DARWIN COLLEGE
CAMBRIDGE

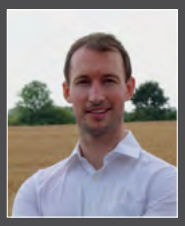
WINTER
2018/19

THE Darwinian

From the ends of chromosomes to the food of the future: outstanding research by Darwinians

Nobel Laureate and Alumna Elizabeth Blackburn is interviewed by Ron Laskey

Possibility of vaccine for Ebola



Sustainable food of the future

News for the Darwin College Community

A Message from Mary Fowler
Master

2018 has been a year of extremes, February and March saw biting cold wind and rain for many weeks – the so called 'Beast from the East'. But then came the summer when the weeks of hot sun searing down upon us meant that the Darwin gardens were parched, with grass like straw. Relax, it's green again now.

Despite this year's intemperate weather, Darwin, our students and Fellows have benefitted from and flourished within our strong community of scholars. Students and Fellows appreciate the diversity of disciplines and cultures represented here in our friendly, welcoming and informal College.

Reading through this newsletter what becomes apparent (and possibly surprising) is that a place the size of Darwin has, and is having, such an impact on the wider world. And what is documented here is only the tip of the iceberg. Darwin over its short 54-year existence has produced alumni and Fellows who have, through their research and business acumen,

"Reading through this newsletter what becomes apparent (and possibly surprising) is that a place the size of Darwin has, and is having, such an impact on the wider world."

changed the world for the better. I am thrilled to be part of it.

This term began with a real highlight: we were so pleased that Darwin alumna Elizabeth Blackburn, one of our eight Nobel laureates, visited College. Liz had a busy time here, she was inducted as an Honorary Fellow of Darwin, and met with current biological and biomedical students and post docs. Plus she was interviewed about her life and work by Emeritus Fellow Ron Laskey (see page four).

During the last twelve months I have visited alumni in New York, Washington, Christchurch, Wellington, Auckland, Hong Kong, Singapore and Kuala Lumpur. As always, meeting Darwinians is such a great pleasure, wherever the location and whatever the venue.

We were very fortunate in being able to schedule the Hong Kong reunion to coincide with our Vice-Master Professor Martin Jones' public Joseph Needham Memorial Lecture *'Food Globalization in Prehistory'* in Hong Kong Central Library. Martin has just retired after 6 years as Vice-Master – he was untiring in his support of the College and I am very grateful to him (see page eleven).

My New Zealand visit was scheduled around the opening of a new integrated science building at the University of Canterbury by Prime Minister Jacinda Ardern. We gave her a Darwin College teddy bear (the version wearing a dark blue sweater, that being closest to 'All Black') for her baby. The reunion in Wellington was particularly memorable as I flew from Christchurch in the morning, leaving there just before a major cyclone caused closure of the airport, and arriving in Wellington just before that airport was also closed. Schools and businesses closed, BUT Darwinians are resilient – on that really wet and windy evening in an almost completely deserted Wellington a group of Dawinians met and talked and talked...

One of the great pleasures of the year was visiting the University of Leeds to attend the ceremony investing Darwin Fellow, Dame Jane Francis as Chancellor of that University. It is a much deserved honour for Jane who is Director of the British Antarctic Survey and an exceptional scientist. Once installed, Jane conferred

several honorary degrees. It was a pleasure to be one of the recipients, another delight to accompany the similar degree given to me in Edinburgh the week before.

Nearer to home, the refurbishment of the Old Granary is almost complete and eight lucky students should be moving in as you read this. Over the last year the building has been sympathetically renovated and restored inside and out. Phase two is the completion of the new multi-purpose Bradfield Room. The shell of the building is in place and all that remains is for the roof and interior to be finished. We anticipate that it will be ready in the early spring. Around Easter next year we will invite our donors to the Grand Opening Ceremony - the Alumni and Development Office will keep you posted.

In January there is of course, the annual Lent Term Darwin College Lecture Series to look forward to. The 2019 Series is entitled 'Visions'. We have eight eclectic lectures for you to share in, whether in the auditorium or watching afterwards online. The full programme is on the reverse of the newsletter, and I hope to meet many of you there.

After the Lecture Series finishes, I plan to travel to Beijing and Tokyo, and along with our Development Director Samuel Venn, am looking forward to meeting with alumni and hearing about how Darwinians are impacting that area of the world. Plans are embryonic at this stage, but I am excited about the trip and to hosting events there.

My very best wishes for a peaceful and happy New Year.

Left:
Mary with the Prime Minister of New Zealand, Jacinda Ardern, who is holding Ernest Rutherford's Nobel Prize.

Above:
Mary receiving her Honorary Degree from Jane Francis, University of Leeds.

From Graduate Student to Honorary Fellow, Elizabeth Blackburn

Nobel Laureate in Physiology or Medicine

An Interview by Ron Laskey

Elizabeth Blackburn was a Graduate Student at Darwin 1972-1975. She received the Nobel Prize in Physiology or Medicine in 2009, together with Carol Greider and Jack Szostak for their discovery of how the ends of chromosomes are protected by telomeres and the enzyme that makes them, telomerase.

Ron: Welcome back to Cambridge.

Liz: It's good to be here.

Ron: Obviously one question that Darwin students would like to know is what was it like to be in Darwin back in the 1970s?

Liz: Well it was a good place to be because, as a PhD student, it was exactly what I wanted. A college all about the life of PhD students and I was at the stage when I didn't want to be in an undergraduate college because I was beyond that kind of thing. Darwin was very international; it was very informal; it was friendly and it was in the right place. I enjoyed the interactions and the time that I had here because it was so much geared toward exactly the situation I was in, a PhD student who had come from Australia, immersed in the research of Cambridge and just needing another home besides the research lab.

Ron: I think you just encapsulated what appeals to many of us about Darwin.

Liz: Good! So being a student at Darwin College I had a room in the Old Granary and I remember just thinking I had died and gone to heaven, because you looked out on this mill pond, still a very beautiful, bucolic landscape. You know you're in Cambridge and you're looking at trees and grass and it's extremely lovely and you just hear the ducks every morning when you wake up. To this day I can conjure up this sound of those ducks down on the water. It was a pleasant room and it seemed inordinately large to me. I don't know why; it wasn't a very high

room but it somehow seemed very spacious. It was quite a lovely place to be. To have a room like that as a student, as I said I thought I had died and gone to heaven.

Ron: But you also had another rather special place for your PhD, the MRC Laboratory of Molecular Biology, the LMB. How did that feel?

Liz: Yes, I think the LMB was all about research and that thrilled me because I had learned that was what I really loved to do. I was in the research group of Fred Sanger and Fred had a very informal way of encouraging you to be hands on very quickly and then to let you find your way. I felt at home very quickly. I had found two places where I could feel comfortable as a student.

Ron: How does it feel to look back to those times now when your project was to determine a very small part of the DNA sequence of a small bacterial virus, whereas now whole large genomes can be churned out in a very short time?

Liz: Well you know it's laughable how embryonic this was, but it was opening up a way of thinking about the genome. You had a feeling that you were on a new frontier. Already the idea that you could ask a question in different ways, because suddenly you had new information that nobody had ever had, was incredibly heady. I hope that that's what scientists feel now as they have new ways of dealing with hitherto inaccessible knowledge and information.

Ron: Just the fact that any sequence information could be derived from DNA at that time must itself have been exciting.

Liz: Yes, and it was intellectually pleasing because I remember the day when there was someone deriving amino acid sequences of a protein very directly, others in Fred's group, including my (future) husband, looking at the DNA sequence and I was copying DNA into RNA because there were well established ways of getting sequences pieced together with RNA. When the three lined up it was like: the central dogma works: phew!

Ron: And what was Fred Sanger like to work with?

Liz: Well Fred was really the perfect advisor for my temperament. It helped that all his group were exploring various ways of getting DNA sequences and that he was doing it himself in the way that became the Sanger sequencing method. The atmosphere was to just ask anybody anything, including Fred. And if I had a gel that looked peculiar I would show it to Fred and ask what did he think. It was a remarkably un-hierarchical culture, which I think from my colonial view point I appreciated a lot. Yet everybody worked really hard and there was a culture of having long hours in the lab. Interestingly, Fred wasn't one prone to extensive discussions as Francis Crick and Sidney Brenner were. He just liked you to get your hands on the experimental material. I remember when I first arrived I said: "Fred, well I suppose I should be doing a lot of reading" and he said, "Well I'll show you how to use this little capillary and you can pick little spots out to solubilise oligonucleotides". So, he just dived right into the experimental material and I related very well to that.

Ron: After you left the LMB you went to work with someone else who has a very special reputation as a mentor and as a superb scientist, namely Joe Gall.

Liz: Yes, this was Joe Gall at Yale and he became known because several of his women trainees had done very well scientifically in academic research. This was an influence in my applying to work with him. I had heard that he was not only a good scientist, but he was also a good person to work with. And Joe again let me really develop as a scientist by just running with the problem of trying to understand DNA sequences at the ends of very small chromosomes in the model system that I was using, a single celled organism called *Tetrahymena*.

Ron: Your choice of *Tetrahymena* ribosomal DNA, where there are additional linear copies with ends on the molecules that you can study was profoundly….

Liz: Lucky!

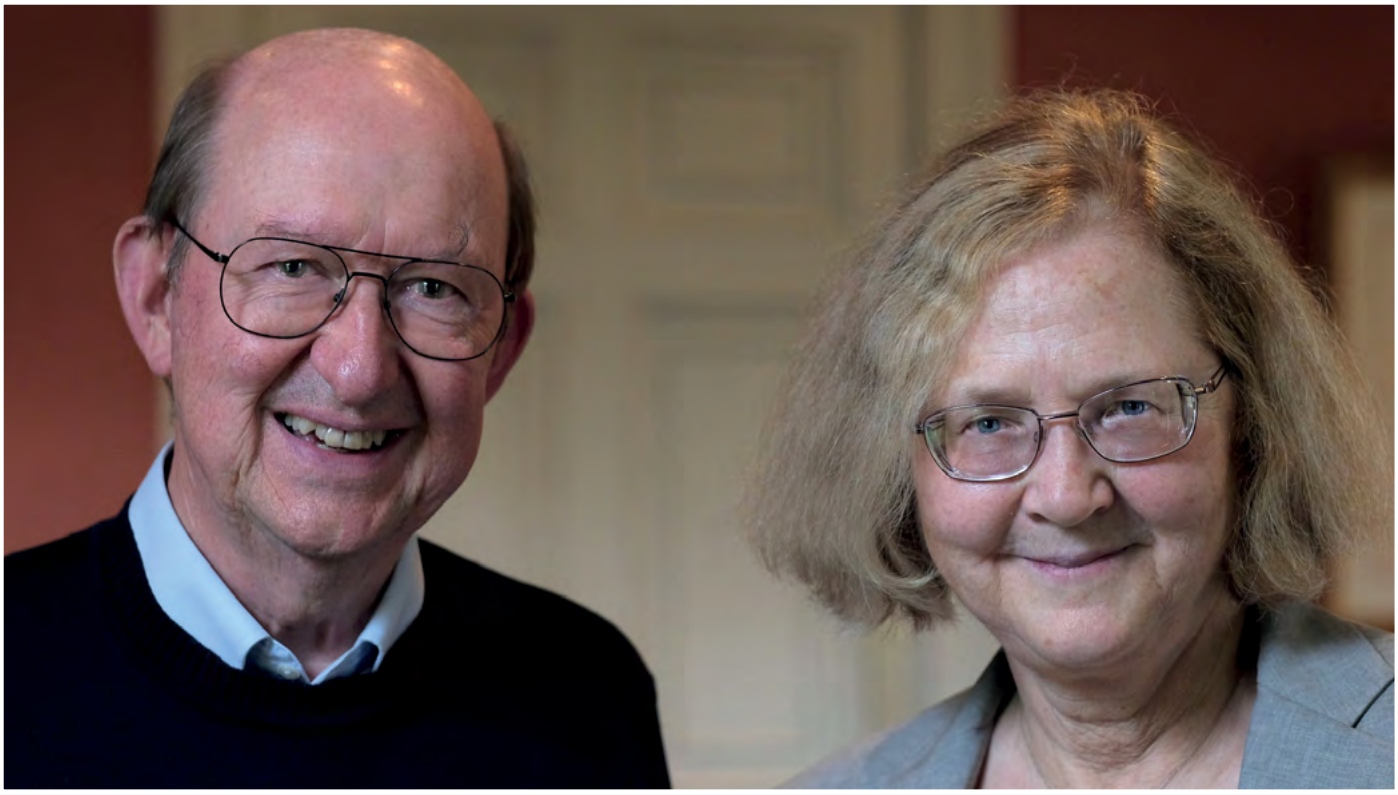
Ron: I wouldn't have said lucky; I would have said a very good choice.

