. The beginning of settled agriculture, when Homo Sapiens first started clearing forests to make space for crops, reduced the amount of $CO_2$ sequestered by photosynthesis. Three thousand years later, fields were purposely flooded for the first time in order to aid the growth of rice. Creating artificial wetlands in this way releases additional methane ($CH_4$) into the atmosphere. Though methane remains in the atmosphere for a relatively short time, its effect as a greenhouse gas is 20 times as strong as $CO_2$ (Ruddiman, 2007). Even with such comparatively small endeavours, our ancestors instigated changes in trace gas concentrations that went against natural cooling trends. $CO_2$ levels increased from 260 to 280 ppmv (parts per million volume) and $CH_4$ increased from 600 to 750 ppbv (parts per billion volume). This was sufficient to increase global temperatures by up to 0.8 degrees and preserve a warm phase in which humans could rely on sufficient crops to feed a growing population.



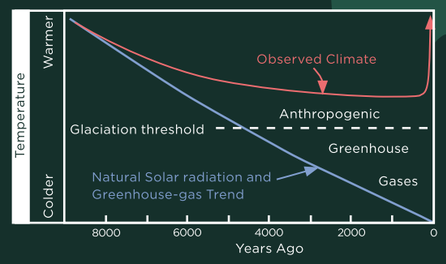




*Figure 2: natural trends in solar radiation (governed by orbital geometry), $CO_2$ and temperature vs actual, Anthropogenic data*

*Svante Arrhenius, a Nobel Prize-winning Swedish physicist... was the first to make predictions of human-made global warming, concluding that the burning of ancient carbon stores in the form of coal would be a positive thing for future generations.*



Surely this warming is a good thing then? Svante Arrhenius (1859-1927), a Nobel Prize-winning Swedish physicist, certainly thought so. He was the first to make predictions of human-made global warming, concluding that the burning of ancient carbon stores in the form of coal would be a positive thing for future generations who would prosper under better (warmer) conditions (Zalasiewicz & Williams, 2012).

So why isn't climate changing for the better? Why are we now in the face of a 'climate crisis'?

It boils down to the rate of change. Arrhenius couldn't have predicted the rate at which human population would increase, for it has more than tripled since he was practising science. The demands on our planet in order to sustain a population of 7.9 billion people are simply too great, our population growth too fast. The increase in 20ppmv across this 'early Anthropocene' (between the beginnings of agriculture and pre-industrial revolution) is incomparable to the present day increase released by fossil fuels and land use change, with current atmospheric $CO_2$ concentrations of a shocking 414.7ppmv (Global Monitoring Laboratory - Carbon Cycle Greenhouse Gases, 2022).

Furthermore, Earth processes are providing a feedback which is amplifying anthropogenic trends. As ice disappears from a warming surface, the Earth's albedo, which reflects light and heat back into space, decreases. A warming planet also means warmer oceans. This warming lessens the healthy ocean currents that formed at the start of the icehouse world, reducing interchange between surface and bottom waters, and preventing nutrient resupply to organisms living at the surface. Warmer oceans also cannot sequester as much $CO_2$, which is more soluble in cold water, meaning that less $CO_2$ released into the atmosphere can be stored away.

To make matters worse, ecological damage and biodiversity loss disturb nature's balance. The Amazon rainforest is a tipping element in Earth's climate system. Changing positions of climate belts, such as the intertropical convergence zone (ITCZ) which normally brought rain to North-east Brazil, coupled with steadily increasing temperatures worldwide, result in drought. This causes forest fires and $CO_2$ stored in trees to be released back into the atmosphere. Furthermore, forest degradation means less moisture is held by the forest, decreasing rainfall across South America. The more forest loss the Amazon experiences, the lower its resilience becomes (Boulton, Lenton, & Boers, 2022). This feedback is mimicked by ecosystems across the globe. We have disturbed nature's balance.

Our activities on this planet are swiftly moving our world out of the stable phase in which we have flourished, towards a greenhouse world that we are not ready to be in.

*The demands on our planet in order to sustain a population of 7.9 billion people are simply too great, our population growth too fast.*

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# Searching for a major cause of toothbrush decay

If you've ever brushed your teeth, you've used nylon. But like other popular plastics, this polluting polymer is particularly challenging for the environment to digest. **Freya Butler** (2019, Chemistry) has been chewing over the issues in her recent research.

In December, I was fortunate enough to receive a place on the Excellence Research Internship Program at the École Polytechnique Fédérale de Lausanne (EPFL) in Switzerland, to carry out a three-month research project during the summer vacation 2022. I joined the Laboratory of Organometallic and Medicinal Chemistry (LCOM), led by Professor Paul Dyson, where I was assigned a project based on the chemical recycling of plastic waste, with a particular focus on nylon. As a chemistry student, the prospect of applying my knowledge to such an important area of science was very exciting!

