



# IMPACT

AND

# RELEVANCE

Pembrokians in Public Service  
Saving Lives in Conflict Zones  
Innovation in STEM

The Pioneers of 1979  
Celebrating 10 Years of Access  
Managing the Scrum



## ALUMNI EVENTS

Being alumni of Pembroke gives you exclusive access to events all over the world, whether you are in Kuala Lumpur or Nashville, Oxford or London. Our monthly e-bulletin is your best way to learn about upcoming events and other opportunities to benefit as a member of the Pembroke community.

### 2019

#### Alumni Reunion Weekend

**Saturday 21<sup>st</sup> September**

With celebration of 1969 matriculation, alumni open house, concert by Sydney Gagliano (2016), talk by Professor Lynda Mugglestone, chapel service and dinner

#### Pembroke at the Pickle: welcoming recent graduates to the alumni family

**Wednesday 2<sup>nd</sup> October**

Casual happy hour for all alumni in the Sterling Bar at the Gherkin, London EC3

#### House of Commons Reception and Tour

**Thursday 10<sup>th</sup> October**

#### Meet the Strategic Development Director in Nashville

**Thursday 17<sup>th</sup> October**

#### 'Dulce et decorum est pro patria mori': a Murder Mystery Dinner at Pembroke, written by Ian Flitcroft (1982)

**Saturday 26<sup>th</sup> October**



#### Women in Law event

**Tuesday 29<sup>th</sup> October**

The Law Society, Chancery Lane, London

#### Pembroke at the Pickle: Private Equity and other career networking groups

**Wednesday 6<sup>th</sup> November**

Casual happy hour for all alumni in the Sterling Bar at the Gherkin, London EC3



#### Lecture followed by 40<sup>th</sup> Anniversary of Women Dinner at Pembroke

**Friday 29<sup>th</sup> November 2019**

With *The Times* Fashion Director, Anna Murphy (1990)

#### Pembroke at the Pickle: Access and Outreach - how you can get involved

**Wednesday 4<sup>th</sup> December**

Casual happy hour for all alumni in the Sterling Bar at the Gherkin, London EC3

#### Pembroke at the Punch Tavern (2009-2019 matrics)

**Friday 6<sup>th</sup> December, 6pm**

#### The Varsity Match

**Thursday 12<sup>th</sup> December**

### 2020



#### Pembroke at the Pickle: Management Consulting and Digital Change 'ITsHerFuture'

**Wednesday 8<sup>th</sup> January**

Casual happy hour for all alumni in the Sterling Bar at the Gherkin, London EC3

#### Pembroke at the Pickle: Sport

**Wednesday 5<sup>th</sup> February**

Casual happy hour for all alumni in the Sterling Bar at the Gherkin, London EC3

#### Pembroke at the Pickle: Half-Gaudy Gathering (1971-1973)

**Wednesday 4<sup>th</sup> March**

Casual happy hour for all alumni in the Sterling Bar at the Gherkin, London EC3

#### Master's Circle

**Friday 6<sup>th</sup> March - By Invitation only**

#### Oxford University's European Meeting Minds: Berlin

**Friday 20<sup>th</sup> - Saturday 21<sup>st</sup> March**

#### Gaudy: 1994-2000

**Friday 3<sup>rd</sup> April**

#### Oxford North American Reunion: New York

**Friday 17<sup>th</sup> - Sunday 19<sup>th</sup> April**

#### Tesdale Lunch and Graduate Research Fair

**Saturday 9<sup>th</sup> May - By Invitation only**

#### Pembroke's Annual Garden Party

**Saturday 30<sup>th</sup> May**

#### Gaudy: 1988-1993

**Friday 26<sup>th</sup> June**

### FOR FURTHER INFORMATION...

...on our events, and to register, please see our website:

[www.pmb.ox.ac.uk/events](http://www.pmb.ox.ac.uk/events)

### PEMBROKE AT THE PICKLE

If you are in London, why not join us at our "Pembroke at the Pickle" events, which take place on the first Wednesday of every month? Each one will have a theme, and offers an opportunity to get together with your Pembroke peers.

Simply visit our website to register your interest if you'd like to come (no charge, drinks on you!) or for more information.



# LETTER FROM THE STRATEGIC DEVELOPMENT DIRECTOR



"Great oaks from little acorns grow" is a 14th century proverb that precisely describes the relevance of Pembroke in today's volatile world. From the research done by Fellows, junior academics and graduate students, to the career choices of the amazing young people who leave us prepared to make a difference in the world in myriad ways, Pembroke is far from a sleepy ivory tower that doesn't impact the world around us.

How appropriate it is that in the year the College marked the passing of one of its greatest alumni, Senator Richard Lugar, the theme of the 2019 Pembrokian is: "Impact and Relevance". Richard Lugar (1954) was the embodiment of both. He dedicated his life to public service in the US Senate for 36 years and, for much of that time, was Chairman of the Foreign Relations Committee. He remained actively involved with Pembroke throughout his life as Chairman of the Pembroke North American Foundation and as a benefactor. A short obituary can be found on page 5.

Pembrokians are active in many areas of public service and in this issue we highlight just a very small selection. On the other side of the US political divide from Dick Lugar, Pete Buttigieg (2005) is throwing his hat into the ring for the Democratic nomination for the 2020 presidential election. Advancing and protecting the reputation of the United Kingdom are Alison Whitney (1982) who joined GCHQ and then went on to be the Director for Engagement for the National Cyber Security Centre, and British Ambassador to Sweden David Cairns (1987). In a further article on page 8, we celebrate three Pembroke graduates who are making a stir in STEM.

Much has been written in recent months about the decline in modern language teaching in British secondary schools. Articles about this, and other areas in which Pembroke leads, can be found in the contents list on the right.

2019 marks an important anniversary for the College. Forty years ago, in 1979, Pembroke along with 17 other Oxford colleges, opened its doors to women. On page 20, four of these pioneers talk about their first impressions of the College. Ruth Sefton-Green, now a Senior Lecturer in Law at the Sorbonne, speaks candidly about the experience: "I often had the impression many male eyes were watching me," she says, "but the upside is that the experience bolstered my fight for egalitarianism, both in my professional and personal life".

Finally, the Master of Pembroke, Dame Lynne Brindley announced her retirement earlier this year. Lynne's inspirational leadership of the College will be celebrated with many events over the coming year with details to be published in our monthly e-bulletins and on the College website. We have enjoyed welcoming back many alumni to Pembroke over the past year, most notably to the 1982-87 Gaudy where the alumni guests included Jeremy Bennett, now the Pembroke Bursar. We have an expanded list of alumni events planned for 2019/20 and look forward to seeing as many of you as possible over the coming months.

*Alice Gosling*

Strategic Development Director

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Edited by Ros Anstey  
Design by Lucy Walters





# PEMBROKIAN IN

Pembrokians are making an impact in many avenues of Public Service. Across the pond, Pete Buttigieg (2005, BA Philosophy, Politics and Economics - Rhodes Scholar) is setting his sights on the White House and campaigning for the Democratic nomination. Meanwhile, David Cairns (1987, BA Oriental Studies) and Alison Whitney (1982, BA Geography) are promoting and protecting the United Kingdom in different ways. David is a career diplomat who joined the Foreign and Commonwealth Office in 1993 and is currently British Ambassador to Sweden, while Alison has recently completed a career at GCHQ.

