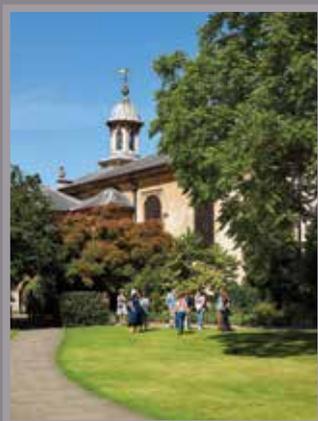


EMMANUEL 2015 REVIEW



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Emma students gave tours of the College on a gloriously sunny open day for prospective applicants

Photograph: Marcus Ginns

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VIEW FROM THE LODGE



The only problem with the second year as Master is that everyone expects you to know what you are doing! In the first year forgiveness prevails when you turn up in the wrong place, in the wrong clothes or have to ask how it works yet again. By the second year, however, you are expected to be a pro and to remember everything that happens, when and why. 'Being new' is no longer an excuse, yet I can't count the number of times I've had to ask this year: what happens at this meeting? is it black tie? gown? do I speak? and in which language? This is a chance to thank publicly everyone who has patiently guided me through my second, hugely enjoyable year as Master.

Master of Emmanuel! I relish the sense of warmth and affection that surrounds these words. In no time at all I realised this is an institution that inspires such feelings. I've felt it particularly strongly when welcoming you here and visiting abroad. Looking at Emma from afar and through the eyes of those who don't often have the chance to visit has been very instructive for me.

continued on next page



You are all passionate about the College, eager to hear what is happening, and curious and encouraging about the future

You are all passionate about the College, eager to hear what is happening, and curious and encouraging about the future.

There's always plenty to talk about. Academically, this year's results are as good as ever, and Emma regularly buzzes as school groups visit. I have become Emmanuel's new arts and sports correspondent, with my twitter account @fionareynolds and Emmanuel's @EmmaCambridge regularly bursting with pride. There are many happy times – the Chapel Choir singing grace on Sunday evenings, the Boat Club crews rowing their hearts out, new graduates hugging each other with joy and relief – and it's clear the Emmanuel spirit is thriving.

But thinking about the future has dominated this year, since our neighbour on the corner of St Andrew's Street and Park Terrace, Cambridge Assessment, will soon be moving to join Cambridge University Press on their site near the station. For a piece of adjacent land to be potentially available is very rare, so we've started exploring how the site could help with our needs and aspirations for the next 20 years or so and discussing with the University, the owners, the possibility of acquiring it.

There are good reasons for extending. We'd like to welcome into Emmanuel around 100 of the 3500 post-doctoral academics who form the bedrock of the University's research capability but rarely have a college affiliation. We also want to provide space

for a nursery, since there is a desperate shortage for children of academics. We need better social facilities for our growing community of graduate students, and with just another 80 rooms we could accommodate all undergraduates on the main College site. With more space we could open up the heart of Emma and consolidate our renowned reputation for friendliness, providing informal opportunities for everyone, including Members visiting Cambridge, to chat over coffee.

It is not yet clear whether we will be able to acquire the land, but the preparations themselves have been very useful. We've commissioned a Conservation Statement, something the National Trust finds invaluable. In one place will be information about the history of our buildings and grounds, their significance and importance, how they've changed in the past and possibilities for the future. In addition Fellows and students have shared their memories, stories that have shaped Emmanuel, and in due course we'll be asking you for yours too. We want to capture Emmanuel's 'spirit of place': what makes it special, what is sacrosanct, where there may be potential for evolution, and how our physical environment reflects and affects those who live, work and visit here. We are very grateful to the Members who have given funds to make the project possible: see pages 17–19 for more details.

So a wonderful second year has also seen the birth of some exciting ideas. Whatever happens we have prepared the ground in a way that will sustain all that we love about Emmanuel, while adapting it, as each generation needs to, for the future.

Thank you all for your continuing encouragement and friendship. Two years in I feel I am beginning to know which way is 'up', though I've no doubt I will still be asking questions next year, and next ...

Fiona Reynolds, Master



Keith Heppell

It was great fun to have so many children here at a tea party for local Members

PROGRAMMABLE PLASTICS

CHRIS HUNTER – FELLOW



Self-organisation is an intrinsic property of matter. Take any collection of molecules, and under the right conditions they will form an ordered arrangement. For example, if you take 10^{20} water molecules at 20°C and atmospheric pressure they will spontaneously form a liquid droplet. A cell is an assembly of a much more complex mixture of molecules, but every molecule has encoded in its chemical structure the information that tells where it should be in the cell and with which other molecules it should interact. The aim of my research is to understand and exploit the forces that govern these intermolecular interactions.

One of the challenges is that these interactions are very weak when isolated. For example, chloroform and ether are both volatile substances, because the molecules interact very weakly with their surroundings. However, a chloroform molecule can interact with an ether molecule through a very weak but specific interaction called a CH-O hydrogen bond. As a consequence, if a litre of chloroform is mixed with a litre of ether the mixture becomes very hot and the total volume shrinks by 5 to 10 per cent. Although the chloroform and ether molecules interact weakly, there are many interactions in two litres of the mixture and so the effects are readily observable.

Multiple interactions that act cooperatively to produce a measurable outcome are the focus of research in my lab

Multiple interactions that act cooperatively to produce a measurable outcome are the focus of research in my laboratory. We use synthetic molecules designed to organise themselves into stable complexes to probe the fine details of the relationship between intermolecular forces and chemical structure.



Chris Hunter in the newly refurbished Dudley Williams Laboratory in the Department of Chemistry. Models in three dimensions are important for working out how molecules interact

We can draw up quantitative models that can be used to design and predict the behaviour of new molecules based on chemical structure

of interconnected interactions. By using robotic spectrometers, we automate these experiments to survey large numbers of closely related synthetic complexes. These measurements provide hard experimental data from which we can draw general conclusions about the relative significance of the different factors that govern intermolecular interactions. We can thus draw up quantitative models that can be used to design and predict the behaviour of new molecules based on their chemical structure.

In nature, biological molecules coordinate large numbers of very weak interactions to achieve remarkable feats. In chemistry, we are now beginning to map out the rules that will allow us to build new synthetic molecular ensembles of comparable sophistication.

For example, I have just started a major European Research Council project called 'Programmable Plastics' aimed at developing a new class of polymer, which has been designed to follow these rules. The idea is to establish methods for the synthesis of polymers that have defined sequences of interaction sites. Cooperative interactions between complementary sites on two different polymer chains will lead to

the formation of complexes that resemble the DNA double helix. In DNA, a ladder of intermolecular interactions links two polymer chains, and the ladder then twists to form the double helix. It is the ladder structure that is the key to the special properties of DNA: if a single chain of DNA is provided with monomeric building blocks (A, C, G and T), it can be used as a template to make another chain, which is a complementary copy.

This process is the molecular basis for inheritance and evolution in biology. The new polymers we are making will not only resemble DNA structurally; they will also have similar template properties. In other words, it will be possible to use the sequence of interaction sites on one chain to synthesise a new one that replicates the sequence information in the template.

The vision is to use these synthetic replicating polymers in directed evolution experiments to find new functional materials. This is really exciting, because the concepts can be applied to many different types of conventional plastics, opening up a huge number of new possibilities for discovering new types of materials with unprecedented properties.

The vision is to use these synthetic replicating polymers in directed evolution experiments to find new functional materials

For molecules that interact at multiple points of contact and are embedded in a complex network of interactions with the surrounding solvent molecules, disentangling a specific contribution from the properties of the whole group is not straightforward. The complexity is problematic, because we know theoretically that there are many factors that affect intermolecular interactions, and it is difficult to establish which ones really matter and which are intellectual curiosities.