The most commonly used plastics are synthetic and are derived from fossil fuels. In particular, nylons are some of the most important plastics produced commercially. If you've ever slept in a tent or used a toothbrush, you've used nylon fibres!

The term 'plastic' is very general – there are many different kinds such as PET or nylon. However, all plastics are essentially polymers. Polymers are larger molecules formed by joining smaller units called 'monomers' into chains using covalent bonds (bonds formed by the sharing of electrons between atoms).

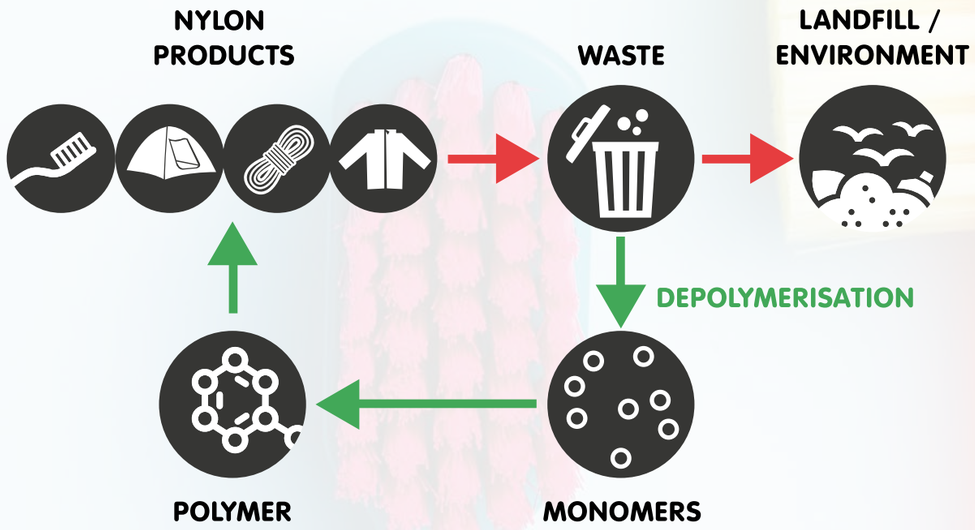
Plastics are long-lived because they are composed of strong covalent bonds, which are typically not accessible for decomposition in the environment. Hence, these materials persist in the environment for many hundreds of years. The growth of global plastic production and the mismanagement of plastic waste is the cause of serious environmental and biological issues such as ocean pollution. Thus, development of effective plastic recycling technologies with low energy input is of paramount importance.

The statistics on the recycling of plastic waste are very concerning – only nine per cent of all plastic produced by humanity has been recycled and only 14 per cent of plastic waste is currently being collected for recycling (UNEP, 2019). Plastic recycling today is primarily 'mechanical', meaning the waste is sorted into single streams, cleaned and then mechanically and thermally processed into pellets for re-use. However, the properties of the recycled polymer are compromised, leading to a lower value material which will likely end up in landfills or the environment anyway. So, current recycling approaches cannot enable a circular plastics economy.

However, opportunities exist in chemical recycling. Chemical recycling breaks up (or 'depolymerises') plastics into smaller molecules that can be used to synthesise either the same plastic (with equivalent quality to the starting material) or other materials. This form of recycling enables potential generation of value-added products far beyond the scope of mechanical recycling.

One method in which polymers can be decomposed is via 'hydrogenolysis'. This refers to cleavage of the covalent bonds in the polymer using hydrogen gas (typically under conditions of high pressure and temperature, in the presence of a catalyst). A catalyst increases the rate of a reaction without being consumed by the reaction itself. Addition of a catalyst is essential as it enables the depolymerisation process to happen over several hours instead of hundreds of years! A primary challenge is finding a catalyst that is stable and recoverable under the conditions needed for the depolymerisation process.

## The waste and recycling journey of nylon




Catalysts can be homogenous (the catalyst is in the same phase as the reactants) or heterogenous (the catalyst is in a different phase to the reactants). Homogeneous catalysts, while selective and efficient, are often susceptible to decomposition and are difficult to recover and reuse. This limits their application in industry. On the other hand, heterogeneous catalysts are easier to recover and are generally more tolerant to varying and harsh conditions. In a typical heterogenous system, the catalyst is a solid while the reactants are in the solution or gaseous phase.

Part of the research of LCOM is focused on the search for novel heterogenous catalysts for the hydrogenolysis of nylon, as well as investigating ways in which the reaction conditions can be made less extreme, which is essential if the process is to be viable in industry. So far, catalysts made of nanoparticles of ruthenium adsorbed onto a solid support (such as cerium oxide) have been found to be effective at decomposing nylon when the reactant mixture is heated to 350 degrees Celsius, under 50 bar hydrogen pressure for five hours.

The aim of my research project is to find ways to lower the temperature at which the hydrogenolysis reaction takes place (ideally to below 200 degrees Celsius). One way to achieve this is to find a solvent to dissolve nylon. This is challenging as the strong interactions between the polymer chains mean that nylon is insoluble in most common solvents. However, trifluoroethanol (TFE) dissolves nylon at room temperature and this is the primary solvent I have been experimenting with, along with others such as THF (tetrahydrofuran) and CPME (cyclopentyl methyl ether).