## PETE BUTTIGIEG EYES THE WHITE HOUSE

Pete Buttigieg is making history on two fronts: the youngest contender for the 2020 Democratic nomination and the first openly gay candidate. It's been a breath-taking journey for the 37-year-old former Pembroke Rhodes scholar. Pete Buttigieg has only been active in US Politics since 2012, when he became Mayor of South Bend Indiana, but has now joined 22 other Democratic hopefuls for the Democratic nomination for the 2020 election. One poll of Iowa voters has put him in second place, after the seasoned campaigner Senator Elizabeth Warren.

After graduating from Harvard and Oxford, Pete Buttigieg became a management consultant at McKinsey before joining the US Navy Reserves as an intelligence officer. Pete Buttigieg's "ticket" is designed to appeal to Millennials, and he has been a prominent campaigner for LGBT rights. In his own words: "We need to secure a future in which every American has the freedom to live a life of their choosing; where our Republic grows more and not less democratic; where racial justice is a reality and not a dream; where we've put an end to endless war; where we've summoned the national will to meet the challenge of climate change; where everyone has the health care they need; and where everyone has the chance to find purpose and belonging in our economy and our country."

**'We need to secure a future in which every American has the freedom to live a life of their choosing; where our Republic grows more and not less democratic'**

Pete Buttigieg has already outlined his vision for US foreign policy calling for a repeal of the 2001 law used to launch military interventions since the start of the war in Afghanistan. He has committed to returning to the Iran Nuclear deal, re-entering the Paris Climate Accords, and finding a two-state solution to the Middle East. Having served in Afghanistan, he believes the US should "never again send troops into conflict without a clear definition of their mission".

The election will be held on November 3, 2020 with the presidential primaries and caucuses scheduled between February and June 2020. The Inauguration is planned for January 20, 2021. Pembroke will be watching!



**DAVID CAIRNS**  
(1987, BA ORIENTAL STUDIES)

"I think we've had enough of experts". This now (in)famous quote from Michael Gove during the Brexit campaign of 2016, is perhaps a good place to start when looking back on my years working for the Foreign Office. Why? Because in a way it encapsulates the opportunities, and the limitations, of working in government service.

The standard mantra of government service is: "Officials advise. Ministers decide". So one of the pleasures of being in public service, in my case in the Foreign Office, is being asked to give such advice. Over the years I have given advice on an extraordinary range of issues, including nuclear weapons in Ukraine, trade and development policy in Geneva, business investment from Japan, and defence relations in Sweden. If you can persuade Ministers, or the Prime Minister, that you are right, then that's it – your recommendation becomes government policy. If the decision goes against you, then your job is to implement and defend it, but you always know you've had a chance to influence.

If we come back to Brexit, it was of course the people of Britain, not Ministers, who decided, in a referendum, to leave the EU.

The then government recommended against that choice. David Cameron campaigned that we should remain EU members. But he lost. The people decided otherwise, and since then Theresa May and her Ministers, and



# PUBLIC SERVICE

officials like me, have tried to implement the decision. Has that been easy? No. But that is a part of public service.

**‘A career in the Foreign Office. Varied? Immensely. Relevant? Every day. Impactful? As much as I can’**

The other part of public service is serving the public, directly. Again, in my career I have been able to do that in a huge variety of ways: supporting the family of the British man killed in the terror attack in Stockholm in 2017; creating an international agreement so that poorer countries could get easier access to medicines; promoting British culture in a year-long festival in Japan; giving funding to stop drug smuggling in the Caribbean; and introducing Prince William and Kate to the people of Stockholm one snowy January in 2018.

A career in the Foreign Office. Varied? Immensely. Stimulating? Massively. Relevant? Every day. Impactful? As much as I can.



David on diplomatic duty

## *“A model of what public service should be”*

Barack Obama’s tribute to Senator Richard Lugar who died in April. Richard Lugar’s political life and lifelong relationship with Pembroke are chronicled below.



Senator Lugar laying the foundation stone for Pembroke’s Geoffrey Arthur Building (GAB) with Roy Jenkins (University Chancellor) and Sir Roger Bannister, CH CBE

### **SENATOR RICHARD ‘DICK’ LUGAR (1932-2018)**

It was with great sadness that the College marked the death on April 28th of one of its greatest alumni, Senator Richard (Dick) Lugar. Senator Lugar was an Honorary Fellow and lifelong friend of the College. He came to Pembroke as a Rhodes Scholar in 1954 to read Philosophy, Politics and Economics (PPE), and was President of the student body during his time here.

It was during his time at Pembroke that he started a correspondence with former Pembroke student, and fellow Rhodes Scholar, Senator J William Fulbright (1925), the founder of the Fulbright Scholarship Programme and long-time Chairman of the US Senate’s Foreign Relations Committee.

After leaving Pembroke, Senator Lugar was elected Mayor of Indianapolis in 1968 and went on to serve five

terms in the Senate from 1977 to 2013 as a member of the Republican Party. He served as a distinguished Chairman of the Foreign Relations Committee twice. Senator Lugar’s greatest achievement was working with Senator Sam Nunn to dismantle weapons of mass destruction in the former Soviet Union. The 1992 Nunn-Lugar legislation was a pivotal point in the de-escalation of tension between the USA and the Soviet Union.

Senator Lugar was recognised internationally with numerous awards and accolades, including an Honorary Knighthood from the Queen and the Presidential Medal of Freedom from President Barack Obama.

A valued and committed member of the Pembroke community, Senator Lugar served as Chairman of the Pembroke College Foundation in North America from its inception in 1984 until his death. He hosted the most recent meeting of its trustees in November 2018 in his office at the Lugar Center in Washington, and before that – as he did for many years – in his Senate office.

During a speech at Oxford in 2005, Senator Lugar discussed the profound influence of his time at Pembroke: “I discovered the extraordinary challenges and opportunities of international education at Pembroke College – my first trip outside the United States. I gained a sense of how large the world was, how many talented people there were, and how many opportunities one could embrace”.

Master of Pembroke, Dame Lynne Brindley, pays tribute: “It was a privilege to have known Dick and his support for Pembroke and pride in the College was a great source of inspiration for us all”.





## THE CHANGING FACE OF INTELLIGENCE GATHERING



**ALISON WHITNEY**  
(1982, BA GEOGRAPHY)

I've recently retired after working for GCHQ for just over 33 years. You may now be expecting a very brief article, given that GCHQ (Government Communications Headquarters) is commonly referred to as "the Government's secret listening base in Cheltenham". My friends will tell you that it's not much good trying to get me to answer any questions about my job or speculate on news stories as I will adopt the "neither confirm nor deny" response posture, but that doesn't mean that I can't tell you something about my career.

I knew before I even came to Pembroke in 1982 that I wanted to do intelligence work. My interest had been piqued by a 1970s BBC TV series called "Most Secret War" in which Professor R V Jones told the fascinating (at least, to me) story of the development and use of technology during the Second World War. One of the episodes was devoted to the breaking of Enigma and I was hooked. At the time, the intelligence agencies didn't advertise jobs publicly like they do today and I thought that I'd probably have to join the Forces to find out what the work was really like. Fortunately, whilst I was at Pembroke, I discovered that there might be another way to satisfy my ambition: applying to work at GCHQ. I did and was offered a post. I told myself I'd give it a couple of years and, if I wasn't enjoying it, I could always find another job.

Looking back, I think my three years at Pembroke certainly contributed to the development of my analytical and questioning skills which were central to the work I did

in GCHQ. As in the world of academia, it's essential not to take things at face value but to get to the evidence and facts of the matter. However, unlike academia, only those with a need to know see the results of your work. I and my colleagues knew that our work was helping to safeguard our national security and found reward enough in that without needing to speak about it. My friends and family were curious about what I was doing, but quickly realised that I wouldn't be answering their questions. Instead, we adopted a jokey approach to my career: for a time, I was labelled "Secret Spice".