We have developed experiments that make it possible to dissect the energetic contribution of a single intermolecular contact from a network

MAKING STATES, DRINKING COFFEE

ALEX JEFFREY – FELLOW

Buses rumble past the roadside café where our meeting is taking place. The waiter brings over two copper trays of Bosnian coffee: on each an ornate coffee pot (*džezva*) sits alongside a cup (*fildzan*) and a cluster of sugar lumps. I am meeting Vesna, a member of a human rights organisation in the southern Bosnian town of Mostar and a keen advocate for establishing war crimes trials after the violence of the 1992–95 Bosnian war.

Gesticulating with her *džezva*, Vesna is frustrated with the pace of change and progress in her country, an exasperation I have witnessed on many occasions over the last 15 years of conducting research in Bosnia and Herzegovina: ‘People don’t speak with each other, politicians don’t work together; it is like they don’t live in the same country.’

Vesna’s is a common frustration. To establish a new country after a divisive and violent conflict is a profound geographical challenge. Violence is so often about making claims to space: about asserting ownership of a homeland and expelling those who do not fit this imagined ideal. This was certainly the case during the conflict, where nationalist military projects were based on the ‘cleansing’ of territory, a grotesque euphemism for the murder and expulsion of victim populations. These projects were in many ways endorsed by 1995’s Dayton Peace Accords, a resolution that ended the conflict but partitioned Bosnia into a byzantine array of devolved territories: entities, municipalities, cantons and even a site where many of these overlapped in the northern Bosnian town of Brčko.

In the face of this territorial fragmentation, my research has explored how the concept of a unified Bosnian state has been communicated

‘People don’t speak with each other, politicians don’t work together; it is like they don’t live in the same country’

after the war and with what political effects. But rather than explore this through the eyes of those attempting to convey what the state is (whether it be state officials, political parties, international agencies or civil servants), I have looked to those who are both the audience of – and assistants in – these processes: community associations, non-governmental organisations, youth groups and civil society agencies.

I have been guided by a sense that it is through the operations of these purportedly non-state actors that we see the challenge of demonstrating there is a coherent state. In doing so we can start to understand the ways in which imagined uniformity is disrupted and subverted, and we can also glimpse the means through which different ideas of the state can co-exist.

But let’s go back to the coffee. Coffee has played a part in my research in a number of important ways. Taking a worm’s-eye view on state-building has meant undertaking periods of long-term residential fieldwork, where the methodology comprises talking to as many people as possible: sitting having coffee and allowing individuals and groups to discuss the emergence of the Bosnian state in their own terms.

The significance of coffee-shop meetings is not simply a methodological choice, it is also a reflection of the centrality of coffee to Bosnian (and before this, Yugoslav) culture; the ritual of drinking coffee is a public and private moment

that builds solidarity and trust. In this sense sociologists see coffee-drinking as an important mechanism for building social capital. But in the post-war period the coffee landscape has mirrored the territory of the Bosnian state itself: in many parts of the country the coffee shop you drink in is interpreted as a signal of your ethnic identity. Social capital becomes aligned to group membership: blood, soil and coffee.

I look across at the mantelpiece of my room in Emmanuel House. There sits a *džezva*, a reminder of the significance of coffee to both the making and breaking of states. I sometimes get the *džezva* out in supervisions and make a coffee: what better way of bringing political geography to life than holding it in your hands?



I look across at the mantelpiece of my room in Emmanuel House. There sits a *džezva*, a reminder of the significance of coffee to both the making and breaking of states



AEROACOUSTICS MELODY & CACOPHONY

ANURAG AGARWAL – FELLOW

Aeroacoustics is the science of sound induced by the flow of air. Initial research in the field was motivated by the need to reduce aircraft noise. This was the subject of my research work when I first came to Cambridge as a post-doctoral researcher and I worked on a project to develop a 'silent' aircraft. This led to a conceptual design of a flying-wing airframe that we predicted would be significantly quieter than traditional aircraft. NASA is now using our design to construct the next generation of quiet aircraft.

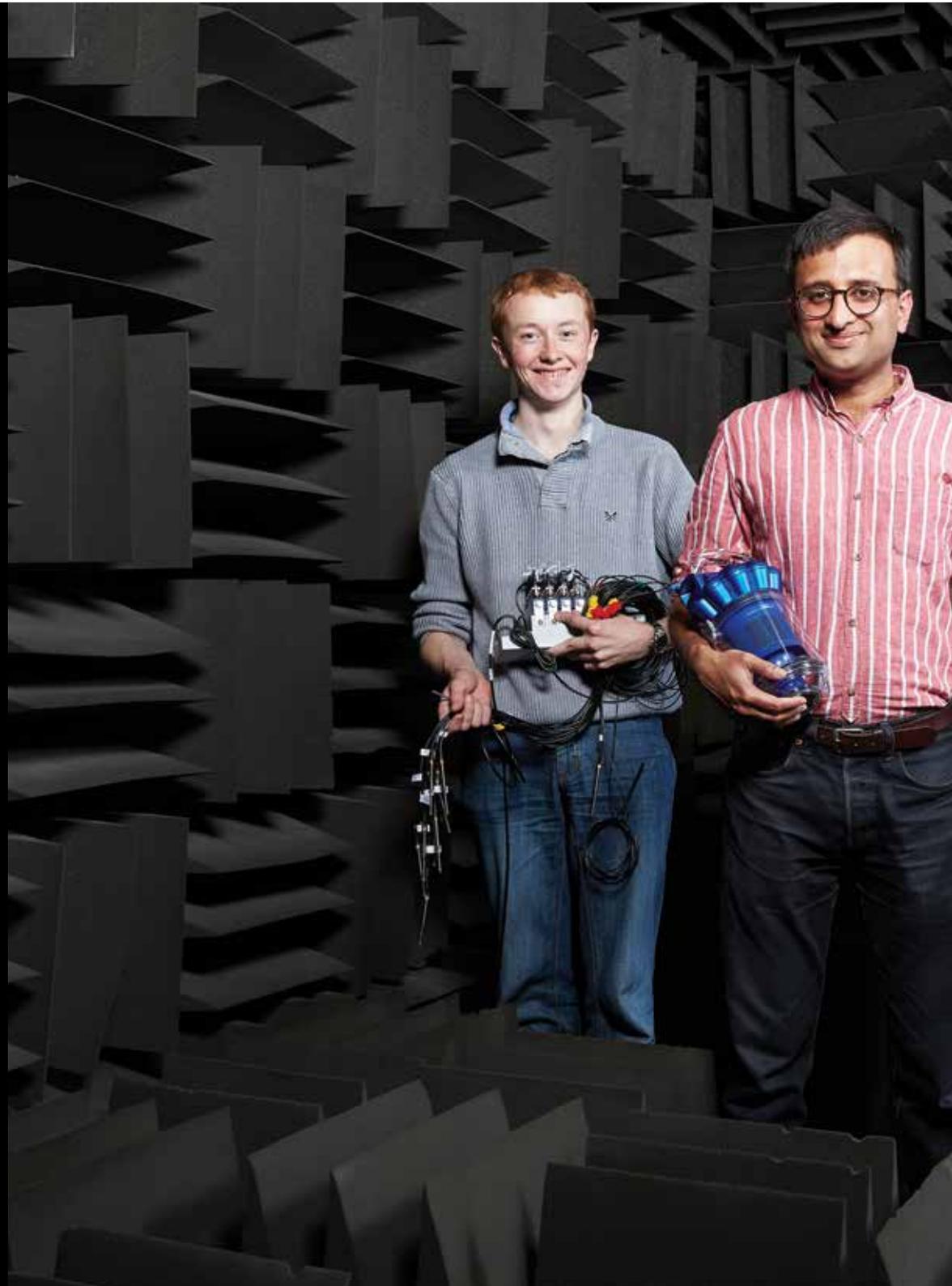
Aircraft noise continued to be my main area of research, but it all changed about five years ago when my wife said, 'you do all this work on aircraft noise ... why don't you do something useful and reduce the noise from my vacuum cleaner?' By a strange coincidence Dyson approached us just a week later to discuss ways of reducing noise from theirs. This provided an opportunity to work on a new application of aeroacoustics and led to our first collaborative project with Dyson. Over time our relationship has progressed with two further projects, one on noise from fans and another on that from hand dryers.