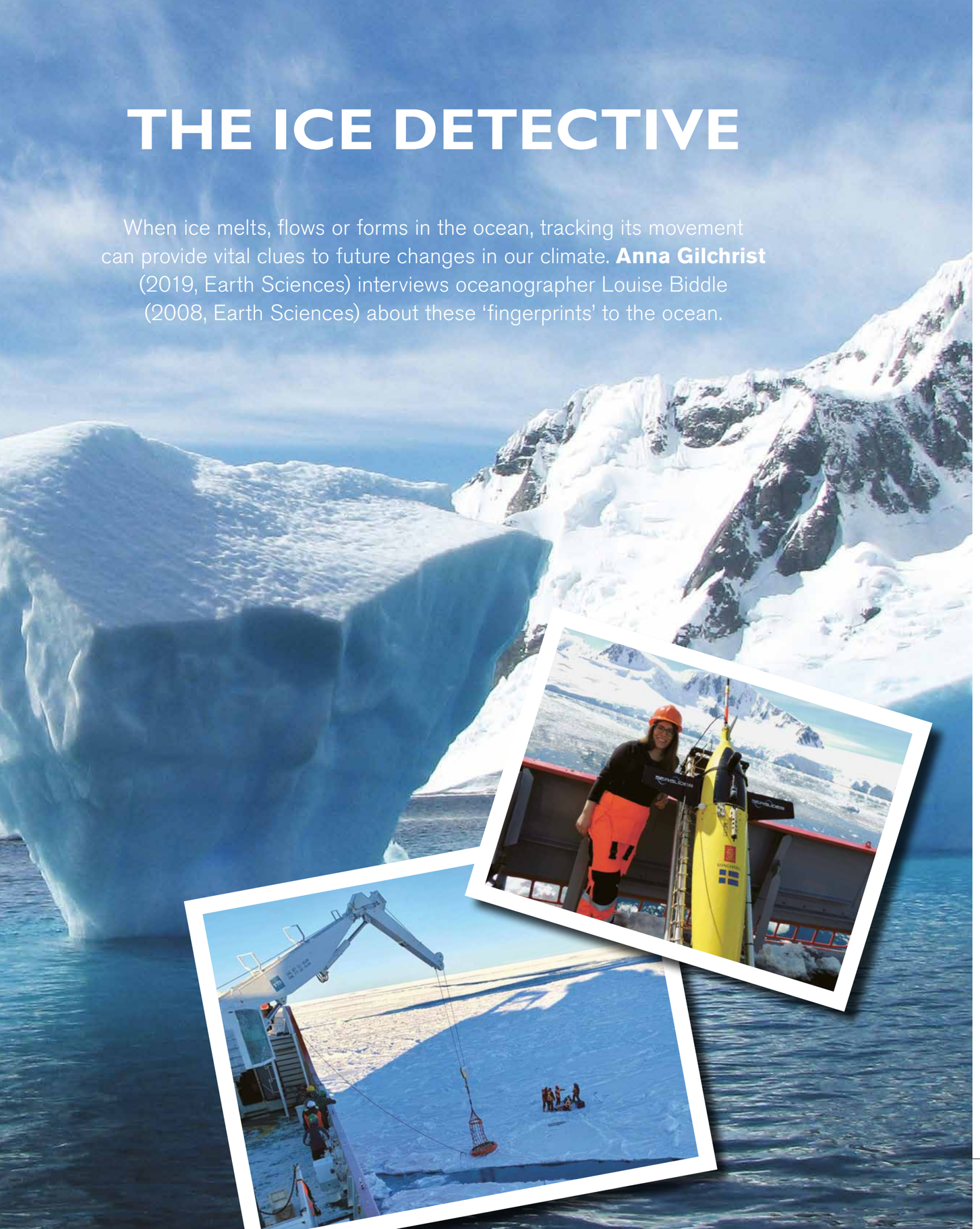
I have also been synthesising other catalysts (beyond those based around cerium oxide) by adapting procedures from the literature and testing their activity in the hydrogenolysis of nylon. For example, I have experimented with porous solids known as 'zeolites', which contain aluminium, silicon and oxygen. Ruthenium nanoparticles can be trapped within the pores of the zeolite instead of simply stuck to the surface, enhancing their catalytic ability.

At the time of writing, I am almost halfway through my project and my experiments have shown mixed results. Under very mild conditions (1 bar $H_2$ and 140 degrees Celsius with a ruthenium-based catalyst), no significant decomposition of nylon is observed. Under harsher conditions, it appears the solvent reacts preferentially to the nylon. In the time I have remaining, I hope to make progress and overcome some of these challenges by searching for more active and selective catalysts as well as solvents (or mixtures of solvents) that will more effectively dissolve nylon.