However, in the latter part of my career, I found myself in a very different part of the GCHQ organisation, where publicity was encouraged. If you'd asked me in 1986 when I joined GCHQ whether I thought there was any likelihood that I would appear in the media, I would have issued a firm "no", probably shuddering in horror at the thought. However, the world had changed a lot in that time. I'd moved from Cold War intelligence work into the emerging world of cyber security. Communications Security or Information Assurance had long been the less well-known part of GCHQ's mission but, as use of the internet and mobile technology increased, so did its importance, under the new label of cyber security.

New technology and new problems needed new solutions. I'm no technical expert but I can organise things and I don't give up easily. I was lucky enough to be working with truly world class experts and we started experimenting with agile approaches, looking at problems from different perspectives. We tried not to think like archetypal civil servants. Eventually, our work led to the establishment in 2016 of the National Cyber Security Centre which is regarded as a world leader in the field.

'I think Pembroke certainly contributed to the development of my analytical and questioning skills, which were central to the work I did at GCHQ'

(Right)  
Enjoying a recent  
Gaudy back at Pembroke



The whole point of cyber security is that people need to know about the risks they face and what they can do to mitigate them. So, one of the things that's different about the NCSC is that it has a very public profile. It is also trying to encourage more women to work in the field. Only 11% of cyber security experts globally are women. Overall, the NCSC's staff is 35% female and 50% of its senior managers are women. Whilst that's clearly a better position, the NCSC is supporting all sorts of activities to encourage more girls and women to work in the field. It was therefore important that there were some female voices in the media talking about cyber security and, along with other colleagues, I unexpectedly found that I needed media training so that I could appear on the *Today Programme* or record an interview with Emma Barnett for Radio 5 Live, not things I'd ever dreamed of doing!

I stayed at GCHQ for 33 years and never thought of leaving as I found the work both challenging and fulfilling. Looking back on my career, I see lots of changes. Geopolitics and technology are quite different now. But one thing that hasn't changed is the dedication of the people I worked with and their brilliance and perseverance in solving some seriously challenging problems.



Winning the Civil  
Service's prestigious  
Digital Award in 2017



# SAVING LIVES IN CONFLICT ZONES



**ALEX BARNES**  
(2017, DPHIL INTERNATIONAL  
DEVELOPMENT)

**A prize for best postgraduate idea at the Oxford All-Innovate competition in February was a springboard for Pembroke DPhil student Alex Barnes (2017, DPhil International Development) and co-founders Yohan Iddawela and Sebastian Mueller. Their product, formerly known as ConflictScanner and now re-named Lanterne, has made significant progress since that early success at the Oxford Foundry.**

Lanterne is a mobile-based platform which helps international agencies working in conflict zones to navigate safely. Whereas Google Maps show the quickest route from point A to B, Lanterne shows the safest possible route. Our mission is to save lives and improve economic development in conflict zones.

The idea for Lanterne was born out of Yohan's and my experience working and living in Afghanistan, where we observed that many aid organisations had almost no awareness of the security situation, putting them at severe risk.

International workers are in constant danger in conflict zones. Over the last ten years, 3,000 humanitarian workers were killed, injured or kidnapped in conflict zones. In Afghanistan alone, 1176 humanitarian workers were killed or injured since 2001. These workers are most vulnerable when they are travelling on the road.

The security of international workers is also a significant barrier to sustainable economic development in fragile states. International NGOs are required to help provide vital services such as healthcare and humanitarian assistance, while international businesses are required to help build infrastructure like roads and hospitals. Organisations, however, are hesitant to operate in fragile states if their staff are continually targeted. By providing a method of safe route-navigation in conflict zones, Lanterne will help organisations to enter fragile states and become involved in vital development programs.

As a tech start-up making heavy use of AI and machine learning, much of our effort over the last few months has been devoted to fundraising, building our team, and developing our second prototype.

In March, we won the London School of Economics Generate start-up competition, which included a £7,000 grant. We were also listed by the LSE as the 'one to watch' at their Entrepreneur of the Year awards, earning a further £1,000. Also in March, we won a grant from the European Union's Big Data Corridor, which provided us with €50,000 to develop our second prototype in collaboration with the Intelligence Systems and Networks (ISN) research group at Birmingham City University.

In April, we were nominated by Oxford to represent the University at the UK-wide Santander Universities Entrepreneurship Awards. The Awards consist of three separate rounds, with 150 different start-ups competing and just four eventual winners. We're in the running for £25,000 in grant funding. Lanterne has already been selected for the regional semi-finals, and the final pitches are in October. In June, we were shortlisted for a European Space Agency (ESA) grant, which provides £41,500 in funding towards Research and Development for satellite-related technology. On 20<sup>th</sup> June, we pitched Lanterne to the ESA Tender Evaluation Board, and after a short nervous wait, on 2nd July we were advised that our application was successful!

We continue to engage with customers, including the International Committee for

the Red Cross, the United Nations, Médecins Sans Frontières, the United States Institute for Peace, among many others. This is hugely important, as it helps ensure that the product we develop is tailored to our customers' needs.

**'Many aid organisations had no idea of the security situation, putting them at severe risk'**

From the beginning, Pembroke College has been hugely supportive of Lanterne, which is greatly appreciated. Pembroke nominated Lanterne to compete in the All Innovate competition, and the Bursar, Jeremy Bennett, has provided us with invaluable financial advice over the last few months. In early May I presented Lanterne to the Pembroke alumni community, all of who were incredibly warm and encouraging about the business, which I deeply appreciated.

If you are interested in this project and want to learn more, please reach out to us. We take a collaborative approach to development and we would appreciate any support, advice or assistance. Wish us luck in this endeavour!



Alex and his team winning the University of Oxford's All-Innovate Final in February 2019



## THE AGE OF ROBOTS



**JULIE DEQUAIRE**  
(2014, DPhil  
ENGINEERING SCIENCE)

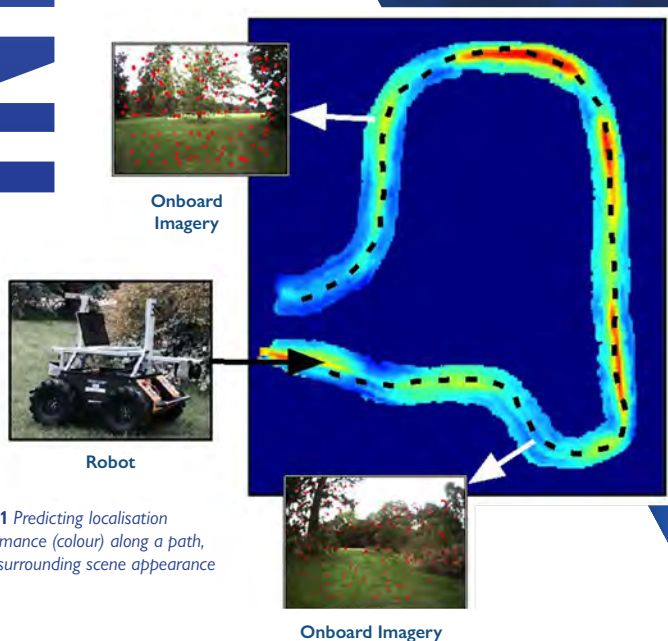
Julie Dequaire is a first-year graduate-entry Medical student with a DPhil in Engineering Science from the Oxford Robotics Institute.