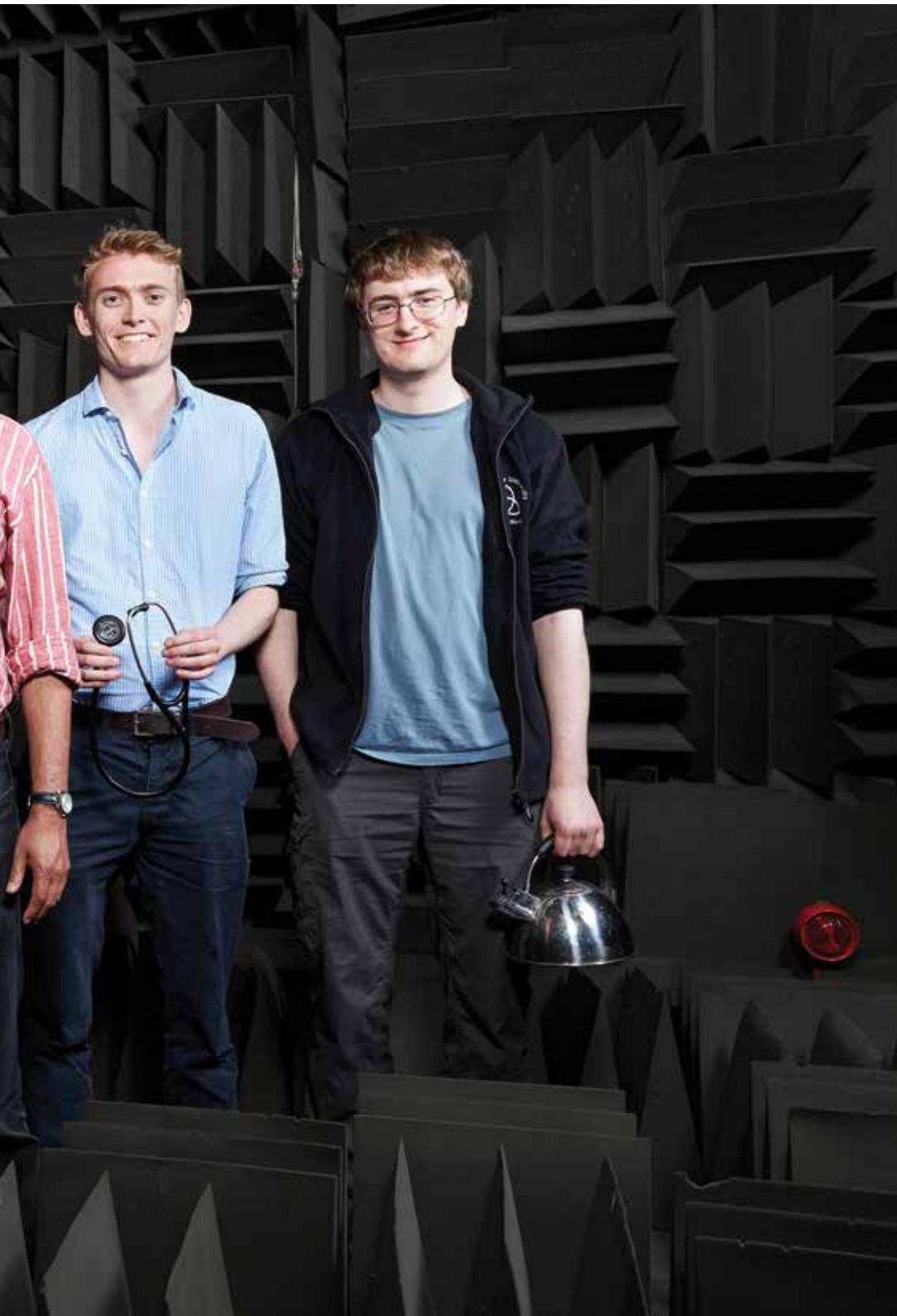
Aeroacoustics is not restricted to reduction of noise. One of my students, Ross Henrywood, recently worked on understanding the whistling noise made by a steam kettle. At first glance it appears to be a mundane problem, but it had

not been solved for over 100 years and it took the expertise of a brilliant student to unravel the mysteries of sounds created by turbulent flow through the kettle. He was able to pinpoint two separate mechanisms that specifically cause a kettle to whistle, rather than make the rushing noise a flow might create in other household items, such as a hair dryer.

Apart from reducing and understanding sound, we are also using aeroacoustics for beneficial purposes. I recently discovered that I am allergic to dust mites. The allergy manifested itself in the form of a wheezing sound. I wanted to understand the physical mechanism of wheezing but was surprised to find that this problem had not been solved. A wheeze could

'You do all this work on aircraft noise ... why don't you do something useful and reduce the noise from my vacuum cleaner?'





Anurag Agarwal (second from left) with his research students: Alastair Gregory (left), Ed Kay (right) and Ross Henrywood (far right)

We want to understand the causes of these sounds with the ultimate aim of developing an intelligent stethoscope for the twenty-first century capable of automatic diagnoses

be symptomatic of a number of medical conditions, such as asthma, bronchial stenosis or lung cancer. Current diagnosis depends on a doctor interpreting sounds from a stethoscope and it is hard to separate reliably one type of wheeze from another. A better understanding of how sounds from these medical conditions are produced would solve this problem.

This led to two new collaborative projects: one with my PhD student Alastair Gregory, and Edwin Chilvers and Pasupathy Sivasothy at Addenbrooke's looking at wheezing in lungs; the second with my PhD student Ed Kay and

Len Shapiro at Papworth, on sounds from the human heart. Heart and lung diseases produce characteristic sounds that can be picked up by a stethoscope, the design of which has not changed significantly since it was invented in 1816, almost two centuries ago! We want to understand the causes of these sounds with the ultimate aim of developing an intelligent stethoscope for the twenty-first century that is capable of making automatic diagnoses.

It is interesting to note that as the size of the application reduces, the frequency with which it is encountered increases. We normally only occasionally hear aircraft but a heart beats every second. Given the large range and ubiquitous nature of the applications of aeroacoustics, there should be many more interesting problems left to explore.

These research projects would not have been possible without my brilliant students. This reminds me of a very influential awards acceptance speech in which the speaker said 'the best way to do good research is to identify good students and give them interesting problems'. The speaker was Shôn Ffowcs Williams, our former Master.

'The best way to do good research is to identify good students and give them interesting problems'

JAPANESE EARLY MODERN TEXTS

LAURA MORETTI – FELLOW



*Laura in front of the
1737 woodblock-printed
edition of the didactic
work Yamato shōgaku*



Kyoto in the 1660s: here the thriving economy of early modern Japan had become the cradle of a robust consumer society. Large-scale panoramic paintings of the city and printed guidebooks of the time depict a diversity of shops that sold all sorts of goods, from iron rice pots to beautifully crafted fans. And booksellers. Gazetteers record that there were hundreds of them and visual materials show that their customers extended to the 'everyman', regardless of gender and age: craftsmen, merchants, peasants, women and children all engaged in reading.

What the early modern 'everyman' of Japan was consuming, reading and enjoying fuels my research and the questions posed are not dissimilar from Gary Kelly's seminal *Oxford History of Popular Print Culture* series: the only difference is that I work in Japan, not the West.