Liz: Joe Gall had been fascinated by genes that get into higher copy numbers, amplified as it is called. Using electron microscopy, he had recently found that the amplified ribosomal RNA genes in *Tetrahymena* were linear molecules, uniform in size and present in about 10,000 copies of these per single cell. So, you know that's as good as virus in terms of a very high copy number.

Ron: At what stage did you choose telomeres, the ends of the chromosomes, as your target?

Liz: I chose them because this was before DNA cloning had begun and I thought how do you get a sequence of something? Either you chop it in little pieces and purify it, and that's what was done for the bacteriophage genomes, or you cleverly started in one place, but where were the landmarks in the ribosomal RNA genes? The only places you could approach were the ends, and from day one it was like: "Wow! something very different is going on there. This is not what virus ends look like". So that was great fun because it was immediately interesting.

Opposite:
Elizabeth Blackburn.
Photo credit: Sir Cam



Above:
Ron Laskey and Elizabeth Blackburn.
Photo credit: Sir Cam

Ron: What was the clue, that told you that this is fundamentally different, that there is a specialised structure at the ends of the chromosomes?

Liz: There were two things. People were just beginning to use restriction enzymes to cut DNA into small enough pieces for me to say that all the molecules in the population were identical inside, but the ones at the end had a blurry look to them. In other words, the population of molecules have different lengths at the end. The second was when I started radioactively labelling these molecules, asking enzymes to copy the DNA at the ends and see what sequences became labelled up. Immediately the signals for seeing the fragments that you could put together were irrationally strong and that said that there had to be repeated DNA sequences out there and it was quite a job working that out, so I spent my postdoc piecing these together.

Ron: At what point in the story did you move to California?

Liz: After I'd finished my postdoc, a paper was sent in about finding this repeated sequence at the ends of these little tiny chromosomes. And then I just had to job hunt, and my (by then) husband John Sedat and I put ourselves on the job market. Everyone thinks it's very easy, but I have a pile of rejection letters somewhere. Then John was offered a job at the University of California San Francisco, at an up and coming department of biochemistry, and I applied for a job at Berkeley but they just said we're on hold. Then they opened up the search again because they got funding and I got the job, so I started in the middle of '78 at the University of California, Berkeley, having been 6 months at the University of California, San Francisco. So, in some ways the system was more forgiving, but in other ways we definitely had to....

Ron: Make sacrifices....

Liz: Well I didn't think of it as making sacrifices but it wasn't as if it fell into our laps. We had a lot of rejection letters so it wasn't like we could just get the first job we wanted.

Ron: And at which point did you discover telomerase, the enzyme that makes the ends of chromosomes?

Liz: That was all at Berkeley. In the early 1980s I started to suspect that there might be an enzymatic activity so thought go for *Tetrahymena* because it has a lot of telomeres and I grew vats and vats of *Tetrahymena*. I had learned that from Joe Gall who'd always said: "If you have a biological question the principles may be general, but find a system where it's experimentally amenable". I really learned that from that postdoctoral experience.

Ron: The discovery that telomerase had an RNA template component must have been immensely exciting. I remember it was exciting to people that weren't working on it, so what must it have been like for you?

Liz: Yes, well most people thought it was weird in *Tetrahymena* and they could ignore it, so that was good for us because we could just do it. First, there was an enzymatic activity that was making a DNA sequence, not a very long one, a repeat of 6 nucleotides but still putting them in sequence. So, Carol (Greider) and I worked very much with "Oh my God, what about this artefact?" and "Oh my God, this could all be just something uninteresting". Then we would try and think of an experiment, so gradually we homed in on "It's going to be hard to explain this one away".

Ron: And that was the time at which you got the gel with this spectacular ladder of bands…

Liz: That was an early result that said there was something you could get your hands on now. Before, I'd seen some products getting a little bit longer and at very low resolution but once they were run on a DNA sequencing gel that then spread it out. So, it worked well that you could get high resolution and visualise it. When Carol saw this she realised, and showed me next day and I realised, this is good.

Ron: And you then did a beautiful series of experiments in which you showed that changing the sequence of the template changed the sequence of the telomeres, which was a clincher.

Liz: Yes, well I'd done this with Jack Szostak in a lovely experiment where we did this crazy thing. We said if we put a *Tetrahymena* telomere onto the end of a linear plasmid in yeast would that now stabilise that linear plasmid in yeast. When we did this, we said: "Well let's see what's added on to the ends" and the ends got longer and it was yeast telomeric repeats. First, Carol and I thought a lovely reciprocal would be to give a yeast primer to *Tetrahymena* and that pleased us a lot and convinced us that this was a biologically real enzyme. Then, my student Guo-Liang Yu actually changed the template itself in the RNA and that proved telomerase really copied it into DNA.

Ron: So how long was it after you found telomeres and telomerase that you received the information that you were being awarded the Nobel Prize in Physiology or Medicine?

Liz: That was October 2009 and I suppose the very first sequence of *Tetrahymena,* which certainly didn't look very physiology or medicine related, was 1978 and then we published telomerase but, first of all, from the model system. The yeast and telomerase work was done in the 80s. Work on telomeres and telomerase in yeast and *Tetrahymena* was going back and forth between the systems in the 80s so that's a few decades. The interest in humans started to emerge from a lot of different converging and not so converging interests. People started looking for telomerase enzymatic activity and we had a good assay system for it. It wasn't lost on people that cancer cells keep replicating and so quite quickly people started finding enzymatic activity in cancer cell extracts and then it was realised that of course normal cells actually do have to maintain ends to some degree. It turned out that in humans it's enormously nuanced and specific for tissue type and developmental stage.

Ron: Did you have any suspicion that it was going to turn out like that at the time?

Liz: None at all! I mean the only thing was that when we knocked out telomerase activity by making a rather surgical mutation in the RNA, by accident of course, in *Tetrahymena,* we did see something that we said we're going to call 'senescence' because it was clear that there was not an instant problem and then cells progressed for a while and the telomeres got shorter, but that was in a model system and there was nothing that linearly extrapolated into whole mammals. It's great fun when fields are growing and you are just in very exciting stages of never knowing ….

Ron: You must have had a certain amount of satisfaction from the knowledge that you actually started the field.

Liz: Well I was too busy to have satisfaction. You're immersed and you don't really think about that, so I was just constantly doing science and then later when people started giving awards I thought: "Yes, this is great to have been able to do something where you learn something". Then lots of work done by many others has expanded it into different kinds of questions but we certainly didn't initially think: "How will this play out in humans?" We just really didn't know.

Ron: Thank you so much for coming back and talking to us and congratulations on becoming an Honorary Fellow of your old College, Darwin.

From the Development and Alumni Relations Office

"Darwin College is one of the most welcoming places to be a student. I have found nothing but friendliness and helpfulness since I arrived."

This comment is from a new student to Derek our Head Porter. It echoes what we are trying to achieve in the Development and Alumni Relations Office: we aim to emulate the community feeling within College to our wider alumni body. We always welcome your comments and try to act on them wherever we can.

This year we have held events not only in Cambridge, but also in New Zealand, London, Hong Kong, Kuala Lumpur and Singapore. Our Development Director Samuel Venn will be in New York in December and hopes to see many alumni at a dinner he will host.

Events for 2019 are beginning to take shape, and it looks to be an exciting year, with dinners in Beijing, Shanghai, Tokyo and Athens already in the diary. 2019 is also the Darwin College Boat Club's 50th Anniversary and they are planning an extravaganza of celebrations on July 6 2019. All alumni are very welcome to attend, and we hope to see many of you there!

Of course, an important part of the remit of the Development Office is fundraising. This year we have focussed on two areas.

The first is to raise money to increase the amount of funds available to students facing hardship due to unexpected emergencies. I am pleased to report that in 2016-2018 **51 students received emergency funding** of between £25 and £2,000, and next year, with your help we should be able to help more students in adverse circumstances.

The second area is Studentships, funding has become increasingly scarcer for graduate students, and many Darwin students spend much of their time applying for funds and getting nowhere. We are therefore working towards providing scholarships for students to study at Darwin by increasing the number we have available to those who cannot afford to fund their graduate studies. **The brightest students should have the opportunity to study at Cambridge, not limited by their ability to pay.**

Thank you to everyone who has donated in the past year. Here is where you asked for your gifts to be allocated and the money received to date:

Gifts by fund July 2017–June 2018

Bradfield Court	£44,606
Building and Grounds	£35,966
David McKay Fellowship	£744
Lecture Series	£10,737
Patrick Sissons Fellowship	£10,017
Philosophy Fund	£2,332
Student Support and Studentships	£62,171
Where most needed	£149,483

Thanks to a legacy gift from a US alumna, we have put one studentship in place this year. The College is happy to announce that for 2019-20 entry Darwin is offering a new **David Ellar/BBSRC Scholarship**. The scholarship is named in honour of the legator's PhD supervisor and has been match funded by the *Biotechnology and Biological Sciences Council*. It will cover the cost of the University tuition fees and an annual maintenance stipend for four years. We are grateful to her forward planning and her memory will be honoured through this scholarship for years to come.

You may well have noticed that the GDPR (General Data Protection Regulations) came into force

Below
The Master with alumni at the Reunion Dinner in Hong Kong

in May. GDPR is a regulation that covers privacy for all individuals within the European Union and the European Economic Area. It also addresses the export of personal data outside the EU and EEA areas. Primarily its aims are to give control to individuals over their personal data and to simplify the regulatory environment for businesses by unifying the regulation within the EU.

Darwin College has a Data Protection Statement specifically for our alumni and supporters which outlines our policy on how we look after your data. You can find it by going to: darwin.cam.ac.uk/alumni/data-protection.

Finally, if you are visiting Cambridge, please do call into Darwin: alumni are always welcome to visit the College! You can come in for cafeteria meals and pay with a normal bank card, and you can book into formal dinners, and reserve College punts, by contacting the Alumni Office.