I joined Pembroke College whilst studying as a DPhil student at the Oxford Robotics Institute. The Institute focuses on developing robotic and autonomous systems that can work safely and reliably alongside people, in real world environments, for long periods of time. These autonomous systems make use of prior experiences, their on-board sensors allowing them to detect and know where they are and work out what is happening around them. These are complex challenges shared across diverse domains; ranging from drones, to Mars rovers, two-legged robots and self-driving cars.

In my thesis, I argue that autonomous robots which operate safely in complex and dynamic real world environments, will require the capacity to build situational awareness and construct a higher level of understanding beyond the instantaneous and limited data that is currently provided by their sensors. I suggest this can be achieved with machine learning, by enabling robots to learn directly from their environment to predict the future evolution of the world and performance of their systems.

As humans, we easily sense whether we can find our way in a new environment, or whether we get lost. For a robot however, localisation systems

**'These are complex challenges shared across diverse domains; ranging from drones, to Mars rovers, two-legged robots and self-driving cars.'**



**Figure 1** Predicting localisation performance (colour) along a path, given surrounding scene appearance

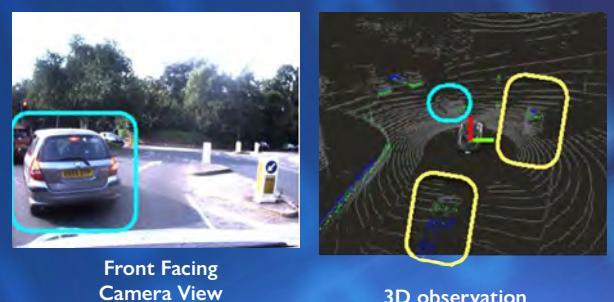
typically only provide instantaneous information with regards to whether the agent is localised or lost, presenting a major challenge for autonomy and planning. I address this shortcoming and suggest a novel framework for predicting ahead of time how well a robot will be able to localise in a particular environment, given an appearance model of the scene. By driving along a new path and looking at the scene around it, a robot can infer how well it will be able to localise along this path during future traverses and plan its route accordingly (Figure 1).



Julie and her colleagues celebrate winning the 2018 Estée Lauder Graduate Innovation Prize

Humans observe the world and build internal models of how it works, and how it may evolve, whereas traditional robotic perception systems find it challenging to understand how objects interact and move through a scene. This becomes particularly challenging if there are natural occlusions, such as a passing bus, which temporarily blocks an object from the robot's view. In this area, my research extends a framework which learns to better handle these occlusions by learning to predict the future evolution of the world from a sequence of observed inputs. The robot directly learns from its observations and is able to work from a moving platform, taking into consideration the scene context. It uses Deep Learning; a promising area of artificial intelligence which learns to recognise patterns directly from large datasets (Figure 2).

I am now studying Medicine as a graduate student and hope to use my background in robotics in my future clinical research. Machine learning and robotics will revolutionise healthcare, from smart prosthetics to personalised medicine. In 2018, along with two colleagues, I was awarded the Estée Lauder Graduate Innovation Prize for a research project aiming to develop a home-based device to monitor rehabilitation post stroke. The proposal involves harnessing the power of machine learning to adapt surface electromyography (EMG) monitoring and provide feedback to the patient as their muscle groups are re-innervated. The funding from the Estée Lauder Graduate Innovation Prize is assisting us in purchasing equipment for both collecting and computing data, and ultimately setting up clinical trials. I am looking forward to developing this idea within the medical community I have recently joined.



**Figure 2** Predicting future scene occupancy beyond natural occlusions



TINY BEINGS...

# BIG IMPACT

Talking microbiology with the public

**Dr Katerina Johnson (2011, BA Biological Sciences & DPhil Interdisciplinary Bioscience – Experimental Psychology) is a recent Pembroke Alumna. Here, she shares the secrets of her public engagement strategy.**

I matriculated in 2011 when I studied Biological Sciences at Pembroke as an undergraduate. Following an amazing three years learning the breadth and depth of biology from leaders in the field, I pursued a DPhil in Interdisciplinary Bioscience. The focus of my DPhil was the gut microbiome, a relatively new field of biology and medicine studying the community of microorganisms in the gut and their relationship with health. In particular, I researched how the gut microbiome may interact with the brain and behaviour, combining research on animal models, humans, wild animals and evolutionary theory. The emerging evidence that gut microbes can affect the brain, influencing anxiety, depressive symptoms and even social behaviour, offers the potential to develop novel therapies for conditions such as depression and autism.

During my DPhil I sought to create opportunities for science communication and public engagement, as I believe that it is just as important for scientists to explain the impact and relevance of their research to the public, as it is to other scientists in their field. When I published research papers, I therefore did quite a lot of media engagement including national and international TV and radio e.g. Sky News,

**'I sought opportunities for public engagement; it's just as important for scientists to explain the impact and relevance of their research to the public as to other scientists.'**

ITV News, BBC Radio 4 to make sure my findings were communicated to the public in a way that was engaging, informative and understandable, while conserving accuracy. My active engagement also helps to widen the impact of my research and, in fact, my paper with Professor Kevin Foster in *Nature Reviews Microbiology* is ranked as the top article for impact out of all articles ever published in that journal. We argue that while it is tempting to think of our gut microbes as "mind manipulators", evolutionary theory does not support this idea. Instead, any effect of gut microbes on behaviour is likely a by-product of microbial metabolism as a result of microorganisms growing and competing in the gut.



## A VOICE OF THE FUTURE...

I also enjoy interacting directly with the public. I recently worked with Guerilla Science - an organisation which introduces people to science at live events - to give a talk about the microbiome at a major music festival. I also collaborated with Oxford Sparks which was a great opportunity to speak about my research field and answer questions live from listeners on Facebook, viewed by over 6,000 people.

Since finishing my DPhil I have competed in FameLab, the national science communication competition, progressing to the regional finals. I really enjoyed the opportunity to talk about scientific concepts in a fun and creative way. As well as communicating science to the general public, I also think its impact on policy is key. Earlier this year I was selected to represent The Genetics Society at the Houses of Parliament as part of the Voice of the Future event. This was a unique opportunity to quiz members of the Science and Technology Committee and Government Chief Scientific Adviser about important scientific issues.

I was excited to be selected to give a TEDx talk this summer with the theme 'A Reimagined Future', where I spoke about the future of the microbiome field (viewable on YouTube). TEDx offers a global platform, and I was keen to make the most of this opportunity to engage and inform the public about how developments in microbiome science may impact their own lives. I look forward to my future endeavours in science communication and might even set about writing a book.

I feel privileged to have had seven years of unrivalled education at Oxford, and even more so to have been a member of the wonderful Pembroke community throughout this time.

Representing The Genetics Society at the Houses of Parliament







**ZOE FORD**  
(2012, MBIOCHEM  
MOLECULAR & CELLULAR  
BIOCHEMISTRY)

Zoe Ford (2012, MBiochem Molecular & Cellular Biochemistry) is a fourth-year student. Here she outlines her ground-breaking research.