Overall, I am very grateful to LCOM for giving me the opportunity to gain my first experience of lab-based research. Having the freedom to think creatively and try new things has made the project particularly enjoyable. I am also learning the importance of patience and perseverance, especially at times when the results are not as promising as hoped! I look forward to starting my fourth-year research project in Oxford and will be grateful for the skills and confidence I gained during the summer.

# THE ICE DETECTIVE

When ice melts, flows or forms in the ocean, tracking its movement can provide vital clues to future changes in our climate. **Anna Gilchrist** (2019, Earth Sciences) interviews oceanographer Louise Biddle (2008, Earth Sciences) about these 'fingerprints' to the ocean.



After a summer of extreme heat, global warming has never been more evident. In fact, the ten hottest years on record have all occurred since 2010, with research from the USA's National Oceanic and Atmospheric Administration indicating that 2022 has a higher than 99 per cent chance of joining that group. Yet, understanding fully the consequences of global warming remains complex, with ocean currents and weather systems meaning that rises in temperature in one region can have a profound impact somewhere else altogether. To get a better understanding, I spoke to oceanographer and Exeter College alumna, Dr Louise Biddle (2008, Earth Sciences), pictured left.

Louise first became interested in the relationship between the oceans and our changing climate during an expedition over her first summer break in undergraduate studies to Baffin Island, in the Canadian Arctic, when a conversation with a local man revealed that the biggest change he had observed was seeing tides for the first time. The trip led Louise to focus her studies on oceanography and climate and, for her fourth-year project, she focused on Nares Strait, a channel of water between Greenland and Ellesmere Island, Canada. Working with Helen Johnson, Professor of Ocean and Climate Science in Oxford's Department of Earth Sciences, Louise studied the sea ice arch that forms between the two landmasses. Using satellites and in-situ measurements, the research aimed to identify the relationship between changes in atmospheric and oceanic forces and the formation or destruction of the ice arch. Louise explained that she loved how data could be used to improve our understanding of the relationship between our oceans and climate, and it was this passion that led her to push her research further with a doctorate at the University of East Anglia.

The doctorate took Louise to Antarctica, where she studied the meltwater that comes off ice shelves, tracing where it goes and how it impacts the ocean. Louise explained that one of the reasons the behaviour of meltwater (and how it impacts the ocean) is important to understand is because the ocean is a sink for carbon dioxide ($CO_2$), removing it from the atmosphere. The sea ice that forms in the polar regions results in surface waters, which can collect $CO_2$ from the atmosphere, becoming dense in salt and sinking, storing $CO_2$ at depth. This water movement can be traced by measuring the temperature, salinity and oxygen content of the water. Increases in the amount of freshwater, caused by ice melting, result in less dense surface waters, and so potentially less $CO_2$ is stored deep in the ocean, which in turn exacerbates global warming as $CO_2$ is released into the atmosphere. By tracing where the freshwater travels, it is possible to provide detailed data for climate modelists when forecasting the changing climate. Now at the University of Gothenburg, Louise's research

*By tracing where the freshwater travels, it is possible to provide detailed data for climate modelists when forecasting the changing climate.*

continues to build on this work, focusing on the marginal ice zone in Antarctica: the places where sea ice is forming or melting next to open ocean.

When studying ocean currents in Antarctica, a significant challenge is how to collect data considering you are trying to measure inaccessible areas under the sea ice. Louise described how they attach instruments to seals, which collect data as the seals roam the ocean. The flaw with this approach, she pointed out, is that the locations where measurements are taken are wholly dependent on where the seals choose to go. Louise now uses a fleet of ocean gliders (underwater, self-propelled measuring instruments) to take Conductivity Temperature Depth (CTD) measurements. These measurements act as a 'fingerprint to the ocean movement', as Louise put it. The distinct salt and temperature properties of our seas, from the Mediterranean to the Antarctic bottom waters, allow Louise to determine the proportion of these waters at a given point and so identify where water is travelling around the world's oceans.

Louise ruefully acknowledged that by developing instruments capable of taking measurements in the marginal ice zone, she has reduced the need for her to travel to Antarctica, though of course this is in some ways a considerable advantage. In recent years she has begun to move some of her research closer to her new home in Sweden. As science director of the Voice of the Ocean Foundation, she has deployed gliders in the Baltic Sea, sharing valuable data and helping other scientists to analyse our seas and also to make improvements to the technology used. Ultimately, it will be possible to deploy these technologies globally, furthering our appreciation of the relationship between ocean and atmosphere.

As our understanding of climate change grows, so does the need to acknowledge its complexity, its importance and its impact, which is widespread and can manifest in seemingly unpredictable ways. This is perhaps best captured by Louise's observation, 'There are so many aspects to climate change. To understand your focus within it, and how the world will change in the future, we need to understand how and what is happening now, and why a change to a variable results in an impact somewhere else.'