The Development and Alumni Relations Team consists of:

Samuel Venn, Development Director
Development.director@darwin.cam.ac.uk
Sophia Smith, Deputy Development Director
Development.office@darwin.cam.ac.uk
Eleanor Collingwood, Alumni Officer
Alumni.relations@darwin.cam.ac.uk

Patrick Sissons Fellows

Following donations received from alumni and friends of Darwin, as well as the Evelyn Trust's generous commitment to funding three years of a Research Fellowship in honour of Professor Sir Patrick Sissons, we elected **Dr Iosifina Foskolou** as Patrick Sissons Evelyn Trust Research Fellow. Iosifina joined Darwin in October 2018, and is working on the role of low-oxygen (hypoxia) inducible metabolites in cancer immunology. She undertook her DPhil studies at the Department of Oncology at Oxford University, where she investigated the DNA replication stress induced by hypoxia and was funded by a CRUK Oxford Centre DPhil Prize Studentship. To ensure that Patrick's name continues to be associated with research in medicine (particularly immunology), we are seeking further donations to fund the Research Fellowship, either by annual funding after the initial three years, or by finding the endowment capital sum.

Funding received by the Clinical School in Cambridge has enabled Darwin to appoint a Professorial Fellow, who will also be known as a Sissons Fellow: **Professor James Rowe.** James is a neuroscientist and a cognitive neurologist, and leads a major research programme into Parkinson's-plus diseases in Cambridge. He became Professor of Cognitive Neurology at the University of Cambridge in 2015, and he is also an affiliated Professor of Clinical Neuroscience at the University of Copenhagen in Denmark. He is an active consultant neurologist, leading regional specialist clinics for patients with early dementia, frontotemporal dementia, Progressive Supranuclear Palsy, and other 'tauopathies'.

News from the Fellows

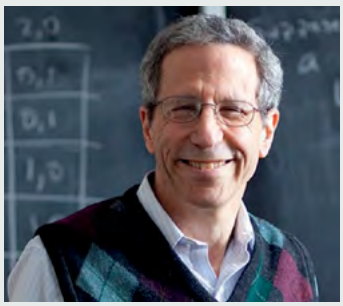
Two new University Chancellors

Honorary Fellow and Darwin alumna **Professor Dame Jean Thomas** was invested as Chancellor of Swansea University in January. She succeeds former first minister of Wales, Rhodri Morgan, who was chancellor from 2011 until his death in 2017. She said it was an honour to serve the University she graduated from *"many years ago"*. She is looking forward to being part of the University's *"exciting ambition"* in the run up to its centenary year in 2020.

College Fellow **Professor Dame Jane Francis** was invested as Chancellor of Leeds University in June. She succeeds Melvin Bragg. She has strong ties with the University, with a 22-year career at Leeds before joining the British Antarctic Survey, where she has been Director since 2013. Jane said: *"I loved my time at Leeds and feel truly honoured to be back as Chancellor. Helping to inspire passion and achievement is what excites me in my work, and in this role I hope to be able to do just that."*

Following Jane Francis's investiture, she had the pleasure of giving **Professor Mary Fowler**, Master of Darwin College, an Honorary Doctorate of Science for her contribution to the study of Geophysics. Mary had been similarly honoured with an Honorary Doctorate in Science from the University of Edinburgh (pictured) just a few days previously.

Two New Honorary Fellows for Darwin



This year, **Professor Elizabeth Blackburn** and **Professor Eric Maskin**, both Nobel Prize winners and both with Honorary Doctorates from Cambridge University, were elected as Honorary Fellows of the College. Elizabeth is an alumna of the College, having graduated with a PhD in Biology in 1975. A full interview with her about her research and its consequences on longevity is on page four of this newsletter.

Eric Maskin carried out research in Cambridge while a visiting student from Harvard in 1975-6. He was resident at Darwin during that time, and remembers fondly his time in the Old Granary. *"For whatever reason – the dazzling first impression Cambridge made on me, the colourful and eccentric characters I encountered, or perhaps just because I was young – that initial Cambridge sojourn has the rosiest glow of all in my memory."*

Nobel Prize Win

We are pleased to announce that **Professor Sir Gregory Winter**, Master of Trinity College and Honorary Fellow of Darwin College, was jointly awarded this year's Nobel Prize for Chemistry. Shared with Frances Arnold and George Smith, the prize was awarded for their work in harnessing evolution to produce new enzymes and antibodies; their work has led to the development of new fuels and pharmaceuticals by making use of nature's evolutionary processes themselves, leading to medical and environmental advances.

This win means that Darwin now has a tally of **eight Nobel Laureates**, which is a remarkable achievement for a College which is only 54 years old.

Above, left to right: Alan Fersht, Gregory Winter, Mary Fowler and Christopher Dobson.

Retirement of Martin Jones, a much-loved Vice-Master

Professor Martin Jones has retired as College Vice-Master. He was elected a Fellow of Darwin in 2002 and became Vice-Master in 2012. Martin was until retirement the George Pitt-Rivers Professor of Archaeological Science, and is particularly interested in the archaeology of food. His work focused on the spread of farming across Asia, food sharing in the Upper Palaeolithic and the development of agrarian societies and their food economies in later prehistory and historic periods.

In July of this year, Martin was elected as a Fellow of the British Academy in recognition of his work in the field of archaeobotany.

On his retirement his colleagues at the Department of Archaeology looked for something appropriate to present to him. The answer was a limited edition beer named in his honour! This collaborative beer was brewed with Professor Jones and some of his colleagues, at Milton Brewery, and was launched at the Cambridge Beer Festival in May. It is named after the Roman festival Cerealia – in honour of the goddess of agriculture and fertility.

He is now an Emeritus Fellow of Darwin, and we wish him all the best in his retirement.

Richard Henderson appointed Companion of Honour

Nobel Laureate and Emeritus Fellow of Darwin **Professor Richard Henderson** was appointed a Companion of Honour in the Queen's Birthday Honours 2018.

Ron Laskey awarded an Honorary Doctorate

In early October Emeritus Fellow **Professor Ron Laskey** was awarded an Honoris Causa Doctorate from Montpellier University in France.

Dr Jan Löwe appointed Director of the Laboratory of Molecular Biology

Darwin Fellow, **Dr Jan Löwe**, was appointed as Director of the MRC Laboratory of Molecular Biology (LMB) earlier this year. Jan became a Fellow of Darwin College in 2012, and was previously the joint head of the Structural Studies Division at the LMB, and Deputy Director of the Institute.

Founded in 1962, the LMB is a multi-disciplinary research institute dedicated to the understanding of important biological processes at the levels of atoms, molecules, cells and organisms, towards solving key problems in human health. Scientists at the LMB tackle difficult long-term research problems and have made revolutionary contributions to science – such as in the sequencing of DNA and pioneering the method of X-ray crystallography to determine protein structure.

Jan said on his appointment: *"Not in my wildest dreams would I have thought in 1996 when I came here that I would one day be the director of this great institute. Being given such an important job makes me feel both excited and humbled. I will aim to preserve and develop LMB's very special culture and people, so that new ideas keep the LMB at the forefront of molecular biology, where it belongs."*

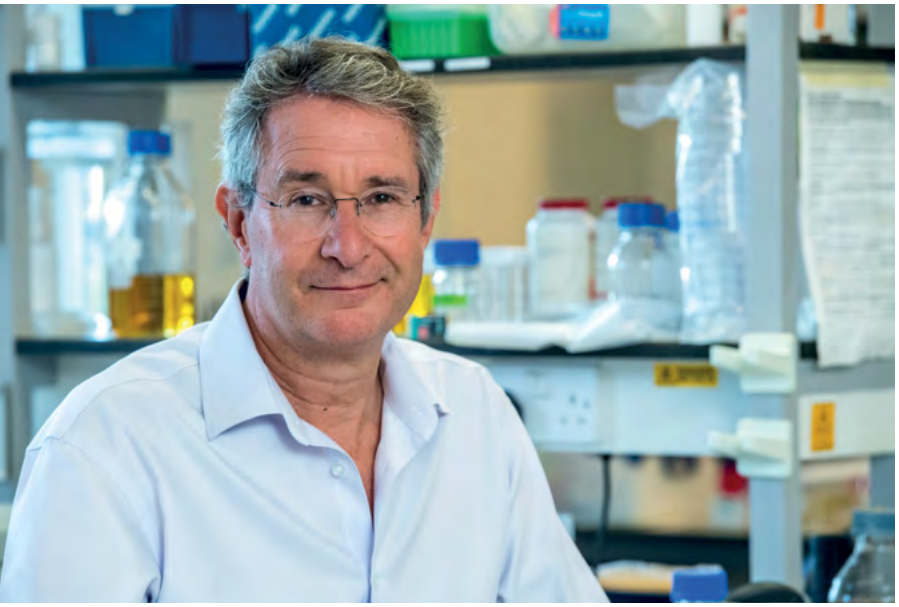
Darwin College has had a long and distinguished list of Fellows, Honorary Fellows, and alumni who have been associated with the LMB, including four Nobel Laureates: Max Perutz, Richard Henderson, César Milstein, and Elizabeth Blackburn.

Distinguished Associate Jill Kerr Conway

The College is sad to report the passing of Australian-American scholar and author **Jill Kerr Conway**, who died in June 2018. Well known for her autobiographies, in particular her first memoir The Road from Coorain, she was also Smith College's first woman president and most recently served as a visiting professor at the Massachusetts Institute of Technology.

Zoonotics: viruses crossing species

Professor Jonathan Heeney is a Fellow of Darwin College and has recently taken up the position of joint Vice-Master following the retirement of Martin Jones. Jonathan established The Lab of Viral Zoonotics (LVZ) in the Department of Veterinary Medicine at Cambridge. He and his team are developing an all-in-one vaccine for some of the deadliest viruses known – Ebola, Lassa and Murburg viruses.



Above:
Jonathan Heeney has founded DIOSynVax Ltd, a new Cambridge start-up to make a new generation of vaccines to prevent epidemics like Ebola in the developing world.

'Zoonotics' is defined as the transference of an infection from animals to humans. Unfortunately, there have been many high profile examples of such outbreaks in the last thirty years – HIV, avian flu, swine flu and more recently Ebola, Lassa and Marburg viruses. All have high mortality rates. Outbreaks cause devastating local epidemics in the human population and to wildlife. They also have the potential to create havoc to the infrastructure and economies of the epidemic area.

Jonathan and his team of dedicated scientists take particular interest in retroviruses. Once a retrovirus has infected a cell, its RNA genome is replicated, or 'reverse transcribed', into DNA and is copied every time the infected cell divides. Often this happens slowly and can sometimes go unnoticed for many years. This 'silent' disease can often take the medical community by surprise with the scale of the infection locally, and subsequently causes worries about a global outbreak.

Ebola, Lassa and Marburg are RNA viruses without a DNA intermediate, and each of these diseases have raised concerns amongst health professionals about how to contain 'surprise' occurrences and prevent potentially devastating global pandemics.