My current research explores three main areas of early modern Japanese literature. The first focuses on seventeenth-century popular genres, aiming to produce the first in-depth, extensive study of them in a Western language and to challenge the received view shaped by Japanese academia. The second, partly funded by the British Academy, looks at single-sheet prints from the first half of the nineteenth century, which were the cheapest form of reading matter.

The third concerns children's literature. This is a topic dealt with in my recent monograph on *The Fashionable Ise (1766): The Origins of Utagaruta (Ise fūryū: Utagaruta no hajimari)*, a rewriting of the tenth-century classic *The Tales of Ise (Ise monogatari)* in a cheap picture-book format. This picture-book lay unnoticed for more than two centuries, but its examination has opened up unexplored aspects of Japanese literature in general and of children's literature in particular.

My field of interest still remains under-researched in the West and to a degree in Japan. There are several reasons for this. One is that early modern Japanese literature does not fit comfortably with the image of the modern Western novel, thereby discouraging generations of scholarly inquiry because the Japanese works are deemed to be 'not good enough'.

The classical grammar used in early modern Japanese texts displays puzzling variations not yet discussed in historical linguistics

Another hurdle is understanding the language and script of the original documents. The classical grammar used in early modern Japanese texts displays puzzling variations not yet discussed in historical linguistics. Deciphering these texts also requires a knowledge of classical Chinese read as Japanese (*kanbun kundoku*) and the epistolary idiom known as *sōrōbun*. Moreover, there are multiple variants of each phonetic sign and of the calligraphic rendering in cursive of both phonetic and logographic characters. Although contemporary Japanese would have learnt this script in primary education, today it needs a highly specialised palaeographic knowledge that outside Japanese academia is possessed by only a handful of scholars.

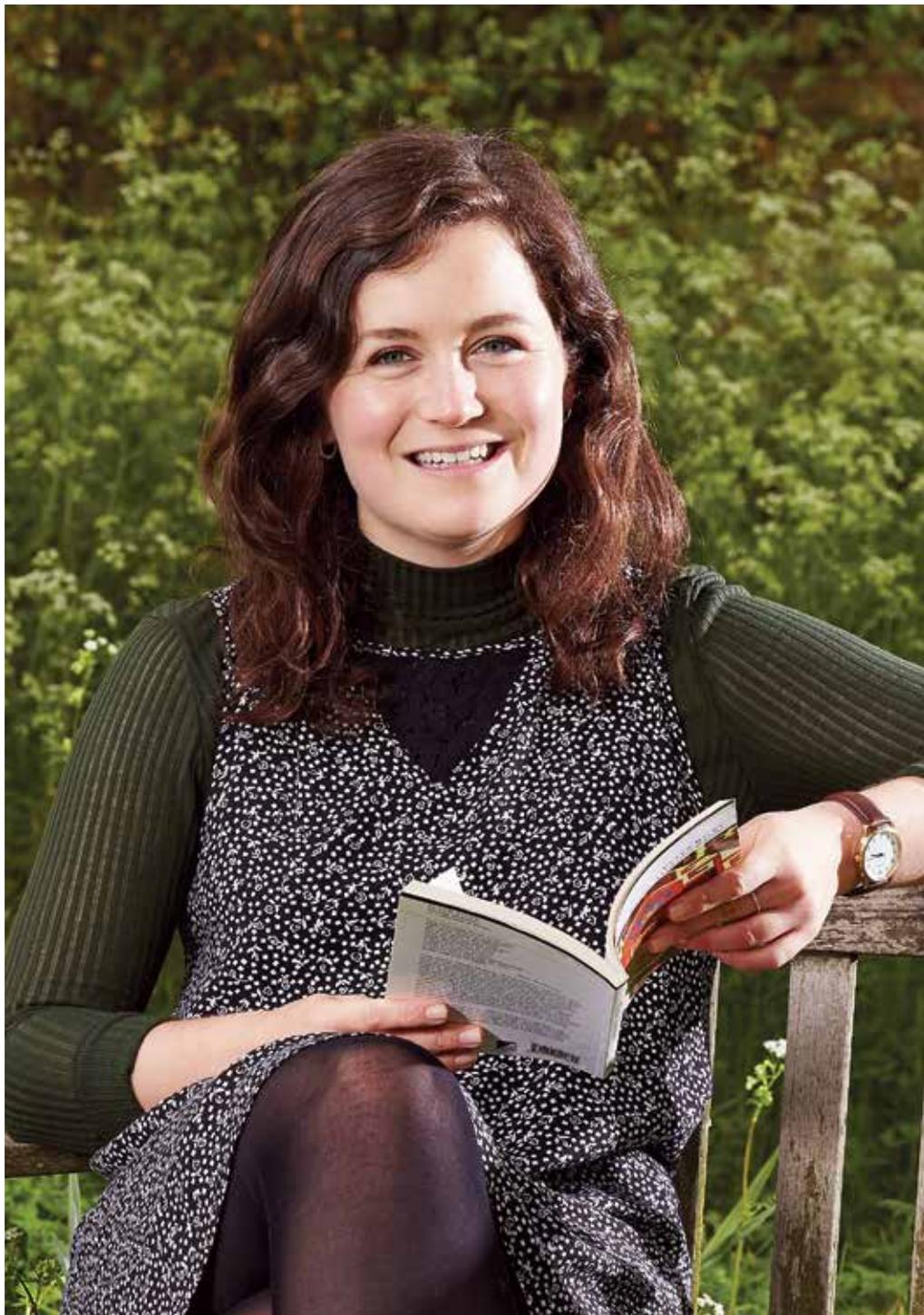
My generation would have never dreamt of being trained in such skills; we could only acquire them through self-study or by seeking the guidance of a Japanese scholar. I am sure we can and should guide a new generation of scholars through this complex territory.

At Emmanuel we have taken steps to address this situation since 2014 and stand at the forefront of the study of early modern Japanese palaeography both in the West and in Japan. Every August, in collaboration with colleagues who share this vision – Yamabe Susumu (Nishogakusha University), Amy Stanley (Northwestern University) and Ellis Tinios (University of Leeds) – and with the support of the Great Britain Sasakawa Foundation and the Japan Foundation, I coordinate a summer school for 20 participants: graduate students, scholars, librarians and museum curators from all over the world. Our summer school is unique in giving training in the complex set of skills required to decode early modern Japanese manuscripts, printed texts and archival materials through combining linguistic and palaeographic knowledge: what we like to refer to as 'holistic literacy'.

The timing could not be more opportune. Cambridge University is considering establishing a large-scale project on palaeography at a time when Japanese academics are striving to have younger generations rediscover their own literary and linguistic past. This graduate summer school and the resultant opening up of unmapped research horizons is making inroads into our awareness of a rich tradition in Japanese studies, and represents new contributions to the broader field of palaeographic research.

<http://wakan.cambridge.com>

At Emmanuel we stand at the forefront of the study of early modern Japanese palaeography both in the West and in Japan



POETS AND PARENTS

HELEN CHARMAN – RESEARCH STUDENT

After completing my undergraduate degree in English at Emmanuel in 2014, I was very grateful to be awarded a full studentship, through the generosity of the Late 80s fund and another Member, enabling me to study for an MPhil in Modern and Contemporary Literature.

My MPhil dissertation investigates the relationship between poetry and parenthood. Focussing on three contemporary poets – Andrea Brady, Denise Riley and Peter Riley – I’ve been looking at the ethical dilemmas specific to writing about a child. Each poet deals with different biographical circumstances: Peter Riley’s *Birth*

Prospectus and Denise Riley’s *A Part Song* are elegies for their children, whilst Brady’s *Mutability* is a ‘chronicle’ of the first year of her daughter’s life. All three, however, scrutinise what Jahan Ramazani, a theorist of mourning, has described as the ‘economic substructure’ of their work: there is an inherent tension in producing something from loss, and a deep-rooted unease about whether the appropriation of the child’s ‘voice’ by the parent is an act of exploitation. This is particularly pertinent to discussions of elegy and grief: texts like these need an especially careful kind of criticism.