I've been lucky enough to complete a couple of summer projects during my time at Pembroke, to get a feel for what I might want to pursue in the future. The biggest opportunity I've had in terms of my academic career, was participating as a member of the Oxford team in the 2017 International Genetically Engineered Machine competition (iGEM) supported by a Rokos Award.\*

# CODE BREAKER

*\*Rokos Awards support STEM (Science, Technology, Engineering and Maths) students looking to enhance their studies and scientific knowledge through summer research internships.*

**'I have enjoyed excellent support throughout my undergraduate years which has allowed me to nurture my passion. I would love to continue in academia'**

We were an interdisciplinary team of 12 undergraduates, and in January 2017 we started planning our summer research. iGEM was a fantastic opportunity as it was pretty much the only time during my undergraduate years that I have been able to design my own research fully, from the question subject through to which experiments would provide specific answers. We decided to develop a diagnostic for the neglected 'Chagas disease' (American trypanosomiasis), a tropical parasitic disease spread mostly by insects known as Triatominae, or "kissing bugs."

Throughout the project, I participated in lab work, outreach work with the general public and summer schools (including Pembroke) as well as product design. This put into perspective how much more there is to science than working at the bench. Our project won the award for Best Diagnostic, and since then I have also been lucky enough to be invited to

a conference at the Royal Society to speak about the skills that iGEM has given me as an early career professional.

I also recently completed an 18-week research project in the Computational Biology Unit at Oxford. Having the opportunity to learn to code and engage with a whole new skill set was something I jumped at – having always been encouraged by my tutor to stretch myself and tackle scientific challenges with enthusiasm! The research involved using molecular simulations to look at how an individual protein molecule responds to its environment. The scale I've been working on

is mind-bogglingly small; each protein is less than a ten-thousandth of a millimetre across, and the timescale is less than a millionth of a second. This has given me very detailed information that I could not have gleaned from 'traditional' experiments. I'm really glad that I didn't take a more familiar project this year, as I have gained a lot from the experience and actually would like to pursue this area of research in the future. Next year I will be starting a DPhil in Structural Biology, funded by the Wellcome Trust, and I will be staying on at Pembroke. I have enjoyed excellent support throughout my undergraduate years which has allowed me to nurture my passion and continue to succeed. I would love to continue in academia, and help spread my love of Biochemistry to new generations of scientists.



Zoe with her iGEM Prize

Below: Zoe with the rest of the iGEM team





# THE CHEMISTRY OF BIOLOGY: A NEW FRONTIER

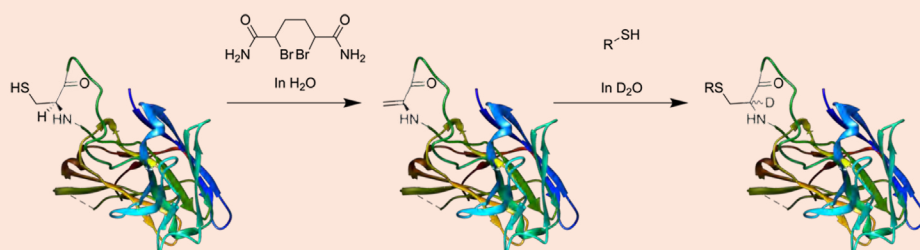
Professor Ben Davis, Pembroke Fellow and Tutor in Organic Chemistry, is looking at ways of understanding Biology using chemical techniques. His former Pembroke student Ben Bower (2014, DPhil in Organic Chemistry) looks at two recent papers published by Professor Davis and examines their potential impact.

## PROTEIN BACKBONES

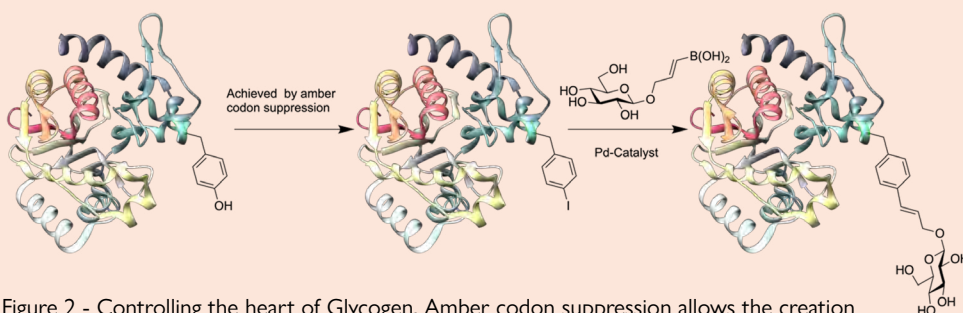
Hydrogen atoms exist as three different isotopes: Protium, Deuterium and Tritium. The natural high abundance of Protium means that in Biology it is very rare to find a Deuterium atom, and that for practical purposes, a defined position in a protein in a bulk sample will never have a Deuterium atom on the majority of molecules. Despite being rare, having a sample of protein with a Deuterium atom substituted position at a precise location offers unique potential to study how biological molecules work, due to the physical differences between Protium and Deuterium. These differences allow the study of proteins with little background interference and with minimal structural disturbance as a Deuterium atom differs by only a single neutron from what is found in Biology.

## 'The metabolism of Glycogen is associated with numerous diseases including Cancer, Lafora Disease and Glycogen Storage Disease.'

Professor Davis' method works by first constructing a protein with a cysteine (an amino acid of particularly low abundance and high reactivity) residue as at the desired site by using site-directed mutagenesis and recombinant expression in *E. coli* cells. The cysteine residue is then chemically converted to non-ribosomal amino acid Dehydroalanine. Next, all the water ( $H_2O$ ) in the protein solution is replaced by 'heavy water' ( $D_2O$ ) before reacting with a thiol nucleophile. This process is depicted in Figure 1. Professor Davis then employed this deuterated protein to better understand the chemical mechanism of how dehydroalanine is formed by observing where the deuterium atom was found in the reaction products. It is hoped that this work will impact on biological drug discovery.



**Figure 1** - Preparation of  $\alpha$ -Deuterated Protein - A cysteine residue is reacted with 2,5-dibromohexanediamide (DBHDA) in water, the protein is isolated then reacted with a thiol in heavy water to give the desired protein, precisely deuterated at a single site.



**Figure 2** - Controlling the heart of Glycogen. Amber codon suppression allows the creation of an iodo-phenylalanine mutant on tyrosine 195 of glycogenin GYG1, a Suzuki-Miyaura coupling is then employed to combine the protein and carbohydrate-boronic acid. GYG1 can then be used to study the kinetics of glycogenesis.

## A BETTER UNDERSTANDING OF GLYCOGENESIS

When the human body has an abundance of sugar it stores this excess as the molecule Glycogen, in a process known as Glycogenesis. Glycogen consists of a core protein molecule called Glycogenin (GYG) which is linked to large polymer chains made up of many Glucose units. GYG unusually acts as an enzyme on itself. The way that it does this is not fully understood, despite the fact that it sits at the heart of Glycogen.

Conventional methods of cellular expression of the Glycogen core will yield either GYG with no Glucose molecules attached (GYG0) or Glycogenin with a mixed number of carbohydrate residues (microheterogeneous GYG). Neither of these proteins allow the effective study of early stage Glycogenesis; the initial carbohydrate addition is so slow that the subtlety of any subsequent addition is lost when using GYG0, while the data generated from microheterogeneous GYG is impossible to interpret.

A team lead by Professor Davis solved the problem by first expressing a GYG variant with iodo-phenylalanine at the Glycosylation site using amber codon suppression then chemically adding the initial Glucose residue (GYG1). When GYG1 is exposed to conditions which allow further Glycosylation,

the kinetic subtlety can be studied. Kinetic analysis showed that the first two additions were slow, followed by a faster phase and then another slow phase. These results hint at the idea that both intra- and inter- molecular additions occur depending on what state the Glycogen is in. The metabolism of Glycogen is associated with numerous diseases including Cancer, Lafora Disease and Glycogen Storage Disease. By developing greater understanding of the mechanism, it is anticipated that better therapies for these diseases will be developed.