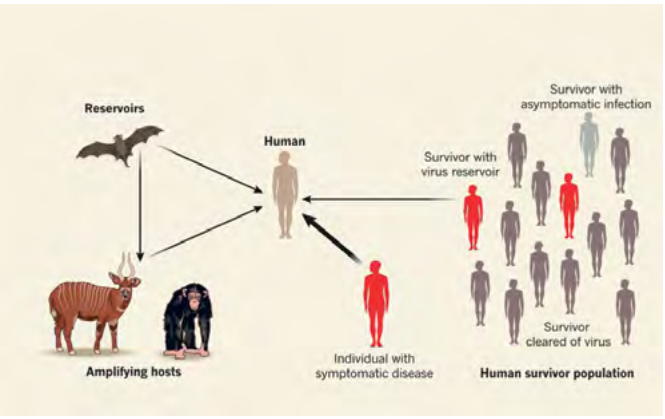
In recent Ebola outbreaks WHO (The World Health Organisation) has tried to contain the epidemic by 'ring vaccination' – a methodology developed by veterinarians to contain epidemic outbreaks in livestock. Medics are now using this practice to vaccinate a ring of people at risk around each infected individual. However, this response can only be used after an outbreak, such as the ongoing Ebola outbreak in the Democratic Republic of Congo. In order to prevent future outbreaks, it is vital to understand and predict which strain of virus are most likely to cause them.

"A disproportionally high number of emerging and re-emerging diseases – from Ebola to Lassa through to rabies and influenza – are caused by RNA viruses carried naturally by animals," says Jonathan. "We know very little about the viral diversity within these reservoir species and what enables them to spread to humans – and hence where the likely future threats lie."

The Lab of Viral Zoonotics are taking a two pronged approach to fight these deadly diseases: they are researching how to predict what strain of viruses have the greatest likelihood to jump species into humans, and as a result hope to develop potential vaccines.

Jonathan has received £1.4 million from the BBSRC (Biotechnology and Biological Sciences Research Council) to do exactly this. The One Health project is cross-disciplinary with veterinarians, clinicians, ecologists, medical and public health workers in West Africa working to understand how Lassa fever becomes transmitted from indigenous rat populations to humans.

The team have already developed and successfully tested a vaccine in guinea pigs that protects against Ebola, Lassa and Marburg viruses. As a consequence, Jonathan has been awarded a further £2 million by



Above, top to bottom:
Jonathan Heeney and the Lassa Fever field team based at the African Centre of Excellence for Genomics of Infectious Diseases based in Ede Nigeria.

Members of the Lab of Viral Zoonotics (LVZ), Dept of Veterinary Medicine, in the Richard King Room.

The hypothesis that the Ebola virus may be carried in sequestered body tissues in some Human Ebola survivors, triggering new cases after the primary outbreaks are contained. Later proven to be the source of post-outbreak flare-ups of human cases. (J Heeney, Nature. 2015 Nov 26;527(7579), image courtesy of Nature)

"We've taken fundamental science that stretches back almost two decades and developed a new approach to vaccine development."

Innovate UK and the Department of Health and Social Care to take the vaccine to clinical trials in humans.

A virus's genetic code is written into its nucleic acid (either RNA or DNA), which leads to the code for the generation of proteins. When we are infected by a virus our immune system responds to these proteins, known as 'antigens', producing antibodies that can identify and try to eliminate the invading pathogen.

Jonathan has started a Cambridge spin-out company called DIOSynVax to make a new generation of vaccines. Their approach involves understanding how the immune system correctly identifies the virus from its proteins, and uses this information to create 'virus-like proteins' that can generate an immune response. Using copies of antibodies taken from survivors – they can then test whether the body can effectively eliminate these fake viruses, leading to protection.

"We've taken fundamental science that stretches back almost two decades and developed a new approach to vaccine development. This has the potential to dramatically reduce the time needed to produce new vaccines and change the way in which the industry makes them."

With the new funding the DIOSynVax team will scale up production. They will then carry out toxicity tests in animals and human blood samples to ensure the vaccines are safe; if successful, they will trial the vaccine in healthy human volunteers.

"Equipped with this information, we should be able to design Next Generation of vaccines for more effective and broad-protection from infections. Combined with our accelerated vaccine development platform, this has the potential to have an enormous positive impact on global public health."

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Sustainable Fish and Poultry Food of the Future...

Insect protein could be used to feed fish and poultry after a Cambridge company co-founded by Darwin alumnus Matt McLaren (MBA 2014) was awarded a £900,000 government grant in 2017 to further its work.

The company comprises four recent Cambridge University graduates with backgrounds in biochemistry, biology, engineering and business, and has been supported by the Cambridge Judge Entrepreneurship Centre's 'Accelerate Cambridge' programme. "It's one of those stories where we came together in a pub over a pint, talking about weird ideas," explains Matt. "The team has members from the Department of Biochemistry, from Engineering, from the Business School, so it really is a diverse skill set."

Entomics Biosystems works with the University of Stirling and the University of Reading to investigate the effectiveness of insect-derived feeds for farmed salmon. They conduct industrial research with the aim of reducing the reliance on resource intensive proteins such as fishmeal and soy, while also mitigating the use of antibiotics in the food chain, one of the causes of the increase in drug-resistant bacteria.

It has been estimated that each year over 1.3 billion tonnes of food are wasted globally – equating to around US$1 trillion of lost value. With an increasing population and modern lifestyles, the burden of food waste on society and the environment is set to increase in the future.

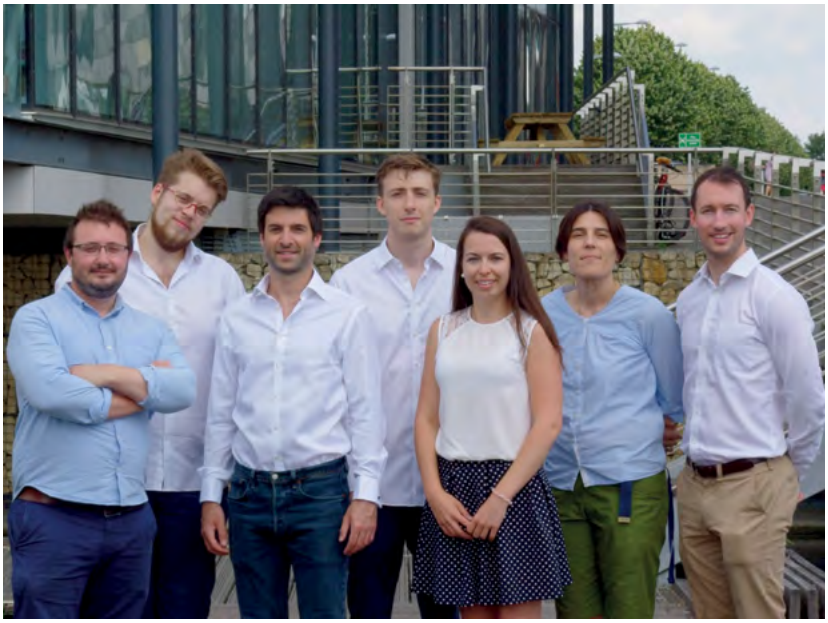
"The world's looking for more sustainable sources of feed and I think increasingly there's a recognition that it's not just about basic nutrition, but it's about overall health."

Entomics focuses on 'insect biomass conversion'. Larvae of the black soldier fly chew their way through several tonnes of food waste collected from local supermarkets and food processing plants. The insects are fed different 'recipes' under controlled conditions to see how these affect growth rates and nutritional profiles. They metabolise the food waste into fats and proteins, growing to around 5,000 times their body weight within just a couple of weeks.

As McLaren, explains, these fats and proteins "are great sources of nutrition for salmon and poultry – in fact, insects are part of their natural diet. Farmed salmon in Scotland are currently fed on fishmeal which comes from wild-caught anchovies from as far away as Chile and Peru, which are then shipped across the world to Scotland," he explains. "Insects provide a local, sustainable solution."

With support, including from Innovate UK and the European Institute of Technology, Entomics is using a novel bioprocessing technique to boost the nutritional and functional benefits of these insect-derived feeds, using a microbial fermentation technology they have termed 'Metamorphosis'. Essentially, these specialised feeds represent a sustainable, holistic approach to improving overall fish health and welfare.

"There are several benefits to this process," explains Miha Pipan, Chief Scientific Officer and fellow co-founder, "from affecting the gut's microbiome and trying to preserve a healthier bacterial community there, to training immune systems to make livestock more resistant to disease challenges and at the same time reduce the need for veterinary medicines, antibiotics and vaccines."



"The world's looking for more sustainable sources of feed and I think increasingly there's a recognition that it's not just about basic nutrition, but it's about overall health," says McLaren. "We are taking a promising, sustainable ingredient of the future – these insect-derived feeds – and adding a bit of biotechnology to really enhance what the effect is in the salmon and reduce reliance on traditional antibiotics and veterinary medicines."

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Opposite:
Matt McLaren (MBA 2014)
Above:
Salmon trials
Matt and his team at Entomics

Tidings of Joy – an ongoing conservation story

Pei Rong Cheo studied at Darwin for an MPhil in Conservation Leadership in 2017, and is now working as a conservationist leading an army of volunteers to preserve the hidden treasures of Singapore's shoreline.

"Conservation is not just about the plants and animals. It is about people too. People may cause harm, and yet they are the very ones with hopes and solutions."

Inspired by fellow Cambridge graduate Sir David Attenborough, Pei Rong set up a citizen science programme, 'Intertidal Watch', to train volunteers and national park managers to monitor marine life, raise awareness of Singapore's natural heritage, and promote conservation and sustainability.

"I'm a big fan of Sir David Attenborough," she says. "I was really motivated by a quote of his. He said; No one will protect what they don't care about, and no one will care about what they have never experienced."

"I always feel that people might become a bit detached from the sea, because they can't see what's in our murky waters especially if they can't swim or scuba dive, so I wanted to set up a programme that would give people the opportunity to be engaged with marine life."

"Singapore is located within a biodiversity hotspot. There are lots of exciting marine animals out there, you just need to know when and where to look."

During her time in Cambridge she helped to establish the Cambridge University Marine Conservation Society and organised Cambridge's first World Oceans Day event, at the David Attenborough Building, home to the Cambridge Conservation Initiative. At the event in June 2018, researchers, students and representatives of non-governmental organisations and government departments delivered a series of talks about marine life, the importance of protecting it, and their ongoing efforts to do so.

Pei Rong gave a talk about how she established Intertidal Watch in 2016, as part of the Community in Nature Initiative at the National Parks Board, Singapore (NParks). The project has grown rapidly, and now has more than 250 volunteers.

"Monitoring can be really labour intensive and expensive, so we thought it was a good chance to kill a few birds with one stone. We collect data, we engage the public, and we can use the information the volunteers have gathered to inform decisions, management actions and even, in the future, policy."

In the early stages of the project, Pei Rong was joined by park managers on the beach, sometimes as early as 3am. "I am very grateful for their support, and I think this helped me to get more volunteers, both from my organisation and the wider public."

Once the volunteers have signed up Pei Rong gives them a crash course in Singapore's marine life, so they know what they can expect to find, how to identify and monitor the different species, and the importance of accurate data recording. She also plans intertidal survey trips to coincide with spring

"Singapore is located within a biodiversity hotspot. There are lots of exciting marine animals out there, you just need to know when and where to look."

low tides, when the seagrass beds are exposed for long enough to complete a survey. At each session, the team usually have about two hours to complete their work before the tide returns, and sometimes are hard at work as early as 5.30am.