I was unsure about whether I wanted to continue and apply for a PhD, but the breadth of the MPhil has helped me realise that I would like to do this

The questions underpinning my dissertation are grounded in the complex history of lyric thought. Recently, however – in the writings of Denise Riley, for one – there has been a growing focus on the sociopolitical space occupied by poetry. One of the things I’ve found most rewarding has been the opportunity to investigate ways in which writings documenting motherhood are partly a reaction against the dismissive tendency exhibited by the ‘masculine coterie’, in Brady’s terms, of some contemporary poets. Brady and Riley’s choice to write about motherhood marks the importance of establishing it as something that does not have to justify its own expression.

The MPhil course is not just a research degree: it is partially taught and this has suited me well. Alongside my dissertation, the seminar courses have allowed me to explore other areas of interest, writing on Frank O’Hara’s lyric addresses and renunciation in the novels of George Eliot. The Post-Pastoral course resulted in a unique – a word that doesn’t do justice to the uncanny nature of this experience – visit to Orford Ness in Suffolk, a nature reserve and former military testing ground.

Last October I was unsure whether I wanted to continue and apply for a PhD, but the breadth of the MPhil has helped me realise that I would like to do this. In the Lent term, I lectured on Frank O’Hara to undergraduates, and also gave a seminar paper, in a collaborative atmosphere that was invaluable. I’m very thankful for Emmanuel’s help, and am looking forward to putting together a PhD application for 2016 over the summer.



MUSIC IN AUCKLAND ROB LAIDLAW – UNDERGRADUATE

During the summer months of last year, I travelled to New Zealand in order to take up a work experience placement I had organised with the generous help of Auckland University's Department of Music. I worked in the Department's publishing branch, INTRADA, which specialises in discovering and editing sidelined music from the eighteenth and nineteenth centuries before publishing it for its first performances in centuries.

During my time there, I worked on several flute concerti written by French composer François Devienne towards the end of the eighteenth century. Though he went insane at the end of his life, the music I edited retained its impressive, and in many places beautiful, writing. I am very much looking forward to hearing its recording on the NAXOS label! My editing work alone was excellent experience, allowing me an insight into current academic life, as well as improving my own personal skills, abilities and expertise.

In addition to this, I took advantage of the thriving musical environment Auckland offered. I took part in several department-run activities, such as composers' workshops and postgraduate

I hope that future students seize the opportunities that the College kindly offers and continue to prove that Emmanuel is not just in Cambridge, but has a positive impact all across the globe

reading groups, as well as attending concerts. Needless to say, my involvement not only allowed me to further my academic skills but it also introduced me to the exciting world of New Zealand music. It was interesting to note how many similarities there are between such events here and in Auckland, despite the distance the country is from the UK.

However, this distance would have rendered me unable to travel there at all, had it not been for the incredibly helpful grants I received from Emmanuel. I was a recipient of support from the

Late 80s and Hockley funds, allowing me not only to afford the expensive return flights, but also to house and feed myself for the duration of my placement. I am very grateful indeed to the College for giving me the opportunity to have such an exciting six weeks.

After my placement finished, I met a friend and travelled around both islands of New Zealand, seeing many (if not all) of the sights that the beautiful country has to offer. We even managed to spot a wild kiwi! When returning to Auckland at the end of the trip, we were delighted to be able to join the Master at an Emmanuel lunch at an Emma Member's home on Waiheke Island. It was an event that really brought home the College's message about keeping a community among Members, even when they are separated by such great distances.

I hope that future students seize the fantastic opportunities that the College kindly offers and continue to prove that Emmanuel is not just in Cambridge, but has a positive impact all across the globe.

A SPORTING YEAR

LAURA SCHUBERT –
UNDERGRADUATE

I have always liked swimming and I partly chose Emma because of the pool (I've enjoyed many morning kilometres!). I was also keen to continue with water polo at university. A BBQ and erg competition (ergs are rowing machines) enticed me into the Boat Club last October, when I also started training for heavy throws (shot, discus and hammer) after competing in Athletics Cuppers (a victory for Emma women) and throwing for CUAC at the Freshers' Varsity Match. Soon I found myself doing water polo, rowing and athletics alongside my degree.

Being part of these teams has been incredible and my fellow athletes have become some of my best friends. Balancing all this exercise with academic work, Model UN debating and committees, as well as getting enough sleep, has required discipline and lots of cups of tea.

Water polo is a contact sport and I've not only felt that in my head/face/leg during the 26 matches I've played this year, but also from teammates in terms of fun and friendship. My fitness, skill and strength have improved, especially during our January training camp in Edinburgh. Our match schedule has been tough, especially as our 'home' pool is over an hour's drive away; I caught up on much needed sleep on these journeys. In the training sessions and matches – including achieving fifth at BUCS (British Universities and Colleges Sport) semi-finals – I have shared many special moments (such as getting a half Blue), with wonderful people: my team and my friends.

Alongside this, with many early morning and weekend outings, sweaty erg sessions and daily core training, I have embarked on a rowing journey. I was a novice in October 2014, then rowed in our Lent Women's II boat, and finally in the first boat for the May Bumps. Throughout the year I felt myself getting closer to the wondrous feeling of 'flying' that we rowers feel when we move together.

I was honoured to receive the first Ted Portlock Award for 'Most Improved Novice' and would like



Balancing all this exercise with academic work, as well as getting enough sleep, has required discipline and lots of cups of tea

to say thank you for all the opportunities the Emma family has given me. I also trained with the University Development Squad, competing in and winning the Beginners' BUCS regatta in May. I feel inspired to continue rowing and to push myself harder.

While athletics training has been less intense for me, I have appreciated the help and coaching I received from more experienced members of the club. Having done some shot put at school, at the

Freshers' Varsity Match I challenged myself to try hammer throw: a scary prospect. Training outside in the winter sunshine with friends I really improved and enjoyed myself.

When I am at home by the sea I enjoy open water swimming. I don't mind the cold and the seaweed, and so look forward to training while also being Open Water Captain, which involves organising next year's Varsity Channel Relay. I am keen to encourage others to join me training in Emma's pool or the *slightly* longer Jesus Green lido.

I appreciate the generous grant from Emmanuel's Windsor fund and welcome the subsidies from my clubs. I am very grateful for the dedication of my fellow athletes, captains, coaches and people behind the scenes who have enabled me to enjoy sport this year. Next year will, I hope, bring even more excitement.



BOOK BUS

DAISY SAVAGE – UNDERGRADUATE

During the summer of 2014 I spent two months in Malawi carrying out research for my Geography dissertation. Whilst I was there I also worked with the 'Book Bus', a British charity that operates in both Africa and South America to improve children's literacy in a fun and interesting way.

With Quentin Blake as trustee, a key way this is done is through arts and crafts. Although the official language of Malawi is English, it is rarely used outside city centres and local dialects dominate local teaching. Education is primarily conducted in English, and improving spoken and written English is a key priority to enable students to access a broader range of opportunities.

The charity primarily operates through volunteers. During my time with the Book Bus we visited three schools, some several times. They were in the villages surrounding Blantyre, often down precarious dirt tracks, making some of them inaccessible during the rainy season. I worked with a group of eight volunteers, ranging from families to teachers. We travelled on a large converted bus adorned with illustrations by Quentin Blake, which has been transformed into a travelling library and crafts centre. It is packed with every kind of craft resource you could imagine and a wide range of children's books, mostly set in African countries: a key priority. The schools are little more than small brick classrooms or shelters and the charity's materials are essential to supplement the traditional curriculum. The schoolchildren all recognise the bus and run along after it to come to lessons.