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# LOST IN TRANSLATION



**KEITH PAILTHORPE**  
(1979, BA MODERN  
HISTORY)

A-levels in modern foreign languages are in sharp decline, with the number of sixth-formers taking German falling so steeply that it has been overtaken by Mandarin. About 3,000 students sat German A-levels in 2018, a drop of 16 per cent on the previous year and a 45 per cent fall since 2010. French, traditionally the most popular modern foreign language, is now less popular, as students move away from humanities towards Science, Maths and Computing. Alumnus Keith Pailthorpe has been an educational leader for many years, often in communities that face financial and other challenges. He is now an OFSTED inspector and champion of widening-participation initiatives for young people. Here, he gives his unique view of the state of language tuition in the state school sector.

As a 13-year-old pupil in 1974, coming from a relatively low-income household, attending a very large and very average London comprehensive school, I was able to include French, German and Latin in my O Level option choices; the only compulsory subjects were English and Maths. There was some very general guidance to take at least one science subject, but essentially it was up to me. It was my fault if my results weren't good enough

to support my career choices. Schools might have had good or bad reputations locally, but systems of accountability were loose or non-existent.

In 1976, at Ruskin College in Oxford, James Callaghan, the Labour Prime Minister, made a ground-breaking speech in which he complained that education for the working class was "fitting a so-called inferior group of children with just enough learning to earn their living in the factory". Although his Government did little to change this, the following decades saw huge change with the arrival of a National Curriculum, national standards and OFSTED. Increased investment and even greater accountability followed, so that the climate existing in modern schools is a world away from what it was in 1974.

A child choosing GCSE options now will have far less freedom of choice than I did. He or she will probably have at least five compulsory subjects, with a fairly restricted list from which to pick three or four to study on top of those additional subjects. In many schools, the choice will be further narrowed to ensure that he or she makes selections that are notionally broad and balanced but which will also count towards those groups of subjects (known unfortunately as 'buckets') that count into the school's 'Progress 8' and 'Attainment 8' scores. These are the educational currency of our time and are used to rank schools into five bands of achievement – from 'Well Above Average' to 'Well Below Average'.

The subjects that now count into the different buckets were established by the Government. Under the influence of Michael Gove, the so-called English Baccalaureate (EBacc) was given a prominent position. The EBacc is not a specific qualification, but denotes a

combination of certain GCSEs – English, Mathematics, two sciences, a language and either History or Geography, but language may include Latin or Ancient Greek, rather than a modern foreign language.

It is the current Government's ambition that 75 per cent of pupils will take the EBacc by 2022 and 90 per cent will have started EBacc by 2025. However, in 2018 the numbers stood at just over 38 per cent nationally and have remained broadly at that level each year since 2014. Hidden within those figures is a real imbalance between schools serving relatively prosperous areas and those based in more disadvantaged communities, where it is common to find take-up of languages at closer to 20 per cent.

**'There is a real imbalance between schools serving relatively prosperous areas and those in more disadvantaged communities'**

The National Curriculum for Languages established three reasons for studying modern foreign languages: to liberate pupils from insularity; to open up their minds to other cultures; to foster pupils' curiosity and deepen their understanding of the world.

It is hard to see how anyone would object to these ideals. For four years in the 1990s, I taught "Histoire-Géographie" in



an international Lycée outside Paris. There were 10 mother-tongue languages taught in the school and you could hear any one of them in the corridors at any time of the day, although the pupils spoke French to each other and in the majority of subjects. The French Baccalaureate gave additional credit in its international option for pupils to tackle subjects like History and Geography in a foreign language. This was an exciting school to work in, although it was in a very smart and prosperous Parisian suburb and pupils came from very comfortable households.

Years later, back in the UK, I worked in a very different community as a headteacher from 2008 to 2018. My school served a disadvantaged community on the south coast and I had a number of difficult conversations with parents when I tried to persuade them and their children to take languages at options time. Research by the Sutton Trust and UCL's Institute of Education found that poorer pupils who took EBacc subjects actually closed some of the gaps between themselves and their more affluent peers. In my school, the languages department was particularly successful with these pupils, but it was still a fight to persuade parents and pupils to take them. They simply did not see how they would ever use them, nor did the young people see languages as being 'for them'.

**'It was a fight to persuade parents and pupils to take languages. They simply did not see how they would ever use them, nor did the young people see languages as being "for them"'**

Many of the pupils in my school had an insular background. It was common to find three generations of a family with no formal job, some with short-term seasonal work, and some living long-term within the benefits system. Education was something that they had to do, but in contrast with the multi-cultural communities I taught in inner London, parents on the south coast housing estates rarely saw education as a way to improve life chances for their children. We had pupils living three miles inland from the coast who had never seen the sea. Aspirations could be limited and prospects narrow. They didn't know anyone who had done anything differently.

On one occasion we took a party of pupils to France (for the first time for most of them) and on arrival at a French town, one pupil actually said in a shocked tone, "Sir, they're all

speaking French!" It was completely beyond his horizon.

By contrast, I was inspecting modern foreign languages in a state school in a relatively prosperous part of Sussex offering French, Spanish and German. Pupils achieved well in GCSE Languages, and they were a popular choice at A level. In one French class, pupils spoke with excellent accents and considerable accuracy. I asked whether they had visited France and one said her parents had taken her to France 12 times that year as they had a "place" there.

**'On arrival at a French town, one pupil actually said in a shocked tone: "Sir, they're all speaking French!"'**

The new Education Inspection Framework (EIF) proposed for September 2019 makes it increasingly difficult for a school to gain a Good or Outstanding OFSTED inspection grade without a strong take-up of EBacc, but in its submission to the EIF consultation this month, the Association of School and College Leaders stated, "We do not agree that EBacc is suitable for every pupil, and the target (three quarters of pupils) is unachievable because there are not enough foreign language teachers to meet this element of EBacc."

For many years I placed national advertisements for language teachers without receiving a single application! I would have struggled even more had it not been for the occasional appearance of an EU citizen with teaching qualifications, or by contacting universities directly to persuade linguists to consider a school-based training programme. Now that I have retired as an academy

principal I no longer have to worry about recruitment, but I do feel for my former colleagues.

The British Council's 2018 report on language teaching in schools in England sums up the current picture, where it states, "The principal finding this year concerns inequity in access to language learning at school. Schools in more disadvantaged circumstances tend to dedicate a shorter time to languages in Key Stage 3, allow pupils to drop languages after only two years and have lower participation at GCSE. Independent schools have higher take-up and more languages on offer, and provide more opportunities than state schools for international experience. Teachers report that the introduction of new, more rigorous GCSEs and A levels is depressing take-up and the increase in GCSE numbers delivered by the English Baccalaureate policy is now in reverse. There is a widening gap between schools which are moving towards the Government's ambition of 90% of pupils taking a language, and those where languages are not a priority. The Brexit vote has impacted on pupil and parental attitudes in some schools and this is exacerbating the divide."

Forty-three years after Callaghan's speech, I find it somewhat depressing that there is still a de facto division in our education system in provision for the poorest and the rest. The provision of Modern Foreign Languages is an indicator of that difference. Tragically, in many areas of the country, it is still the case that the factor having the greatest impact on a child's educational outcomes is not their ability, but the wealth and the background of their parents.