"The volunteers work really hard, and they're meticulous when they record things. It's not always smooth sailing, it can get very muddy and sometimes areas become flooded, but this is part of fieldwork and scientific research."

Pei Rong has recently returned to her position as Manager (Biodiversity) of the National Biodiversity Centre at the National Parks Board, Singapore. She hopes to see a protocol in place at each of the key intertidal sites and integrate the monitoring process into the parks' management plans.

"Monitoring only works if it is long-term," she says. "Moreover, intertidal areas are often the first areas affected by coastal development, so it's really important that we know what is in these areas, so that when an accident happens or if there are development plans, activities, or events, we are equipped with the information to conserve these areas."

Pei Rong aspires to engage more volunteers and nurture volunteer champions who can lead the field surveys. She is also in discussion with collaborators from the local polytechnics and universities on incorporating Intertidal Watch within their curricula and activities, and publishing the data collected by the citizen scientists.

Pei Rong's experience in Cambridge has given her new ideas and broadened her perspectives in conservation. She is excited about the possibilities to work on different conservation initiatives in the future, including building partnerships engaging communities and strengthening science-policy interface.

Opposite:
Pei Rong Cheo (MPhil Conservation Leadership, 2017) talking with Sir David Attenborough
Left:
Volunteers collecting data

Two birds of a feather

Darwin College is forging a new partnership with the Zukunftskolleg of the University of Konstanz in Germany. The first joint initiative in this partnership will be the Research Visit programme. Participating Fellows will not only benefit from institutional support, but also and especially from their integration into an interdisciplinary community.

When he arrived at Darwin College in 1989, Giovanni Galizia did not realise that his stay in Cambridge would affect more than just his scientific career. He had just completed his undergraduate university studies at the Freie Universität Berlin and was beginning his PhD studies in Zoology. The Anglo-American university system with its colleges was completely new to him. But the fact that Darwin College was then, as it is today, comprised of a community of researchers from all different kinds of scientific disciplines delighted him from the very beginning. Beyond his academic activities, he also played his part in the colleges' theatre group, joined the DCBC, became president of DCSA, and learned how to pour a headless beer at the College bar. Today, Giovanni is Professor of Neurobiology and Director of the Zukunftskolleg at the University of Konstanz.

The Zukunftskolleg is an Institute of Advanced Study that promotes the academic life of early career researchers from a multitude of disciplines. Post-doctoral researchers and early career research group leaders join for a period of either two or five years. The Fellows are joined by established researchers – the Senior Fellows – as well as doctoral students – the Doctoral Fellows. The overall aim of the Zukunftskolleg is to provide Fellows with the tools they need to advance both their research and their academic careers in an optimal way.

International relations are essential for realising this aim. "International connections are crucially important for researchers. This is why we create networks for our Fellows to meet with researchers from all over the world," explains Giovanni. In order to expand these opportunities for interaction, the Zukunftskolleg initiated the Research Visits programme.

The programme supports international exchange and collaboration in two ways: Fellows from the Zukunftskolleg can visit an international institute of their choice, and early career researchers from partner institutions can visit the Zukunftskolleg.

Darwin is one of the first partner institutions with whom the Zukunftskolleg is carrying out the Research Visit programme. "Darwin is an international and interdisciplinary community – just like the Zukunftskolleg. They are two birds of a feather," says Giovanni when describing the basis of the partnership.

Beyond the practical benefits of the Research Visit programme, participants will also benefit from personal interaction. "Building relationships is absolutely essential". Indeed, he is still in contact with former fellows with whom he was happy to share his Darwin College experience as an early career researcher.

Above: *Giovanni Galizia (PhD Zoology, 1989)*

With a strong progression over the last year, DCBC is now one of the most successful graduate rowing clubs in Cambridge. And the 2017/18 year saw some pretty incredible achievements! The first W3 in May Bumps in 17 years, an overbump by Darwin M1 in day one of Lent Bumps, decisively breaking the spell of spoons, a crew trip to Prague and a beautifully solid performance from W1 all year. But racing success aside, what has made this year so wonderful is the brilliantly positive attitude of all the crews, celebrating the victories and disappointments alike and laughing our way through it all.

Lent Bumps brought with it some spectacular bad weather featuring blizzards, hail and -8 degrees, leading to many races being cancelled. However, after an incredible effort from all of the Colleges de-icing the towpath, the final days of Bumps could go ahead. All three of our crews managed to race three times with M1 going up 2 places, W1 going up 3 places and W2 going down 3 places.

Following on swiftly from their success in Bumps, W1 went straight off to race on the Thames in the Women's Eights Head of the River Race (WEHORR). They smashed expectations by moving up an incredible 81 positions to 149th (out of 320).

May Bumps this year was one of the most successful for Darwin in many years. All five Darwin crews successfully made it through the four days of Bumps without too many crashes. W1, M1 and W2 demonstrated grand rowing abilities, bumping up 3 out of 4 days each. Sadly, M2 didn't have much luck but, with their row over on day 2, they avoided spoons! W3 put in a solid performance going down only one position overall. Most importantly though, we all celebrated in style at a spectacular Boat Club Dinner featuring a new Darwin "shot blade" followed by a trip to Wetherspoons.

Above, clockwise from top left:
Lent Bumps 2018. W1's dramatic hand break turn in Grassy corner to secure their third and final bump. Congratulations to the crew and their coach who were awarded discretionary blades for their impressive achievements!
May Bumps 2018. Darwin M1 soaking up the sun and the applause on the final day of May Bumps 2018!
Darwin W1 celebrated in style and cracked out the on board cocktails!

Following a short post-Bumps break DCBC started preparing themselves for racing in South Korea! Our crew did amazingly well at the the 2018 DGIST World Class University Rowing Festival, bringing home gold in the women's coxed 4 1K race and the erg relay, as well as silver in the mixed 8s 1K race.

We are very excited about this academic year, as our Club turns 50! Mark your calendars for the 6th of July 2019 because we are throwing the best anniversary party Darwin College has ever seen. There will be racing, but there also will be eating, drinking and dancing. On top of that rumour has it DCBC is getting a new men's boat in 2019!

Darwin College Register 2018

VISITOR
The Right Honourable Lord BURNETT of MALDON (Ian Duncan), Lord Chief Justice of England and Wales

MASTER
Christine Mary Rutherford FOWLER, MA PhD FRAS FGS FRCGS; (2012)

VICE-MASTERS
Jonathan Luke HEENEY, PhD ScD; (2012); Professor of Comparative Pathology, Department of Veterinary Medicine
Fiona Eve KARET, PhD FMedSci; (2014); Professor of Nephrology, Cambridge Institute for Medical Research

DEAN
Duncan James NEEDHAM, PhD; (2013); Associate Lecturer, Faculty of History

DEPUTY DEANS
Matthew Russell JONES, PhD; (1992); Reader in Information Systems, Judge Business School
Sara Theresa BAKER, PhD; (2012); University Lecturer in Psychology and Education, Faculty of Education

BURSAR
John Tannatt DIX, LLB MA; (2014)

COLLEGE SECRETARY
Julian Graham EVANS, MA; (2014); Secretary, School of Humanities and Social Sciences

DEVELOPMENT DIRECTOR
Samuel Oliver VENN, BA; (2017)

PROFESSORIAL AND OFFICIAL FELLOWS
Simon John SCHAFFER, MA PhD; (1984); Professor of History of Science, Department of History and Philosophy of Science
Sir Harshad Kumar Dharamshi Hansraj BHADESHIA, PhD FREng FRS; (1985); Tata Steel Professor of Metallurgy, Department of Materials Science and Metallurgy
Adrian Thomas GROUNDS, DM FRCPsych; (1987); Honorary Research Fellow, Institute of Criminology
Andrew Mawdesley PITTS, PhD; (1990); Professor of Theoretical Computer Science, Computer Laboratory
François -André PENZ, PhD; (1995); Professor of Architecture and the Moving Image, Faculty of Architecture; *Director of Studies in Architecture*
Carol Elspeth Goodeve BRAYNE, CBE MSc MD FRCP FFPH; (1995); Professor of Public Health Medicine, Cambridge Institute of Public Health
Anne Carla FERGUSON-SMITH, PhD FRS FMedSci; (1997); Arthur Balfour Professor of Genetics, Department of Genetics
Christopher Michael BISHOP, PhD FRS FRSE; (1998); Director, Microsoft Research Cambridge
Torsten KRUDE, PhD; (2000); University Senior Lecturer, Department of Zoology
John Harold NILSSON-WRIGHT, PhD; (2001); University Senior Lecturer, Faculty of Asian and Middle Eastern Studies
Alan Frank BLACKWELL, PhD; (2001); Professor of Interdisciplinary Design, Computer Laboratory
Emily Fleur SHUCKBURGH, OBE PhD; (2001); Head of Open Oceans, British Antarctic Survey
Paul Andrew ROBERTSON, PhD; (2003); University Senior Lecturer, Department of Engineering
Mark Edmondus Jan DE ROND, DPhil; (2006); Professor of Organisational Ethnography, Judge Business School
Michael Edwin AKAM, DPhil FRS; (2006); 1866 Professor of Zoology, Department of Zoology
Dénes SZŰCS, MA PhD; (2007); Reader in Cognitive Neuroscience and Psychology, Centre for Neuroscience in Education. *Honorary Wine Steward*
Carl Edward RASMUSSEN, PhD; (2008); Professor of Machine Learning, Department of Engineering
Christopher Guy SANDBROOK, PhD; (2011); Senior Lecturer in Conservation Leadership, Department of Geography
Russell Paul COWBURN, PhD ScD FRS; (2011); Professor of Experimental Physics, Cavendish Laboratory
Thomas Jeffrey MILEY, PhD; (2011); Lecturer in Political Sociology, Department of Sociology
Jan Dietrich Karsen LÖWE, PhD FRS; (2012); Honorary Professor, Director, MRC Laboratory of Molecular Biology
Panayiotis ANTONIOU, PhD; (2012); University Senior Lecturer in Educational Leadership and Evaluation, Faculty of Education
Paul Stuart ANDERSON, PhD; (2013); University Senior Lecturer in Middle Eastern Studies, Faculty of Asian and Middle Eastern Studies
Paul Joseph LEHNER, PhD FRCP FMedSci; (2013); Professor of Immunology and Medicine, Cambridge Institute for Medical Research
Dame Jane Elizabeth FRANCIS, DCMG PhD; (2013); Director, British Antarctic Survey
Eric WOLFF, PhD FRS; (2013); Royal Society Research Professor, Department of Earth Sciences
Christine VAN RUYMBEKE, Doctorate, Université Libre de Bruxelles; (2015); Ali Reza and Mohamed Soudavar Senior Lecturer, Faculty of Asian and Middle Eastern Studies; *College Praelector*
Ines BARROSO, PhD; (2015); Senior Group Leader, Metabolic Disease Group, Sanger Institute
Simone Nicole WEYAND, PhD; (2016); Group Leader, Department of Biochemistry
Timothy Nicholas MILNER, MA; (2016); Deputy Senior Proctor (2018-19), Ceremonial Officer, University of Cambridge; *Deputy College Praelector*
Angela Mary WOOD, PhD; (2016); University Lecturer in Biostatistics, Department of Public Health and Primary Care
Aylwyn Olav SCALLY, PhD; (2016); Group Leader, Department of Genetics
Julia DAVIES, PhD; (2016); Head of Transport Group, Department of Plant Sciences
Daniel Haskell WEISS, PhD; (2017); Polonsky-Coexist Lecturer in Jewish Studies, Faculty of Divinity
Alexandra BRINTRUP, PhD; (2017); University Lecturer in Digital Manufacturing, Institute of Manufacturing
Paolo CAMPANA, PhD; (2017); University Lecturer in Criminology and Complex Networks, Institute of Criminology
Jennifer Mary SCHOOLING, PhD FICE; (2018); Director of the Centre for Smart Infrastructure, Department of Engineering
James Benedict ROWE, PhD; (2018); Patrick Sissons Fellow, Professor for Cognitive Neurology, Department of Clinical Neurosciences