# William Morris

## Exeter's first eco-warrior?

During his time at Exeter, Morris developed a keen sense of environmental justice that became a key tenet of his decorative arts company and was also evident in his work as a poet, writer and activist, writes **Rosa Chalfen** (2019, English).

When we think of the term 'eco-warrior', we tend to think of modern figures; activists like Greta Thunberg or political leaders like Caroline Lucas. But one of Exeter's most famous 19th century alumni, the printmaker and environmentalist William Morris, was in many ways an 'eco-warrior' of his own period. A pioneer of the Arts and Crafts movement, the fine art movement designed in most part to combat British industrialism, Morris combined his love of the arts and his radical socialism to reassert environmentalism in an era when it was quickly being discarded for industrial advancement.

In fact, much of the environmental beliefs that would dominate Morris's life and work were rooted in his time at Exeter. Born in 1834 to a wealthy middle-class family in Essex, Morris was surrounded by nature from a young age, exploring the wilds of Epping Forest near his childhood home and then the Wiltshire countryside when he attended school at Marlborough. However, it was after entering Exeter in 1852 that his artistic and environmental ideology grew. At the College, he met Edward Burne-Jones, who would become a prominent Pre-Raphaelite artist as well as Morris's lifelong friend and, together with other students, they formed the 'Birmingham Set'.

Morris's environmental beliefs were profoundly affected by his discovery of medieval Romanticism during his time at Exeter, inspired by Oxford's medieval buildings and his love of Arthurian literature. For Morris, works like Thomas Malory's *Le Morte D'Arthur* represented a period of happy coexistence between humans and nature that he felt was missing from his own society. After graduating from Exeter, he moved to London to train as an architect, and carried with him the keen sense of environmental justice that he had developed during his time at College. Appalled by the city's pollution and rapid encroachment into its surrounding countryside, he turned to idyllic rural scenes created by the Pre-Raphaelites, who Morris and Burne-Jones mixed with extensively during their time in London.

Morris's environmentalism was not merely driven by a desire to escape the industrial pollution of London, but was also driven by the ardent socialism that was his overarching philosophy. As well as the destruction of the natural world, he was deeply concerned by the poor working conditions that the industrial revolution had created, and imbued both his artistic and environmental interests with a deep sense of anti-elitism. In 1861, Morris founded his decorative arts company, 'Morris, Marshall, Faulkner & Co.' alongside Burne-Jones and the famous Pre-Raphaelite painter Dante Rossetti. Environmentalism was a key tenet of the company, as evident in their now famous textiles, whose intricate designs draw direct inspiration from the environment. Popular patterns such as 'Strawberry Thief' draw together birds, flowers and fruits in Morris's distinctively colourful and intricate design to highlight the beauty of a natural world which was fast disappearing.

> *...birds, flowers and fruits in Morris's design highlight the beauty of a natural world fast disappearing...*

Morris envisaged craft labours as a way not only of repairing the damage that the industrial revolution had caused, but also of creating better conditions for workers whose individual skills would be valued. The company employed boys from the Industrial Home for Destitute Boys in Euston, many of whom went on to train as apprentices. During the 1870s, the firm's business took off, but Morris became increasingly disillusioned with his design's popularity amongst the upper and middle classes, concerned that it undermined his socialist ideology. This concern only grew as Morris became more directly involved in the socialist movement, particularly in Britain's first socialist party, the Democratic Federation. With other members, Morris supported the 1884 cotton strike in Lancashire and designed the party's manifesto, 'Socialism Made Plain', which demanded improved housing for workers, free compulsory education for all children, free school meals and an eight-hour working day. These are largely rights that modern society takes for granted, but at the height of the industrial revolution they would have seemed radical.

Although today Morris is famous for his textiles, he was known chiefly during his lifetime as a poet and writer, and his literary work envisaged a natural world untouched by the pollution and corruption of the industrial revolution. His fantasy novels, including *The Wood Beyond the World* and *The House of the Wolfings*, inspired authors such as C.S. Lewis and fellow Exeter alumnus J.R.R. Tolkien. Morris was deeply interested in printing books as well as writing them, and towards the end of his life he founded the Kelmscott Press, which sought to reproduce classic works using traditional printing methods. The Press's masterpiece was an edition of the *Works of Geoffrey Chaucer,* a first edition of which is now held in Exeter's special collections.

Morris's environmental activism was ahead of its time, not only in his desire to protect the natural world from pollution and industrial advancement, but also in creating fair and safe environments for workers; his vision of an anti-elitist and truly accessible environmental movement is one that we can all aspire to. Even 170 years after he studied at Exeter, the legacy of his principles of environmentalism and accessibility remain central to College life today.



*Pictured: Greta Thunberg, William Morris and Caroline Lucas*

# Death or glory on The Mothership!

The Talisker Whisky Atlantic Challenge is an extreme endurance race where teams compete to row 3,000 miles across the Atlantic. **Lebby Eyres** (1990, Literae Humaniores) was one of The Mothership, four working mums rowing 'to show that no challenge is too great to overcome, and that gender has no limitations'.