Keith as a headteacher at his former school, Eastbourne Academy (courtesy of the Eastbourne Herald)



# LANGUAGE CRISIS...

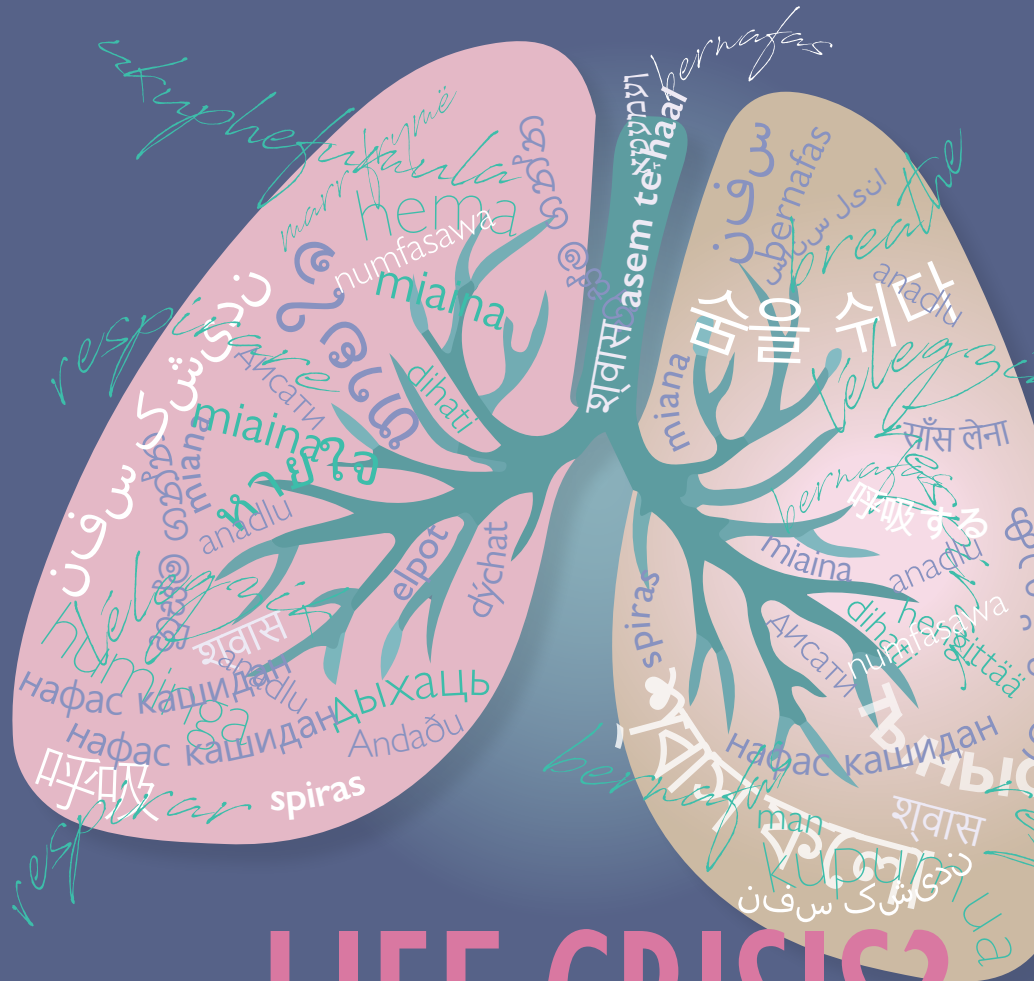


**DR TIM FARRANT**  
FELLOW IN MODERN  
LANGUAGES

The headlines will be familiar: GCSE, A Level and University language student numbers in decline. This year they have come unseasonably early, with both Oxford and Cambridge language leaders in the studios defending the essential – like Attenborough having to make the case for air. Yet that's where we are, as with the climate, with even instrumental arguments having difficulty taking off. Inadequate school resourcing, harsh and/or capricious GCSE and A Level marking, diminished subject-visibility, shrinking appreciation of the centrality of languages to national and international experience, falling uptake, school and university department downsizings and/or closures, have put us on an island where languages don't matter because 'everyone speaks English'.

There's no denying the realities, or the impacts: to begin with the instrumental, inadequate language competence costs the economy £48bn annually, with doubtless significant if less readily measurable negative effects on our diplomatic, geopolitical, and cultural agency, and our standing and position in the world. The real harms are far larger, and largely untold: bilingualism, institutionally denied to most UK children, develops greater mental flexibility than in monolinguals, increases facility in learning other languages, skills and subjects, and protects against dementia; learning other languages, their literatures and cultures, can increase empathy and understanding, via interaction with other ways of thinking, believing, saying, doing. It opens a whole world of possibility, of travel, actual and virtual, of different potentialities of being.

But UK language policy is virtually the opposite of the possible, of what it could, and ought, to be. By taking English as its platform, it locks learners into translation, and neglects and/or downgrades the precious heritage languages which many learners bring (53 languages other than English, in one local Oxford primary); heritage learners often neglect or abandon their languages for English as teenagers, negatively impacting their, and others', language and broader school performance.



# ...LIFE CRISIS?

### Students in a Pembroke Languages programme





Keith Pailthorpe eloquently details the real experience in schools in recent decades. In addition to the damaging 2004 decision to make languages optional from key stage 4, the hegemony of STEM has recast languages, along with other humanities subjects (art, music) as niche disciplines, luxury-studies where time, resources, and exam results permit: an infernal circle, if ever there was one. Yet things are looking up. The new GCSE and A Level syllabuses, if challenging, have more substantial content and are better geared to generate student interest and to future career and university needs. 2018 saw a marked increase in GCSE Spanish and German entries nationally, with a marginal uplift in GCSE language entries overall. The shake-up in UK University departments, which has seen many downsized and reconfigured, has created exciting new opportunities, in terms of subject-combination, study methods, and institution-wide language-learning.

**‘Languages are not just for the silly season, or for when you might think you need them, or for a crisis, but for life - as essential as air, as indispensable as breathing.’**

The language-crisis is literally that: a time of decision and possibility. Pembroke is peculiarly well-placed to face it. We are one of the larger language colleges, in terms of tutors and

students, offering an unusually wide variety of languages and subjects, with Fellows in French, Italian, Japanese, Chinese and Armenian, two Fellows in Arabic, and lecturers in German, Spanish, Linguistics, Russian, Arabic, Japanese and Portuguese. We are potentially unusually well positioned to teach the top five priority languages of the future, Spanish, German, Mandarin, French, and Arabic, but also those which are likely to grow in prominence, along with languages in combination with other subjects – English, History, Philosophy, Linguistics.

**‘The language crisis is literally that: a time of decision and possibility. Pembroke is peculiarly well-placed to face it’**

For over a decade, Pembroke has been proactive in innovation, with languages as the third subject, following Classics and Theology, in the Access Raising Aspirations programme, and, since 2013, the initiator and key partner in the London Centre for Languages and Cultures, now hosted at the Westminster Academy in Hammersmith, offering training and study-days for languages students and teachers, plus Easter and Summer-schools in Pembroke for students from non-traditional backgrounds. This initiative, run in London by a recent Pembroke History graduate, and in Oxford by an experienced secondary-school

Head of Languages, widens horizons by letting students encounter languages not as narrow academic disciplines, but as expressions and ways of access to ‘other’ areas - History, English, Cinema, Ethnicity, Culture, Belief, and Thought. Like the AHRC-Funded Creative Multilingualism Project, it takes languages far beyond the instrumental, and Pembroke has been proactive in workshops and conferences involving key language policy delivery and assessment stakeholders including the British Council, Speak to the Future, OFQUAL and Routes into Languages, as well as in College and University Access and Outreach initiatives.