VISITING FELLOW
Gill PARTINGTON, PhD; (2018); Munby Research Fellow in Bibliography, University Library

RESEARCH FELLOWS
Benjamin David RAYNOR, PhD; (2015); Moses and Mary Finley Research Fellow, Faculty of Classics, *Fellow Librarian*
Tanya HUTTER, PhD; (2015); Henslow Research Fellow, Department of Chemistry
Thomas Joseph MAGUIRE, PhD; (2015); Research Fellow, Department of Politics and International Studies
Arthur Dale DUDNEY, PhD; (2016); Leverhulme Early Career Fellow, Faculty of Asian and Middle Eastern Studies
Daniel Matthew STORISTEANU, PhD; (2016); Postdoctoral Researcher, Department of Medicine
Tao LIU, PhD; (2016); Research Fellow, Department of Chemistry
Jenny ZHAO, PhD; (2016); Lloyd Dan-David Research Fellow, Needham Research Institute
Alexandra (Sandy) SKELTON, PhD; (2016); Research Associate, Department of Engineering
Miltos ALLAMANIS, PhD; (2017); Postdoctoral Researcher, Microsoft Research Cambridge
Adrian Vivian WELLER, PhD; (2017); David Mackay Newton Research Fellow, Senior Researcher, Machine Learning Group
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Charu SINGH, PhD; (2017); Adrian Research Fellow
Advait SARKAR, PhD; (2017); Microsoft Research Fellow, Microsoft Research Cambridge
Robin REUVERS, PhD; (2017); Schlumberger Research Fellow, Department of Applied Mathematics and Theoretical Physics

Francesco Simone RUGGERI, PhD; (2017); Postdoctoral Researcher, Department of Chemistry
Giancarlo SOAVI, PhD; (2017); Research Associate, Cambridge Graphene Centre and Department of Engineering
Samuel George OTTEWILL-SOULSBY, PhD; (2017); Research Associate, Faculty of Classics
Jenna Mae Irene Russum DITTMAR, PhD; (2017); Wellcome Trust Research Fellow, McDonald Institute for Archaeological Research
Katja Sabina KEVIC, PhD; (2018); Microsoft Research Fellow, Microsoft Research Cambridge
Iosifina Petrina FOSKOLOU, PhD; (2018); Patrick Sisson Evelyn Trust Research Fellow, Department of Physiology
Leah ASTBURY, PhD, (2018); Wellcome Trust Research Fellow, Department of History and Philosophy of Science
Miguel ANAYA, PhD, (2018); Schlumberger Research Fellow, Cavendish Laboratory
Hong GE, PhD, (2018); Postdoctoral Researcher, Machine Learning Group
Rebecca Vanessa BERRENS, (2018); PhD; Charles and Katharine Darwin Research Fellow

HONORARY FELLOWS

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Sir Arnold Stanley Vincent BURGEN, MA MD FRCP FRS; (1982)
Sir Geoffrey Ernest Richard LLOYD, PhD FBA; (1985)
Sir Michael Francis ATIYAH, OM PhD (Hon) ScD FRS FRSE FMedSci FREng; (1992)
Jeffrey William EDINGTON, BSc PhD DSc; (1998)
Amartya Kumar SEN, CH MA PhD (Hon) LittD FBA FRSE; (1998)
Michael Charles SHEPPARD, MA DPhil; (2000)
Sir Charles Antony Richard HOARE, DSc FRS; (2001)
Ekhard Karl Hermann SALJE, PhD FRS; (2002)
The Honourable Robert Anthony RAYNE; (2004)
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Bernard Michael de Lerisson CAZENOVE; (2005)
Dame Jean Olwen THOMAS, DBE MA ScD FRS FMedSci; (2007)
Robert Hughes JONES, PhD; (2008)
Simon Hastings BITTLESTON, PhD; (2013)
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Professor John RUST; The Psychometrics Centre
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Dr Daniel WUNDERLICH; School of Arts and Humanities

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Dr Anna PROTASIO; Sanger Institute

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Dr Dmitry MAZUNIN; MRC Laboratory of Molecular Biology
Dr Elizabeth MONIER; Faculty of Asian and Middle Eastern Studies
Dr Nozomi TAKAHASHI; Department of Genetics
Dr Holly WINTON; British Anartic Survey

POSTDOCTORAL ASSOCIATES
Dr Adam ATTAHERI; Department of Psychology
Dr Elise BIERSMA; British Antartic Survey
Dr Jotis BORONAS; Department of Earth Sciences
Dr Eleanor CAMPBELL; Department of Biological Sciences
Dr Jude CASTELINO; Department of Earth Sciences
Dr Chrispin CHAGUZA; Department of Biological Sciences
Dr Stephanie DIEPEVEEN; Department of Politics and International Studies
Dr Jochen DREYER; Department of Chemical Engineering and Biotechnology
Dr Shoven DUTTA; Cavendish Laboratory
Dr Avishai GILKIS; Institute of Astronomy
Dr Natalia GOMES NAVARRO; Department of Biological Sciences
Dr Thomas GRUNER; Cavendish Laboratory
Dr Nancy HIGHCOCK; Department of Archaeology
Dr Max HOLLOWAY; Department of Geography
Dr Nanna KAALUND; Scott Polar Research Institute
Dr Leon KAPETAS; Department of Engineering
Dr Tim KIETZMANN; Medical Research Council, Cognition and Brain Sciences Unit
Dr Emma LAWLOR; Medical Research Council, Epidemiology Unit
Dr Lucy MACGREGOR; Cambridge Neuroscience
Dr Bishara MARZOOK; Department of Biological Sciences
Dr Charles MORGAN; Department of Biological Sciences
Dr Ioannis POLITIS; Department of Engineering
Dr Monica RAMSEY; Department of Archaeology
Dr Souvik ROY; Department of Chemistry
Dr Enric STERN-TAULATS; Department of Materials Science and Metallurgy
Dr Kaveesha WIJESINGHE; Department of Pathology
Dr Joseph ZHANG; Department of Chemistry

New Members of the Fellowship 2018 Academic Year

This year we are pleased to have inducted the following people to the Fellowship. Welcome to them all, their input into the College is very much appreciated.

FELLOWS
Paolo CAMPANA
Department: University Lecturer in Criminology and Complex Networks, Institute of Criminology
Research Interests: Organised crime and forms of extra-legal governance. Corporate crime and fraud; trust, reputation and mechanisms of cooperation in illegal settings.

Jennifer SCHOOLING
Department: Director of the Centre for Smart Infrastructure (CSIC), Department of Engineering
Research Interests: CSIC is an Innovation and Knowledge Centre (IKC) with the specific aim to transform infrastructure through smarter information.

James ROWE
(Patrick Sissons Fellow)
Department: Director and Principal Investigator, Cambridge Centre for Frontotemporal Dementia and related disorders, Department of Clinical Neurosciences
Research Interests: Dementia, Frontotemporal dementia, Action control and decision making, Progressive Supranuclear Palsy, Corticobasal degeneration, Successful cognitive ageing, Parkinson's disease, Alzheimer's disease, Primary Progressive Aphasia.

RESEARCH FELLOWS
Adrian WELLER
(David Mackay Newton Research Fellow)
Department: Senior Researcher, Machine Learning Group
Research Interests: Broad interests across machine learning and artificial intelligence (AI), their applications, and their implications for society, including: scalability, reliability, interpretability, fairness, privacy, ethics, safety and finance.

Emily WARD
(Moses and Mary Finley Research Fellow)
Department: Faculty of History
Research Interests: Male adolescence and the barriers between childhood and adulthood in the central Middle Ages.

David FRIEDMAN
Department: Faculty of History
Research Interests: Flavius Josephus, ancient historiography, ancient ethnography.

Charu SINGH
(Adrian Research Fellow)
Department: History and Philosophy of Science
Research Interests: History of science, knowledge and empire; South Asian history

Advait SARKAR
(Microsoft Research Fellow)
Department: Microsoft Research, Cambridge
*Research Interests:*The future of humanity in the age of artificial intelligence, and universal data literacy.

Robin REUVERS
(Schlumberger Research Fellow)
Department: Department of Applied Mathematics and Theoretical Physics
Research Interests: Mathematics of Bose gases, fermionic antisymmetry, many-body quantum physics, related topics in quantum information and mathematical analysis.

Francesco RUGGERI
Department: Department of Chemistry
Research Interests: Biophysics and Biophysical Chemistry

Giancarlo SOAVI
Department: Cambridge Graphene Centre and Department of Engineering
Research Interests: Photonics and Optoelectronics Baseed on Graphene and Related Materials

Samuel OTTEWILL-SOULSBY
Department: Faculty of Classics
Research Interests: Part of the ERC funded Impact of the Ancient City project based in the Faculty of Classics, investigating the legacy of classical thought of the city on medieval urban ideals. Early medieval history, particularly in its politics, specialising in frontiers and diplomacy, and contact between Christians and Muslims in the period.

Jenna DITTMAR
(Wellcome Trust Research Fellow)
Department: McDonald Institute for Archaeological Research
Research Interests: Examining the historical and biological effects of the Medieval plague epidemic. Archaeological, historical and genetic (aDNA) studies will enable a discussion about the previously unstudied consequences by revealing how the plague changed human well-being, activity, mobility, health and the genetic constitution of Europe.

Katja KEVIC
(Microsoft Research Fellow)
Department: Microsoft Cambridge
Research Interests: Mining repositories of software projects to better support developers in their programming tasks. Recommending relevant places in the source code when performing a change task or when navigating the source code.

Iosifina FOSKOLOU
(Patrick Sisson Evelyn Trust Research Fellow)
Department: Department of Physiology
Research Interests: The role of hypoxia-inducible metabolites in cancer immunology

Leah ASTBURY
(Wellcome Trust Research Fellow)
Department: History and Philosophy of Science
Research Interests: Marriage and health in early modern England.

Miguel ANAYA
(Schlumberger Research Fellow)
Department: Cavendish Laboratory
Research Interests: Optoelectronic properties of emerging semiconductors.

Hong GE
Department: Machine Learning Group
Research Interests: Machine Learning, Probabilistic Programming, Bayesian Nonparametrics.

Rebecca BERRENS
(Charles and Katharine Darwin Research Fellow)
Department: Cancer Research UK
Research Interests: Transposable elements in mammalian development.

HONORARY FELLOWS

Elizabeth BLACKBURN, AC FRS FAA FRSN SCD
Biography: Matriculated at Darwin 1971, PhD Biology. Elizabeth discovered the molecular nature of telomeres - the ends of eukaryotic chromosomes that serve as protective caps essential for preserving the genetic information - and the ribonucleoprotein enzyme, telomerase. She received an Honorary Degree from Cambridge in 2017 and the Nobel Prize for Physiology or Medicine in 2009.