The Book Bus in the area I was based also has a food programme, supplying ingredients and facilities for local women to cook for the children at lunch time. This makes attending school all the more valuable and was clearly a highlight of the day.

The organisation believes it is important to involve local groups. For example it works with

several charities that help to build classrooms and facilities, but all the bricks are made by the communities. This avoids dependency and encourages pride in the local schools.

Since my trip was during the summer holidays we were not involved in the formal schooling programme that the Book Bus runs. Instead we operated a holiday club for the children in the schools that the bus regularly visits. It was amazing to see so many keen children turning up excited to learn. We relied upon the head teachers dividing the group according to literacy

Improving spoken and written English is a key priority to enable students to access a broader range of opportunities

and not just age. We would prepare activities based around a particular book – *Elmer the Elephant* being a particular favourite – and an accompanying craft or game. Three helpers translated instructions and the stories to varying degrees, depending on the group. Although some had very good levels of English most did not and the craft activities provided a great opportunity for the students to gain a better understanding of the stories. Vibrant textiles are a central part of the Malawian culture and chitenges – printed pieces of cloth – are worn by all the women and serve as skirt, child sling and purse, so we often included brightly coloured designs and materials in our craft activities.

It was rewarding and great to see the children's literacy improve, something I have always taken for granted. I thoroughly enjoyed my time with the Book Bus and I am very grateful to Emmanuel's Charities Committee for providing the funding to make this possible.





THE OTHER CAMBRIDGE

Each summer for a number of years the College has been host to a few students from Harvard, who are taking the opportunity to spend several weeks working with academics in Cambridge. These are generally arranged by the students themselves and always seem to be beneficial to all the parties involved. In 2013 we decided to investigate whether it would be possible for us to send each year several undergraduates reading science subjects, to spend the summer in laboratories at Harvard.

We discovered that Harvard has a major programme called PRISE (the Harvard College Program for Research in Science and Engineering) operating each summer, which places around 200 Harvard science undergraduates in laboratories for a ten-week period, and five Emmanuel students joined the programme for the summer of 2014. Most of the funding came from our Herchel Smith fund with, generously, a contribution from Harvard. Readers can get a flavour of the variety of topics studied from the accompanying accounts from our participants.

I think everyone involved considered last year's 'experiment' a success, so we are sending more students this year and hope this can continue for many more years to come. It is a way of introducing a few of our students to academic research in some of the world's leading laboratories away from this Cambridge, and for scientists at that Cambridge to learn what our undergraduates have to offer.

Robert Henderson, Senior Tutor

I think everyone considered last year's 'experiment' a success, so we are sending more students this year and hope this can continue for many years to come

Robert Henderson (centre) with four of the students who went to Harvard in 2014: from left to right James Gunn, Phoebe Pearce, Jake Tobin and Apurva Chitnis

JAKE TOBIN

I was at Massachusetts General Hospital, undertaking research on the sensitivity of leukaemia cell lines to different chemotherapy drugs. The programme was extremely useful as an introduction to laboratory methods and set me in good stead for my Part II project this year. It provided a great insight into the US healthcare system, and has made me keen to get involved in research as I move on to Cambridge's Clinical School in September.

ANDRA IONESCU

I spent last summer doing experimental physics research at Harvard. It was a very special experience, as it was the first time I had worked in a real research laboratory. The activities I took part in, both inside and outside the lab, allowed me to get a glimpse of what an academic career means and opened my eyes to new perspectives on what I wanted to do after graduation. It was an extraordinary and unforgettable experience, and I am grateful to both Emmanuel and Harvard for this opportunity.

PHOEBE PEARCE

My research focused on developing a new production method for graphene, often described as a 'wonder material' because of its extraordinary strength and ability to conduct electricity, giving it many possible applications in electronics and beyond. In addition to my lab work, the PRISE programme allowed me to explore Harvard and its

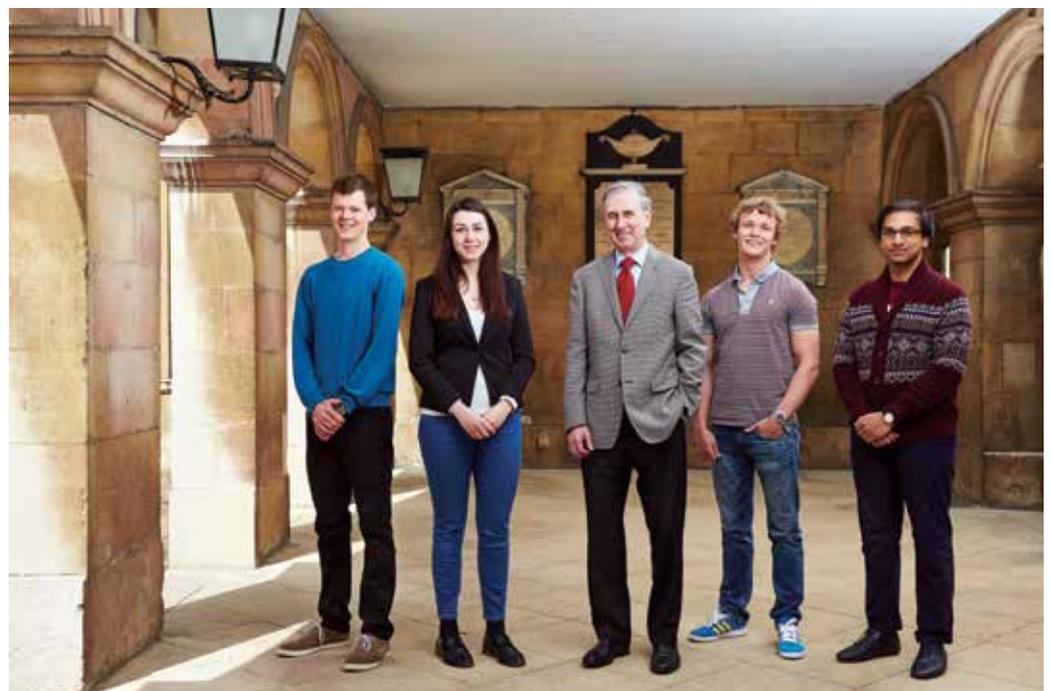
surroundings, with trips to Rhode Island and many Boston sights. Living with the other PRISE Fellows and experiencing undergraduate life at Harvard was extremely rewarding.

APURVA CHITNIS

My research in the Harvard School of Engineering and Applied Sciences focused on applying a novel machine-learning technique to predict the development of autism in young children. In particular, we investigated how robust logics – an approach allowing us to combine patient data and an understanding of the relationships between diseases – might be used. I had a fantastic summer at Harvard with the other Fellows, and am very grateful to Professor Leslie Valiant (Principal Supervisor), Professor Finale Doshi-Velez and Professor Brendan Juba for having me, and for Emmanuel's support and encouragement.

JAMES GUNN

My time was spent programming a simulation to predict whether certain quantum mechanical effects would inhibit the experimental production of ultra-cold NaCs molecules. I investigated the effect of wave-packet hole-digging on transitions between energy levels on differently shaped potential surfaces. These molecules are of interest for the future of quantum computers and work is continuing. This was my first experience of scientific research outside undergraduate practical classes and one that I greatly enjoyed. I now aim to remain in academia and pursue a PhD.





WHAT MAKES EMMA SPECIAL? THOUGHTS FROM THE CONSERVATION STATEMENT

This year we have been discussing what makes Emmanuel the college it is and have come up with the points below, which reflect our history, people and place.

A PLACE OF POSSIBILITIES

'I have set an acorn, which when it becomes an oak, God alone knows what will be the fruit thereof.'