The question I asked myself most before setting off on last year's Talisker Whisky Atlantic Challenge was not 'Will I be able to wake up three times a night?' or 'Am I going to die?' but simply, 'What will it be like out there?'

No amount of chatting to previous participants, ocean rowing coaches or transatlantic sailors can answer this question. The only way to find out is to experience it for yourself.

Some people talk about boredom on the boat. Perhaps this can kick in after several weeks at sea, but neither I nor my crewmates felt it at any time. Every day on the ocean is different – in fact, every hour. We saw incredible sunsets and sunrises, got soaked in brief but violent squalls, rowed through water that felt like concrete and marvelled at the intense beauty of the ocean sky at night.

After leaving La Gomera in the Canary Islands, we rowed in a two-hour on, two-hour off shift pattern for six weeks, occasionally switching it up to an even more punishing schedule as we raced our rivals across three thousand miles. There's something very bizarre about being involved in a side-by-side race with a crew you can't see.

It led to a strange environment on the boat. We were all alone in the vastness of the Atlantic yet constantly trying to keep tabs on our invisible enemy. The tracking app, YB Races, would update every four hours with all 35 crews' position in the race. Mostly, we kept in touch with the outside world the old-fashioned way, by satellite phone.

'Where are One Ocean Crew?' I'd demand of my husband every night at 8pm sharp. For two weeks, they were a few miles in the front. Then we took the lead by 20 NM after stealing a march on them over the Christmas period. Every day, they whittled us down, bit by bit. For an agonising three days, we battled neck and neck, until finally they overhauled us.

The intensity of the race led to many discussions on the boat. Were we doing the right thing, pushing ourselves to the limits, for the sake of a trophy and an expensive watch? Would it not be better to enjoy the moment with slightly less pain or effort? No. 'Death or glory', I wrote to a friend. We were determined to show the world that four middle-aged mums, with 11 kids between us, could still be in the game. We were athletes.

So often, older women who've rowed the Atlantic have been viewed as plucky participants. But two of us were former Oxford Blues. I'd honed my competitive instinct and rowing prowess getting blades for Exeter College. We wanted to do ourselves proud.

*We were determined to show the world that four middle-aged mums, with 11 kids between us, could still be in the game.*

And of course we did, even though our rivals pipped us by eight hours. Our obsession with winning evaporated the moment we arrived in Antigua, as the sun set and the lights of English Harbour flickered on. We'd made it. We'd battled sore hands, horrific bum sores, 20 or 30ft waves and nights of pitch-black terror. We were euphoric.

Looking back, what stays with me is the fun we had. Spending six solid weeks with three other women was like being a student again. We had in-depth conversations about all the boyfriends we'd ever had, the interior design of our houses and our friends' divorces: anything that would keep us awake at 3am.

There is always a mix of the mundane and the extraordinary on board. You need the former in order to be able to cope with the latter: the constant noise of the oars, the slapping of the water against the cabin as you try to sleep, the loud bangs when we were swamped by waves.

Then there were the moments of extreme calm, with the ocean as flat as the Isis, pods of dolphins swimming past, the light of the moon on the sea guiding us home. Then, we had time to reflect on the wonder of the ocean environment and experience the true solitude there is to be found on our planet.

All of us left a little part of ourselves out there on the sea, and for the rest of our lives, we'll long to go back.

*Felicity Ashley, Pippa Edwards, Jo Blackshaw and Lebby Eyres spent 40 days 11 hours and 25 minutes – including Christmas – aboard The Mothership, finishing 13th in the 3,000-mile Talisker Whisky Atlantic Challenge*

# The Rabbi's Rebellion

When **Jeffrey Newman** (1960, PPP) travelled to Exeter College in 2007 for the launch of the Earth Charter in the UK, he couldn't have imagined he was on a path towards arrest. Even so, he wouldn't change it for the world.


*I was warned I would be arrested but felt liberated. Something I had deeply feared was actually easy and felt ethically right.*

On Tuesday 15 October 2019 I was arrested, an unforgettable experience. It happened quite suddenly and unexpectedly, though I had known for some time that it was inevitable. Nevertheless, it was a profound shock for me – a respectable, law abiding, elderly rabbi.

Exeter College and Rector Frances Cairncross had played a significant, though entirely innocent, role. In 2007, we formally launched the Earth Charter in the UK at the College. It was a memorable occasion, coinciding with the Turl Street Arts Festival and a jazz band which paraded around the Quads. Wangari Maathai, an Earth Charter Commissioner and the first African woman to win the Nobel Peace Prize for her 'contribution to sustainable development, democracy and peace', planted a walnut tree on the mound (hopefully it is still flourishing) and a number of key activists from around the world spoke in the lecture hall and in a two-day seminar in the Rector's rooms.