Eric MASKIN, PHD SCD
Biography: Eric was a visiting student at Darwin 1975-76. An economist and co-winner of the 2007 Nobel Prize in Economics 'for having laid the foundations of mechanism design theory'. He is the Adams University Professor at Harvard and has made contributions to game theory, contract theory, social choice theory, political economy, and other areas of economics. He received an Honorary Degree from Cambridge in 2017.

Simon KEYNES, PHD FBA
Biography: Simon Keynes is the Elrington and Bosworth Professor of Anglo-Saxon and Fellow of Trinity College. He has been a fellow of Trinity College since 1976. From 1999 to 2006 he was head of the Department of Anglo-Saxon, Norse and Celtic. He is a fellow of the Royal Historical Society, the Society of Antiquaries of London and the British Academy.

Graduands presented July 2017–July 2018

PhD:

Applied Mathematics:
Giles SHAW
Liftings, young measures, and lower semicontinuity.

Applied Mathematics and Theoretical Physics:
Marine DUPOIRON
The effect of gas on multi-stage mixed-flow centrifugal pumps: flow visualisation and modelling.

Archaeology:
Yiru WANG
Identifying the beginnings of sheep husbandry in western China.

Asian and Middle Eastern Studies:
Yuhsin HUANG
A cross-linguistic comparison in the L2 acquisition of Chinese applicative double object constructions and double unaccusative constructions.
Zehavit ZASLANSKY
Melancholy and modernity in diasporic Hebrew poetry.

Biochemistry:
Mona BASSUNI
Dynamics and architecture of a mycolactone polyketide synthase module.
Samuel MYERS
Determining the signalling pathways that govern human naïve pluripotency.
Janaina NASCIMENTO
Cordon usage determines mRNA levels in Trypanosoma brucei.

Biological Anthropology:
Denis MUKHONGO
Matrilineal, phenotypic diversity and possible nutritional adaptation among the Turkana in north-western Kenya.

Biological Science:
Kamilla ERIKSEN
Maternal nutrition, breast milk micronutrients and infant growth in rural Gambia.
Dominic EVANS
A midbrain mechanism for computing escape decisions in the mouse.
Karol FIEDORCZUK
Cryo-electron microscopy studies on ovine mitochondrial complex.
Poppy GOULD
The role of DNA repair in DNA methylation dynamics.
James HADFIELD
Analysis of an intracellular bacterium using population genomics and data visualisation.
Sophie MORGAN
Prion-like properties of assembled human alpha-synuclein.
Oliver PALMER
Computational analysis of pathogenic mutations in mitochondrial diseases using machine learning and interaction network topology.
Thomas RENSCH
Applications for ChIP-sequencing data reusability.
James STOWELL
Targeting poly(A) tail removal with an MMI1 bound CCR4-not complex.
Maciej SZUKSZTO
Regulation of Mammalian mitochondrial gene expression: new factors and approaches.

Chemical Engineering:
Thomas BLYTHE
Taking magnetic resonance into industrial applications.
Tian TIAN
The development of monolithic metal-organic frameworks.

Chemistry:
Raphaele CLEMENT
First principles DFT and solid-state NMR studies of sodium transition metal oxides for rechargeable Na-ion battery applications.
Rosemary FREER
Molecular origins of tissue vulnerability to aberrant aggregation in protein misfolding diseases.
Oscar MENDEZ LUCIO
Bioactivity and selectivity analysis of Kinase Inhibitors.
Florian ROESSLER
Development and applications of structure based force field parameters in molecular dynamics simulations.
Ingrid VAN DER WATEREN
Effects of C-terminal truncation and lipid interactions on the aggregation of α-synuclein.
Yuteng WU
Double-click peptide stapling strategies for inhibiting protein-protein interactions.

Clinical Neurosciences:
Daire ROWLANDS
The role of the extracellular matrix modifications in central nervious system plasticity.

Computer Science:
Kiela DOUWE
Deep embodiment: grounding semantics in perceptual modalities.

Darwin College Register 2018

Criminology:
Jennifer BARTON-CROSBY
Situational action theory and intimate partner violence: an exploration of morality as the underlying mechanism in the explanation of violent crime.

Development Studies:
Zhenyu FU
What factors determine the success and failure of innovation in China? A systemic study of the Chinese mining industry.
Guy WILLIAMS
Change in China's banking sector as an institutional evolution.

Earth Sciences:
Andrew HOWELL
Coastal tectonics and tsunami generation in the eastern Mediterranean.
Tajudeen TAJUDEEN
Coupling source term, mineral reactivity and flow in radionuclide transport.
Moon Hyo KANG
Optimisation of transfer and doping of polymer supported CVD graphene.
Thomas WILLIAMS
Investigating the circulation of southern ocean deep water masses over the last 1.5 million years by geochemical fingerprinting of marine sediments.

Economics:
Jan KVASNICKA
Essays in optimal fiscal policy.
Cherry MUIJSSON
Topics in systematic risk and financial connectedness.

Education:
Ekaterina MACE-NAZINA
The impact of childhood international mobility on cultural identity.

Engineering:
Adedayo ABINUSAWA
Growth investment matrix - a framework linking corporate venture capital investment with business growth strategy.
Philipp BRAEUNINGER-WEIMER
Fundamentals of CVD enabled graphene manufacturing and integration.
Martin FELLE
Telecom wavelength quantum devices.
Fabio GIARDINA
On the discretisation of locomotion dynamics: impulse- and shape-based modelling for hopping robots.
Yingzhen LI
Approximate inference: new visions.
Edouard MACHOVER
Spark ignition in annular combustors.
Andrea MASI
Eddy-resolving simulations of the flow around a vertical tail plane.
Andrew MELZER
Aerodynamics of transonic Turbine trailing edges.
Bella NGUYEN
Vision-based over-height vehicle detection for warning drivers.
Ying QIN
Assessing the water, energy and land nexus in China.
Christoph SCHREIBER
Inlet recirculation in radial compressors.
William WEBSTER
The production of radionuclides for nuclear medicine from a low-energy, high-current compact particle accelerator.
Tsung-Hsien WEN
Recurrent neural network language generation for dialogue systems.
Marco ZACCARIA
Bi-tempered glass.

English:
Ezra HORBURY
Early modern prodigal sons: the parable, prodigality, and filiality.

Genetics:
Amanda ANDERSSON-ROLF
Application and development of advanced genetic tools to study adult stem cells.
Gianmarco MASTROGIOVANNI
Establishment of new human and mouse liver cancer models and their use to uncover the role of RNF43 and ZNRF3 in liver homeostasis and repair.
Alessandra MERENDA
Development of a new screening system for the identification of RNF43-related genes and characterisation of other PA-RING family members.

Geography:
James LESTER
Investigating patterns of disease and transmission at a wildlife-human interface in Western Uganda.
James TEMPEST
Hydrodynamic effects of salt marsh canopies and their prediction using remote sensing techniques.
Nicholas WILKINSON
Conserving the unknown: decision-making for the critically endangered Saola Pseudoryx nghetinhensis in Vietnam.

Haematology:
Jan BOTTHOFF
Loss of rad51 in zebrafish (Danio rerio): a novel Fanconi anaemia model.
Francesca NICE
The effect of DNMT3A mutations in myeloproliferative neoplasms.

History and Philosophy of Science:
Matthew DRAGE
"Universal Dharma": authority, experience and metaphysics in the transmission of mindfulness-based stress reduction.
Carl FISHER
Early Darwinian commemoration in Britain, 1882-1914.

Law:
Jason ALLEN
Judicial review of non-statutory executive power: ultra vires and the common law.
Gabriel BOTTINI
Admissibility in investment arbitration: standing causes of action, and damages.

Materials Science:
Michael COTO
Harnessing the photochemistry of TiO2 based nanocomposites.
Subhankar DAS BAKSHI
Wear of fine pearlite, nanostructure bainite and martensite.
Hanwei FU
Microstructural alterations in bearing steels under rolling contact fatigue.
Arunim RAY
Niobium microalloyed rail steels.

Medical Science:
Rajbir BATRA
Decoding the regulatory role and epiclonal dynamics of DNA methylation in 1482 breast tumours.
Guinevere GRICE
Decoding Lysine-11signals in ubiquitination.
Rui MAURICIO
Understanding of the Shigella virulence factor IcsA and the interaction with N-WASP.
Daniel WRIGHT
Investigating the relationship between markers of ageing and cardiometabolic disease.

Medicine:
Ali ALISAAC
Understanding functional mechanisms of genetic susceptibility to mycobacterial infection.
Joel CHAPPELL
Vascular smooth muscle cell heterogeneity and plasticity in models of cardiovascular disease.
Albert LILEY
Statistical co-analysis of high dimensional association studies.
Daniela RODRIGUEZ-RINCON
Tackling mycobacterium abscessus infection in cystic fibrosis.
Tiziana ROSA
Protection against myocardial infarction by decreasing mitochondrial oxidative stress.

Music:
Ariana PHILLIPS-HUTTON
Is sorry really the hardest word? Guilt, forgiveness, and reconciliation in contemporary music.
Thomas WILDER
The forging of an icon: the violin in nineteenth-century London.

Pathology:
Justyna KUCIA-TRAN
Investigating Oncostatin M receptor as a novel therapeutic target in squamous cell carcinoma.
Carina PEREIRA
The Influenza A virus NS1 protein and viral mRNA nuclear export.

Physics:
Matthew APPLEGATE
Quantum random number generation by photon number detection.
James HAMP
Collective phenomena in pyrochlore and kagome frustrated Ising magnets.
Cheng LI
Metal oxide films for optoelectronic device application.
Zachary RUFF
Towards colloidal self-assembly for functional materials.

Physiology, Development and Neuroscience:
Björn AÐALSTEINSSON
Roles and imprinting of Dlk1 and Rtl1 during skeletal muscle development and regeneration.
Philipe MENDONÇA
Mechanisms of irregular spiking and firing dynamics in cortical oscillations.
Christopher WEYRER
Molecular mechanisms of presynaptic plasticity and function in the mammalian brain.

Plant Sciences:
Alex CANTO PASTOR
Small RNAs in tomato: from defence to development.
Patrick DICKINSON
An investigation of warm temperature induced gene expression in Arabidopsis.

Polar Studies:
Ciaran ROBB
Using semi-automated methods to map glacial geomorphology from remotely sensed data.

Psychiatry:
Shayanti CHATTOPADHYAY MUKHERJEE
Brain connectivity in adolescents with major depressive disorder.
Hannah JONGSMA
The role of the sociocultural context in explaining variance in incidence of psychosis and higher rates of disorder in minorities.

Psychology:
Amy DEVINE
Cognitive and emotional mathematics learning problems in primary and secondary school students.
Tomas FOLKE
The pragmatics of confidence in perceptual and value-based choice.

Public Health and Primary Care:
Kenneth EKORU
Towards reliable evidence for tackling cardiometabolic disease in sub-Saharan Africa.

Pure Mathematics:
Alberto COCA CABRERO
Efficient nonparametric estimation of discretely observed compound Poisson processes.

Social and Developmental Psychology:
Jennifer LANDT
Wanting to help others.