A LIVING AND HISTORIC COMMUNITY

'A perpetual College of sacred theology, science, philosophy and good arts in the University of Cambridge.'

A PROTECTED ENVIRONMENT FOR EDUCATION, LEARNING AND RESEARCH

'I will endeavour to the utmost of my power to promote the honour and interests of the College as a place of education, religion, learning and research.'

A VERY PARTICULAR COMMUNITY

A society. A place, both home and haven, for 'people of the mind', for the exchange of ideas and knowledge.

BUILDING MERITOCRACY

A long tradition of openness and a quiet celebration of meritocracy. The variety and open siting of the buildings and gardens are free of the grander formal arrangements of many colleges.

A safe, protected environment for learning and research

THE GROVES OF ACADEME

A place for reflection and dialogue. Formality gives way through history to informality. Inviting glimpses of trees are seen at the openings of arches and courts.

BETWEEN TWO WORLDS.

A paradox: a formal entrance court with its fine Chapel announces the collegiate identity, while the open soft-edged Paddock speaks of informality, walks, talks and sitting in the sun.

OUT IN THE WORLD

Emmanuel is surrounded by the city. Undergraduates take away a memory of the busy bus station, partly because of the contrast with the quasi-cloistered community within.

A SHARED INHERITANCE

The Dominican friary, austere puritan seminary, restrained Restoration architecture, Georgian classical confidence, a desire for renewal and openness since the nineteenth century.

BUILDING ON TRADITION

The buildings link the stories and peoples of Emmanuel in memory, brick and masonry, with self-conscious picturesque, well-mannered homage and originality, openness, original use of buildings, and enhancement of views.

The buildings represent a long conversation between time and place



EMMA PAST AND PRESENT

Drawing up a Conservation Statement for Emmanuel has been a fascinating process. It has consolidated what we know, and has helped us think in a different way about the College's buildings and grounds and how they reflect and affect everyone who comes here, whether as student, Fellow, Member, member of staff, conference guest or member of the public. We've spent many happy hours looking at Emma with new eyes.

The work has been done by an enthusiastic team led by Jeremy Musson and Oliver Caroe. Their report will be discussed by the Governing Body in the autumn and has already encouraged us to refresh our thinking about Emmanuel. For instance:

- ✦ there has been teaching and learning happening on our site since 1238 with just a 40 year gap in the sixteenth century: can we claim to be the oldest 'college'?
- ✦ Emma's renowned warmth is underpinned by our site: the openness of our architecture: our low entrance buildings, the three-sided North Court and above all the welcoming Paddock at our heart
- ✦ a survey of undergraduates showed that they think the Paddock defines the College as much or more than Front Court
- ✦ there are fascinating details in the outhouses at the back of Park Terrace: curved walls, a turreted extension, a writer's attic reached by a ladder
- ✦ trees have been an essential feature of Emma since the sixteenth century and our first Master, Laurence Chaderton, was a keen planter of them

Jeremy Musson will be talking about the team's work and findings on the Emmanuel Society's day in College on Saturday 21 November. Details are in the Society's newsletter: do come!

Sarah Bendall, Development Director

We've spent many happy hours looking at Emma with new eyes ... The work has encouraged us to refresh our thinking about Emmanuel



The team from Cambridge Architectural Research: the conservation architect Oliver Caroe (left), architectural historian Jeremy Musson (far right), the architectural draughtsman Jon Harris (also on facing page) and their colleague Eleanor Rule



THANKING DONORS

Support from our Members means a great deal to the College and this year we have introduced a few more ways of saying thank you for donations.

All Benefactors

- ✦ are listed in the *Emmanuel Review*
- ✦ receive invitations to occasional events in College, including garden parties for donors
- ✦ are invited to an annual party in London for all donors in the previous year

All who pledge legacies to Emmanuel

- ✦ receive invitations to occasional events in College, including garden parties for donors

Master's Circle

£10 000 or more received

- ✦ are offered membership of the Master's Circle and invited to an annual dinner in College
- £50 000 or more received

- ✦ are offered membership of the Master's Circle and invited to an annual dinner in College
- ✦ are invited to the annual Gomes lecture and dinner

£100 000 or more received

- ✦ are offered membership of the Master's Circle and invited to an annual dinner in College
- ✦ are invited to the annual Gomes lecture and dinner
- ✦ are invited to the Fellows' Guest Night in May

Benefactor Bye-Fellows

£250 000 or more received

- ✦ receive invitations to a number of College events
- ✦ are able to dine at High Table on a number of occasions each year
- ✦ are listed in the *College Magazine* and the *Cambridge University Reporter*
- ✦ are admitted at a ceremony in the Parlour
- ✦ have their names recorded on a board in the Old Library

Benefactor Fellows

£1 000 000 or more received

- ✦ receive invitations to many College events
- ✦ are able to dine at High Table on several occasions each year
- ✦ are listed in the *College Magazine* and the *Cambridge University Reporter*
- ✦ are admitted at a ceremony in the Parlour
- ✦ have their names recorded on a board in the Old Library



Securing Emmanuel's Future



LEGACIES

There are several ways to include Emmanuel in your Will. Please ask the Development Office for a brochure giving suggested wordings and explaining about different types of bequest, and for information about how a legacy could reduce inheritance tax liability. We also suggest you consult your solicitor. We are very grateful to those who have already remembered the College in this way.

I HAVE SET AN *Acorn*, WHICH WHEN IT BECOMES AN *Oake*, GOD ALONE KNOWS WHAT WILL BE THE FRUIT THEREOF · SIR WALTER MILDMA

LATE EIGHTIES FUND UPDATE

The 'Late Eighties fund' was established in 2011 by Members who matriculated 1984-90, to help students suffering from financial hardship. In 2014-15 £35 000 has been disbursed:

- ✦ as a contribution towards the funding of an MPhil in English for an Emmanuel student, Helen Charman (see page 12)
- ✦ as a contribution towards the funding for a PhD student in Pharmacology, who is working with a Fellow, Dr Robert Henderson
- ✦ towards the costs of hosting 12 of the University-run 'Challenge Days' as part of our access and outreach activities, each attended by 60-80 pupils from Year 10. Schools with high proportions of students on free school meals are invited to send participants. In the morning there is a talk about university study, student life and finance. After lunch at Emmanuel and a tour of the College grounds with our undergraduates, there is at least one academic taster talk and a debate to discuss 'Why University?' All day undergraduates are on hand to answer questions
- ✦ as a hardship grant to an Emma student who has very difficult family circumstances and was desperately in need of financial support
- ✦ as a bursary to a student going on the Teach First programme
- ✦ as the College's share of the Cambridge bursaries for the eight students who matriculated in 2014 and receive funding under the National Scholarship Programme (available to those with parental incomes of under £25 000)
- ✦ as vacation placements to undergraduates:
 - reading MML to take part in an internship with the NGO International Bridges to Justice
 - reading Classics to study in museums in Greece
 - reading Medicine to visit the Derzhavin Institute in St Petersburg to learn Russian
 - reading Biological Natural Sciences to work at Forensic Access Ltd
 - reading Biological Natural Sciences to work on a marine conservation and research placement with Archipelagos in Greece
 - reading Physical Natural Sciences to teach English with IVSC China
 - reading Natural Sciences to work at the Magnesium Innovation Centre near Hamburg
 - reading Engineering to work on a new vessel building project at Tsurumi shipyard, Yokohama, with Swire Pacific Offshore
 - reading Engineering to work for SAIC Motor UK
 - reading Physics to work at the Potsdam Institute for Climate Impact Research
 - reading Chemistry to carry out research at the University of Lisbon into psychoactive drugs
 - reading Engineering to work with Airbus Helicopters Deutschland
 - reading Physics to carry out research at the Max Planck Institute for Gravitational Physics in Hannover