The Earth Charter, published by UNESCO in 2000, is a statement of 16 principles (and 61 very specific sub-principles) for a just, sustainable and peaceful global society. It formed a basis for Pope Francis's *Laudato Si'* (2015). The powerful preamble includes a description of the global situation (below):

**The dominant patterns of production and consumption are causing environmental devastation, the depletion of resources, and a massive extinction of species. Communities are being undermined. The benefits of development are not shared equitably and the gap between rich and poor is widening. Injustice, poverty, ignorance, and violent conflict are widespread and the cause of great suffering. An unprecedented rise in human population has overburdened ecological and social systems. The foundations of global security are threatened. These trends are perilous – but not inevitable.**



*Image: Rabbi Newman shortly before his arrest*

We can be proud that the Charter, initiated by Mikhail Gorbachev and Maurice Strong, with a drafting committee of 25 covering the five continents, was launched in the UK at Exeter College. It is a beautifully crafted document, which Steven Rockefeller (who was also present at the launch) edited, with consummate mediation skills, as Executive Secretary.

I think the beauty and strength of the Charter and the lack of progress in meeting any of its objectives, particularly on global warming, led me directly to take part in Extinction Rebellion in 2018. I was asked to speak at an opening ceremony for COP24, the 2018 UN Climate Change Conference, and found myself saying that I would go to Katowice in Poland because it was only 25 km from Auschwitz and we needed to ensure a Jewish presence. As a Jew, my life has been overshadowed by the Holocaust and concern about the role of the bystander – those who recognised what was happening and did nothing. There are many who feel that is our current global situation: we know the widespread devastations associated with climate change – and the societal and geopolitical pressures they create – and must not remain bystanders. But what can we do?

Being in Auschwitz impelled me to take another step. I joined with a demonstration near the Bank of England, protesting against unprincipled use of finance. We came to a street blockaded by the police. They wanted us to cross over and join with the main body of the demo but before doing so, I felt I needed to pause. I remembered that in my pocket I had a copy of Extinction Rebellion's 'Declaration of Solemn Intention' and began to read it out loud (below):

**Let us take a moment, this moment, to consider why we are here.**

**Let us remember our love for this beautiful planet that feeds, nourishes and sustains us.**

**Let's remember our love for the whole of humanity, in all corners of the world.**

**Let's recollect our sincere desire to protect all this, for ourselves, for all living beings, and for generations to come.**

**As we act today, may we find the courage to bring this sense of peace, love and appreciation to everyone we encounter, to every word we speak and to every action we make.**

**We are here for all of us. So may it be.**

As I read, more and more people echoed my words. When we had finished I knew there was nothing else for me to do but to sit down on the Earth, our planet. I was warned I would be arrested but felt liberated. Something I had deeply feared was actually easy and felt ethically right.

Now, after Covid, in the midst of the deadly Russian invasion of Ukraine, with many in the UK reliant on food banks, it is clear the world is out of joint and the question remains 'what can we do?' Though it has raised the level of awareness, many now believe Extinction Rebellion needs a 'moderate flank', a wider grouping who together will use their influence in business, in their communities, in their friendship circles and families – even in their Oxford colleges. What I have learnt, from Frances Cairncross amongst others, is that the individual, in collaboration with others, has extraordinary potential to help change the world.




# Alan Bennett: House Arrest

## *Pandemic Diaries*

**Costi Levy** (2019, Philosophy and Spanish) reviews the revered author's best-selling pandemic diaries.

*'As an over-seventy, I am officially exhorted to remain isolated and indoors which is to say that my usual going-on now has governmental endorsement.'*

It's the 24th of February 2020, and coronavirus is in full force in northern Italy. This is the starting point for the revered playwright and Exonian Alan Bennett's (1954, Modern History, Honorary Fellow) series of diary entries that trace the first year of the pandemic. *House Arrest: Pandemic Diaries* offers an insight into Bennett's domestic and local environments in the political and social context of 2020. His diary entries flow between memories, notes on literature, and witty commentary on a unique moment in our collective consciousness.

'As an over-seventy, I am officially exhorted to remain isolated and indoors which is to say that my usual going-on now has governmental endorsement', writes Bennett on the 14th of March. Bennett's domestic world is centred around the people who define it – his partner Rupert, doorstep visitors, letter writers and phone callers.

Perhaps most centrally to Bennett's lockdown endeavours is a call he documents from director Nicholas Hytner. The pandemic saw the making of a new version of his 1988 *Talking Heads* monologues, produced by Hytner's London Theatre Company and the BBC. *House Arrest* follows Bennett's experience of briefing directors, watching recordings of the performances (on account of the lockdown restricting him from attending rehearsals), and a 'lovely card' from actor Martin Freeman. Entries such as these are interspersed with recollections of Bennett's youth, amongst them lectures at Oxford and the 1961 opening of *Beyond the Fringe*, offering a peak into Bennett's long and varied artistic career.