Sociology:
Torsten GEELAN
Trade unions and the media: exercising and revitalizing power after the financial crisis of 2008.
Julieta PALMA
Extended living arrangements in Chile: an analysis of subfamilies.

Theoretical and Applied Linguistics:
Eleni SAVVA
Subsentential speech from a contextualist perspective.

Veterinary Medicine:
Samuel STUBBS
The virome in primary and secondary immunodeficiency.

Zoology:
Thomas CLAY
Drivers of variation in the migration and foraging strategies of pelagic seabirds.
Elizabeth GREEN
Population responses to climate change of two European warbler species.
Joaquim JACOB
Behavioural and electrophysiological analysis of the singing central pattern generator network in crickets: implications for the evolution of song patterns.
Ana MOSTERIN HOPPING
Improvements to influenza vaccine strategy based on understanding of host immunity and viral evolution.

ScD:

Clinical Medicine & Clinical Veterinary Medicine:
Pietro MASTROENI

EngD:

Engineering:
Matthew APPLETON

LLM:

Law:
Akber AHMED
Ajebodunde AJENIFUJA
James BLAKER
Michal HABAS
Shuk Kwan HUNG
Sheriar KHAN
Candice LAU
Irena MADELLA
Shivankar SHARMA
Tomáš STŘELEČEK
Eugene TAN
Lee TING HAN

MASt:

Applied Mathematics:
Adam CHALABI
Christian ESPARZA LOPEZ
Thomas GRIMM
Moritz LAYER
Cheng-Tai LEE
Abhay SHRESTHA

Pure Mathematics:
Rylan GAJEK-LEONARD
Iason KOUNTOURIDIS
Siavash LASHKARIGHOUCHANI
Torben SELL
Yulun WANG

Mathematical Statistics:
Zhen DAI
Kusti SKYTÉN
WEI ZONG

MBA Business Administration:

Rachel ADELMAN
Andrey ANDREEV
Dayne BARTSCHT
Jonathan DE GROOT
Rohhan DIVANJI
Hitomi HAMABA-FURUKAWA
David HOGAN
Joseph KOEBELE

Darwin College Register 2018

Douglas PAETZELL
Leela PAMIDIMUKKALA
Sheela SANEINEJAD
Toshiaki SHIBATA
Billy SUWANTO
Muhammad TAHIR

MEd Education:

Claudia FRANZ
Simon GLENISTER

MFin Finance:

Nor Ayuni AMIR
Gustavo CANO OCHOA
Robin LOBO
Fransiska NOVIANTI
Panayot POSHTOV
Luis René RAMÓN ARANA
Yuxiang WANG
Xi ZHOU

MPhil:

Advanced Chemical Engineering:
Pranav CHOKHANI

Advanced Computer Science:
Sean BILLINGS
Catalina CANGEA
Christopher DAVIS
Łukasz DUDZIAK
Hrafn EIRIKSSON
Christos NIKOLAOU
Lorcan REIDY
Ilia SHUMAILOV

African Studies:
Najla AHMAD
Nicholas BRICE-BENNETT

American History:
Jessica BROOKES
Elizabeth STANTON

Archaeology:
Alisa SANTIKARN
Alicia STEVENS
Yiru WANG

Architecture and Urban Design:
Luke KON
Karla AL HAGE
Melissa FIELDING

Assyriology:
Talin Ghazarian

Biological Science:
Tu LE

Biological Science (Genetics):
Shuai DING
Eliska ZLAMALOVA

Biological Science (Zoology):
Justin KEMP
Milena PAVLICKOVA
Marie-Yon STRÜCKER
Timothy WONG
Xinyang ZHANG

Bioscience Enterprise:
Jeremy 0'HANLON
Lucy WALLACE

Chemical Engineering and Biotechnology:
Ines COLIĆ

Chemistry:
Maureen GEORGES
Xiaoxu OU
Katarina PISANI

Classics:
Konstantinos LYGOURIS
James MACKSOUD
Andrew MARTIN

Clinical Science:
Owain JONES

Computational Biology:
Robert ARCULUS

Conservation Leadership:
Carolina SOTO VARGAS
Noa STEINER
Pui May WONG

Criminological Research:
Daniela KAISER OLHAGARAY
Laura KENNEDY

Criminology:
Atticus DEPROSPO
Bianca RITTER
Teodora VLAICU

Development Studies:
Blandine BENEZIT
Kah Yun CHIA
Papa JACK
Anna KASIMATIS
Hanan TABBARA
Ningshan ZHANG

Early Modern History:
Marc DE KNIGHTEN
Caroline FISH
Anastazja GRUDNICKA
Andrew TEEVEN

Economic and Social History:
Vanessa MCKAY

Economic Research:
Henry AVIOMOH
Jakob BERNDT
Paul KOENIG

Economics:
Danyal ARNOLD
Annabel PETRAKIS
Ines POZAS FRANCO
Laurent RENAUD
Jun Yin SHIK
François STIENNON
Dustin WALPERT
Robert WOODHARD

Education:
Katherine BUSSIERE
Julia ERDELMANN
Julieta GARCIA HAMILTON
Xueyu HE
Soizic LE COURTOIS
Anthony LI
Preeti NAYAK
Garrett RUBIN
Yuan TIAN
Xiangyi ZHA

Energy Technologies:
Maxime DUVIEUSART

Engineering:
Amani ZALZALI

Engineering for Sustainable Development:
Abdul BIN MD DIN
Shivi CHANDNA
Ryan DUCHANOIS
Kyle GRAY
Brendon HARKNESS
Sorcha NÍ MHUIMHNEACHÁIN
Christina SKONDROGIANNI
Fuyu ZHAO

English Studies:
John HEALEY

Environmental Policy:
Isabel FELANDRO LLANOS
Benedict PROBST

European, Latin American and Comparative Literatures and Cultures:
Rossella BUGLIESI

Finance:
Robin BADLOE
Natalia IOANNOU
Julian SPROSSMANN
Jason TAN

Finance and Economics:
Huaqing CAO
Francine CHOI

Genomic Medicine:
Joshua WONG

Geographical Research:
Grace BURCHELL

Health, Medicine and Society:
Benjamin TEASDALE

History and Philosophy of Science and Medicine:
Topaz HALPERIN
Anaïs RAMEAU

History of Art and Architecture:
Ksenia PAVLENKO
Charlotte SCHELLING

History, Philosophy and Sociology of Science, Technology and Medicine:
Alexander BJORNSON
Vassili CHRISTODOULOU
Katie COHEN
Joshua EVANS
Audrey HARNAGEL
Elizabeth SEGER

Industrial Systems, Manufacturing and Management:
Anshul AGARWAL
Carl BRINKMANN
Paul JACCARINI
Ziaena KOPPERNAES
Marlena STANIAK
Ze Sheng Jonathan TAN

Innovation, Strategy and Organisation:
Margot GALEZ
Alex MONACO TSCHAN

International Relations and Politics:
Behnam GHARAGOZLI
Carly KRAKOW
Sadif MUNIR
Adam STREETER
Tan SU
Katerina WRIGHT

Management:
Wassila AYOUCH
Elise LIGNIERES

Medical Science:
Cristina JAUSET GONZALEZ

Medical Science (Clinical Neurosciences):
Raquel GOMES ALVES DA CONCEICAO

Modern British History:
Maxwell DENTON
Jacob FEAR
Eamonn O'KEEFFE

Modern European History:
Moritz SORG

Modern South Asian Studies:
Gaurav DAGA

Music Studies:
John BOWCOCK
Benjamin O'SULLIVAN

Nuclear Energy:
Sara ALSHOMALI
Kinjal DAVE
Una DAVIES

Philosophy:
Farbod AKHLAGI-GHAFFAROKH
Alfred COLLINS
Huanghui DENG
Nicholas EMMERSON

Physics:
Shannon SEAH

Physiology, Development and Neuroscience:
Aram-Christopher SAYADIAN

Political Thought and Intellectual History:
Conor BOLLINS

Primary Care Research:
Sarah FLYNN

Public Health:
Tereza KAPLANOVA
Eleanor TURNER-MOSS

Public Policy:
Kelly FARROW
Byron HEWSON

Real Estate Finance:
Maximilian BAUMANN
Nana Aba DERBY

Scientific Computing:
Callum COURT
Adiran GARAIZAR
James KLIMAVICZ
Akshay SRIDHAR

Social and Developmental Psychology:
Annie CAFFYN

Social Anthropological Analysis:
Julian MURRAY

Sociology:
Xiaomin CAI

Technology Policy:
Maxime HUERRE
Hojeong YOON

Theology and Religious Studies:
Joseph POWELL

Theoretical and Applied Linguistics:
Madeleine BOOTH
Amanda ROIG MARIN

World History:
Samuel AMOS

MRes:

Future Infrastructure and Built Environment:
Socrates ANGELIDES
Francesca O'HANLON

Gas Turbine Aerodynamics:
Pawel PRZYTARSKI

Graphene Technology:
Lianglun LAI
Vinay MALHOTRA

Integrated Photonic and Electronic Systems:
Chawit USWACHOKE
John WHEATLEY

Nanoscience and Nanotechnology:
Taylor UEKERT

Medical Science:
Iain HAY
Mirian LISCI

Plant Sciences:
Jack CURTIS

Events in 2019

Darwin College Lecture Series 2019:

VISIONS **The Lady Mitchell Hall, Sidgwick Avenue**

18th January
Professor Paul Fletcher, Cambridge Neuroscience
Visions

25th January
Professor Anya Hurlbert, Newcastle University
Colour and Vision

1st February
Professor Dan-Eric Nilsson, Lund University
Evolution of the Eye

8th February
Ms Sophie Hackford, Wired Magazine
Vision of Future Technology

15th February
Professor Carlo Rovelli, International Centre for Theoretical Physics
Appearance and Physical Reality

22nd February
Dr Carolin Crawford, University of Cambridge
Viewing the Universe

1st March
Professor Andrew Blake, Samsung AI Research Centre
Computer Vision

8th March
Professor Colin Blakemore, School of Advanced Study
Perception of Visual Space

Alumni Events:

Friday 15th March
Darwin College Society Reunion Dinner during Formal Hall, and drinks afterwards
Venue: Dining Hall and Richard King Room

March/April (to be confirmed)
Alumni events in Beijing, Shanghai and Tokyo

Thursday 21st March
Judge Business School students, alumni and Fellows Drinks
Venue: Richard King Room

April (to be confirmed)
Alumni Event in Athens, Greece

Friday 10th May
Alumni Reunion Dinner for years 1964-75 and 1986-96
Venue: Dining Hall and Richard King Room

Friday 14th June
Darwin College Society Reunion Dinner during Formal Hall, and drinks afterwards
Venue: Dining Hall and Richard King Room

Saturday 6th July
Darwin College Boat Club 50th Anniversary Event
Venue: College gardens and dining hall

Sunday 7th July
Alumni Garden Party
Venue: College gardens

Saturday 21st September
Alumni Buffet Lunch
Venue: College gardens and dining hall

Above: *The Beagle Punt. Credit: Fioralmpa Ampilas*

Editors:
Sophia Smith, John Dix

The editors especially welcome short articles, pictures and news from all our alumni but particularly those overseas.

Correspondence to: darwinian@darwin.cam.ac.uk
To sign up for our ebulletin use this link: eepurl.com/pLzBH or scan our QR code

Front over image: *Photo credit Samuel Venn*