FUNDS RAISED Donations 1 June 2014 to 31 May 2015

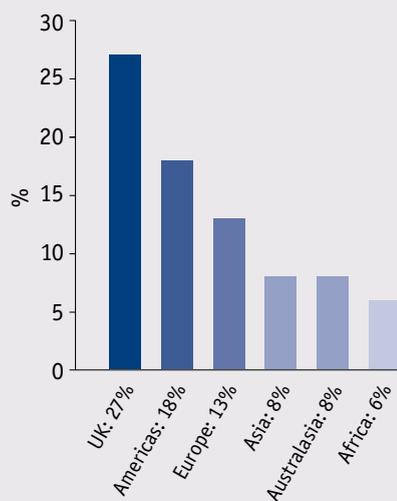
Donations received and receivable	£4 744 002
Gifts in kind	£60 762 ¹
Legacies pledged	£1 285 000

1. Fees not charged for managing part of the College's investment portfolio, baby grand piano, hosting of events and recording by the Chapel choir

HARDSHIP FUNDS & RENT BURSARIES 2013-14

188 grants
£143 977 awarded
£93 577 available from hardship funds, balance from the endowment
£20 – £4000 is the range of grant per person

PARTICIPATION RATE BY REGION



NUMBER OF GIFTS RECEIVED

(average donation for gifts under £10 000 is £309)

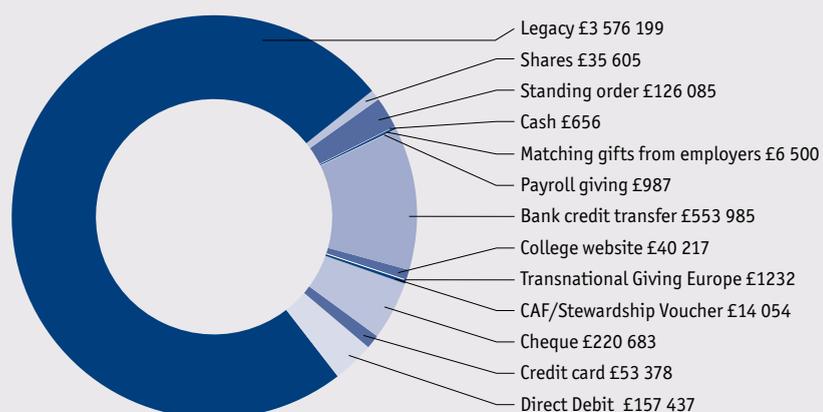
Up to £99	523
£100-£249	558
£250-£499	384
£500-£999	138
£1 000-£4 999	90
£5 000-£9 999	6
£10 000-£49 999	13
£50 000-£99 999	2
£100 000-£499 999	3
£500 000-£999 999	1
£1 000 000-£4 999 999	2

FUNDS RECEIVED 1 June 2014 to 31 May 2015

Buildings, facilities & grounds	£590 811 ¹
College future development	£2 026 923
Library	£129 223 ²
Student activities	£219 449 ³
Student support, hardship & access	£143 596 ⁴
Studentships & scholarships	£1 632 603 ⁵
Teaching & research	£44 413 ⁶
Total	£4 787 018

1. Includes refurbishment of staircases in North Court, conservation statement and buildings in Park Terrace
2. Includes legacy from Pauline Hunter Blair, which will establish a Hunter Blair Fund for the Archives
3. Includes donations to the Emmanuel College Boat Club Association, for the Performing Arts Fund, for College music and the Chapel choir, for reading in the Chapel, for sport, and for students undertaking charitable works or unpaid placements in the vacation
4. Includes donations to the Late Eighties Fund and support for students with disabilities
5. Includes Lord Northfield scholarship for a student from the West Indies, students from New Zealand, Derek Brewer research studentships and fund in medieval English, and John Clarke medical prize
6. Includes Odgers and David Williams Funds to support the study of Law at Emmanuel, Mead Fellowship in Economics and teaching of History

SOURCES OF FUNDS RECEIVED 1 JUNE 2014 TO 31 MAY 2015



DONATING THROUGH CARD AID

It is possible to send Christmas cards (both hard copy and electronic) to support Emmanuel through Card Aid. Visit www.cardaid.co.uk for further details, or contact the Development Office if you have any questions. Please give our charity number, 1137456

TAX

Emmanuel College is a registered charity, number 1137456

The Development Office can advise on tax-deductible giving through, for example, Gift Aid, charity cheques, gifts of shares, payroll giving, legacies and nominating Emmanuel as a beneficiary from an 'alternatively secured pension'



EMMANUEL SOCIETY

Every Member of Emmanuel is also a member of the Emmanuel Society, which promotes links between Members and encourages their continuing interest in and involvement with the College. This includes strengthening connections between current Junior Members and those who have graduated.

The Society organises a wide range of events. They are publicised in the thrice-yearly *Emmanuel Society News*, in a monthly e-news and other occasional emails, and are listed on the website www.emma.cam.ac.uk/members/events. Members are warmly welcome to attend any events that interest them and the Committee is always very pleased to have suggestions of new ones.

Amongst recent events the Society has organised two careers evenings for current students; a history day in College and talks by Lord Puttnam, Richard Mabey and Emily Wise; a carol service in London; a visit to Wotton House; a meeting with the CEO of YouGov; a get-together for those half-way between College Gatherings (matric. 1988–90 and 1996–98); days of cricket and golf; and meals overseas in Chicago and Zurich.

Fundraising is not part of the Society's remit and none takes place at any of its activities. The Emmanuel Society Office is, however, part of the Development Office and can be reached at emmanuel-society@emma.cam.ac.uk, tel 00 44 1223 762792, fax 00 44 1223 762793.



Sarah Bendall



Keith Heppell

Above: We were very privileged to have a private visit to Wotton House near Aylesbury, with tours both of the interiors (designed by Sir John Soane) and the grounds (laid out by Capability Brown) **Below:** Stefan Shakespeare, CEO of YouGov, gave a fascinating talk about entrepreneurship to the Emma Business Forum

EMMANUEL ONLINE

Please make sure the Development Office has your email address, so that you can receive email newsletters from both the College and the Emmanuel Society.

Become a friend of Emma Cambridge on **Facebook**: a closed page with much more activity than the public fan page. There is also a group for Members who live in the USA, found by searching for Emmanuel in America.

The College has a group on **LinkedIn** (search for Emmanuel College) and can be followed on **Twitter** (follow EmmaCambridge).



VISITING EMMANUEL

All Members of MA status are invited to dine up to twice a year at High Table as guests of the College. They may bring a guest at their own expense. A booking form is available from the Development Office and www.emma.cam.ac.uk/dining.

The College has simple student guest rooms with shared facilities, which are available for booking by Members at www.emma.cam.ac.uk/guestrooms or by telephoning 00 44 1223 334255.

The College welcomes private bookings of its rooms for meetings, meals and conferences. Please contact conferences@emma.cam.ac.uk or telephone 00 44 1223 762099, or fax 00 44 1223 762547.

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www.emma.cam.ac.uk

Development Office
development-office@emma.cam.ac.uk
tel 00 44 1223 330476
fax 00 44 1223 762793



INSIDE: THE KITCHENS

MATT CARTER – HEAD CHEF

The kitchen brigade are very fortunate to be able to cook in an environment where food plays a central role

After cooking at Emmanuel for the last 22 years the challenges change but the aim is the same: to give every diner the best experience we can. To do this I have a very talented team of nine chefs and six kitchen porters who, with the 12 permanent front-of-house staff, take a great pride in providing a wide range of meals, from the student cafeteria to Formal Hall or a Fellows' Guest Night. The kitchen brigade are very fortunate to be able to cook in an environment where food plays a central role and is much appreciated by everyone.



Choosing cheese for the Parlour after High Table dinner is never a problem when I have this amount of choice



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