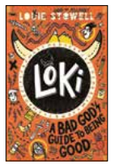
As Bennett traces our collective experience of the pandemic – bumping elbows, the Thursday clap for carers, ineffective governance – he moves from his domestic space to his local and natural environment: '*12 August*. A break from routine yesterday, when instead of taking our constitutional, we go for a drive in the park.' Amongst these familiar experiences are recollections of Bennett's experiences of nature in his youth, notably his father's fishing trips, in which his family were obliged to partake, and eventually the roads and lanes on a drive home to Yorkshire.

Through these and other reflections, *House Arrest* offers an exploration of how the objects, places and people we are surrounded by shape present experiences and offer portals into the past.

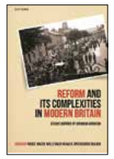
# Recommended reading

Exonians have evidently been writing prolifically during the pandemic. Here is a snapshot of just some of the books published in recent months, including contributions from the Rector, Fellows, Emeritus Fellows and alumni. Whether you enjoy history or poetry, physics or fiction, there is something for everyone.


**Between Scholarship and Church Politics: The Lives of John Prideaux, 1578-1650**
John Maddicott (Emeritus Fellow in Medieval History)
Oxford University Press
A fascinating biography of John Prideaux, Rector of Exeter College from 1612 to 1642, who played a central role in the rebuilding and development of Exeter College.




**Loki: A Bad God's Guide to Being Good**
Louie Stowell (1997, English)
Walker
Packed with dodoodles and cartoons, this diary reimagines the Norse God Loki as a weedy 11-year-old boy who has been trapped on Earth after playing one too many pranks.




**Reform and Its Complexities in Modern Britain: Essays Inspired by Sir Brian Harrison**
Rick Trainor (Rector) et al.
Oxford University Press
This volume features 11 research-based essays (including one by the Rector on 19th-century university reform, using Exeter College as a case study) exploring Brian Harrison's principal historical interest, reform in British history since the 18th century.


**A Companion to Calderón de la Barca**
Jonathan Thacker (Professorial Fellow and King Alfonso XIII Professor of Spanish studies) et al.
Boydell & Brewer
The first of its kind in English, this comprehensive study delves into the life, corpus and reception of one of the most important dramatists of the Spanish Golden Age.


**Printing History and Cultural Change: Fashioning the Modern English Text in Eighteenth-Century Britain**
Richard Wendorf (Visiting Fellow, 2019)
Oxford University Press
A comprehensive study of typographical changes of the printed page in 18th-century Britain, in the context of landmark cultural changes such as the adoption of the Gregorian calendar and the publication of Johnson's Dictionary.


**Projecting Imperial Power: New Nineteenth Century Emperors and the Public Sphere**
Helen Watanabe-O'Kelly (Emeritus Fellow in German)
Oxford University Press
From Franz I of Austria and Napoleon I, to Maximilian of Mexico, the 19th century saw the proclamation of emperors across the globe. Professor Watanabe-O'Kelly considers their role then, and in national cultural memory now.


**Shadowlands**
Matthew Green (2001, Modern History)
Faber & Faber
Drowned. Buried by sand. Decimated by plague. Plunged off a cliff. Shadowlands is the forgotten history of Britain's lost cities, ghost towns and vanished villages: our shadowlands.


**Elusive: How Peter Higgs Solved the Mystery of Mass**
Frank Close (Emeritus Fellow in Physics)
Allen Lane
On the 10th anniversary of its discovery, Close tells the story of the Higgs Boson particle, and its pivotal role in 20th century physics.

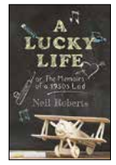

**Hourglass**
Keiran Goddard (2002, English)
Little, Brown and Company
This revolutionary love story turns time upside down. Through the intimate wreckage of heartbreak it asks what it means to lose what you love.


**Morning Lit: Portals After Alia**
Omar Sabbagh (1999, PPE)
Cinnamon Press
In his most personal poetry collection yet, Sabbagh reflects on fatherhood, marriage, bereavement, and what it means to love.


**The Transgender Issue: An Argument for Justice**
Shon Faye (2006, English)
Penguin
In this landmark work, Shon Faye reclaims the idea of the 'transgender issue' to uncover the reality of what it means to be trans in a transphobic society.


**The Latinist**
Mark Prins (2009, Williams)
W. W. Norton
A contemporary reimagining of the Daphne and Apollo myth, *The Latinist* follows an Oxford DPhil student as she attempts to break free from the disturbing passion of her tutor.


**Is This a Book?**
Angus Phillips (1979, PPE)
Cambridge University Press
This is a book about the book: with the arrival of ebooks, digital narratives and audiobooks, the time is right for a fresh discussion of what is a book.




**A Lucky Life**
Neil Roberts (1957, English)
The Conrad Press
A memoir of an ordinary, yet quite extraordinary life. Roberts takes us on a journey from his wartime childhood, to Oxford, to his career in education and lively family life.

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