But there are no grounds for complacency. As the European Commission President has observed, English is losing importance in Europe, and is unlikely to be as significant in the future. We could, and must, do a lot more going forward, in terms of reaching new constituencies, renewing but also communicating the value of our courses, showing how studying other languages and cultures deepens understanding both of others, and of your own; how the most unsuspected, ‘irrelevant’ topics can turn out to be just what you didn’t know you needed; how languages can take you anywhere, professionally and personally, globally; how languages are not just for the silly season, or for when you might think you need them, or for a crisis, but for life - as essential as air, as indispensable as breathing.

[www.theguardian.com/education/2019/may/11/modern-language-teaching-under-threat-from-tough-exams](http://www.theguardian.com/education/2019/may/11/modern-language-teaching-under-threat-from-tough-exams)

The launch of the London Centre for Languages and Cultures in January 2019



# IS JAPANESE THE NEW MANDARIN?



**WARREN STANISLAUS**  
(2017, DPHIL ORIENTAL STUDIES)

**It's an exciting time for Japanese studies in the UK and especially at Oxford.**

**Warren Stanislaus is a DPhil Candidate in History at Pembroke and has spent more than 10 years in Japan. He's been actively involved in Pembroke's Japanese taster day for sixth-formers and a careers day for undergraduates.**

Rumours of a decline in Japanese studies have been greatly exaggerated. Despite the rise in Mandarin Chinese in UK schools, the pull of Japan's cultural exports is as strong as ever with exposure to Japanese manga, anime, food and traditional arts just part of the picture. The Japanese government has made a long-term commitment to promoting the country's culture overseas as a way of nurturing more Japan fans. In 2018 the "Japan House" cultural centre opened its doors in London to showcase the best of Japanese design, and there will be a significant legacy from the Tokyo 2020 Olympic and Paralympic Games.

However, this cultural pull is a double-edged sword particularly in terms of university "exit points". Fascinated by everything Japanese, many students hope to maintain their connection with Japan but are often unaware of job opportunities. While the cultural and educational benefits of a degree in a difficult language are clear, the career paths are not.

Exit points are closely tied to the important issue of access to higher education. Prospective students from the most under-represented groups often opt for what are considered to be more practical degree subjects. Humanities and languages regularly lose out because of family pressure or financial considerations. Straddling both disciplines, unsurprisingly, Japanese has a participation challenge.

**'Many students hope to maintain their connection with Japan but are often unaware of job opportunities'**

I want to shift the narrative and communicate to students, parents, and teachers that Japanese is also empowering. With the strong support of Pembroke College, in the Michaelmas Term of 2018 we were able to

launch two key initiatives that are geared towards addressing some of these access challenges.

Firstly, in collaboration with the Oxford Careers Service, we created a Japanese Studies careers session, which was hosted at Pembroke, to provide guidance on how students can use their degree in the world of work or postgraduate study, as well as share real alumni stories. These pioneering meetings were a huge success and will become a permanent feature of the Japanese studies undergraduate and postgraduate degree programmes.

Secondly, Pembroke College hosted a Japanese Studies taster day last November. Welcoming students from Dartford Grammar School for a day of lectures, College tours, informal discussions and activities, we shared what it's like to study Japanese at Oxford. The school has over 80 students in the sixth form studying Japanese – one of the highest numbers in the UK – but few choose to pursue the language at university, frequently for the reasons outlined above.

Dr Linda Flores (Associate Professor of Japanese and Senior Pembroke Fellow overseeing the event) and Katy Simpson (teacher of Japanese at Dartford Grammar School) agreed that the taster day was an extremely valuable learning experience and that the initiative should be expanded. The students said they had come away with a completely different concept of Japanese studies. They talked about how they were now inspired to explore new options such as a gap year in Japan to learn the language; or how Japanese can be linked to other subject areas such as engineering; or how to apply to Oxford, after chatting with current undergraduates.

Anyone interested in Japanese Studies will be very welcome at the Oriental Institute Open Day on September 20<sup>th</sup>.

[www.orinst.ox.ac.uk/article/open-days](http://www.orinst.ox.ac.uk/article/open-days)

**Right:** Professor Linda Flores, Associate Fellow of Japanese at Pembroke  
**Below:** Sixth Form students from Dartford Grammar School visit Pembroke for a Japanese language taster day





# MY SUMMER IN KUWAIT

Thanks to the work of Dr Elisabeth Kendall (1989), Senior Research Fellow in Arabic and Islamic Studies, Pembroke students have the opportunity to take up summer internships in Oman and Kuwait. Imogen Faux (2011, BA European & Middle Eastern Languages) describes how her experiences in Kuwait have shaped her subsequent career choice.



**IMOGEN FAUX**  
(2011, BA EUROPEAN  
& MIDDLE EASTERN  
LANGUAGES)

Studying French and Arabic at Pembroke equipped me with some important tools to understand world affairs – especially Middle Eastern ones, of course. Pembroke is a great place for Arabic, with its roster of department staff and the chance to study some of the linguistic, religious, historical and literary codes that underpin the modern Middle East. This gave me a base on which to build knowledge and understanding of the region, both during my time at Oxford and beyond.

Those tools would have remained unused if it weren't for opportunities to test them. Fortunately, studying at Pembroke provided plenty of those opportunities. A year abroad in Cairo that coincided with the ousting of a president and a military coup was a good start. To navigate a beautiful, complex place like Egypt, fluency in politics is as

important as fluency in the local dialect. As a Pembroke student, I had access to several further chances to study and gain experience in parts of the Middle East, including a summer scholarship in Oman and an internship in Kuwait the year of my graduation.

**'It gave me the chance to  
activate my language skills  
in a professional context,  
branching out into unfamiliar  
Arabic dialects'**

I think it's fair to say these experiences crystallised an interest in the region that has threaded its way through my professional and personal life ever since. Coming out of Oxford determined to use my language degree but unsure how, the Kuwait internship was a chance to try out a range of career routes spanning aid and development,

communications, finance, marketing and retail. It also gave me the chance to activate my language skills in a professional context, branching out into unfamiliar Arabic dialects. Facilitated by the Kuwaiti-British Fund, I met people with valuable insight into the region – including a former Kuwaiti Ambassador to the UK, and the British Ambassador to Kuwait. It was a hands-on introduction to the world of work, and my interest was sparked by media and communications.

Having planned to go straight into an MA, I returned from Kuwait keen to get working, and was soon on a plane back to Cairo to take up a role at the independent paper, Al-Masry Al-Youm. The tools acquired during my time at Pembroke were put through their paces here. Advocating – in my own small way – the case for journalistic and religious freedom in post-revolutionary Egypt required some serious consideration of my world-view, in a place where acting on personal beliefs can have serious consequences.

Now back in London, I've switched from the reporting to the campaigning side of communications, working for a small agency supporting the environment and international development sectors.





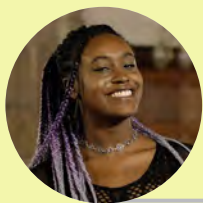
# CELEBRATING 10 YEARS OF ACCESS



We are proud to be celebrating the 10-year anniversary of the Pembroke Access Programme this year and the generous support and commitment given by alumni, fellows, and students that have made the programme what it is.

## THE AFRO-CARIBBEAN TYLER PRIZE

Raising the aspirations and attainment of Afro-Caribbean Students



**HOPE OLOYE**  
(2015, BA  
NEUROSCIENCE)

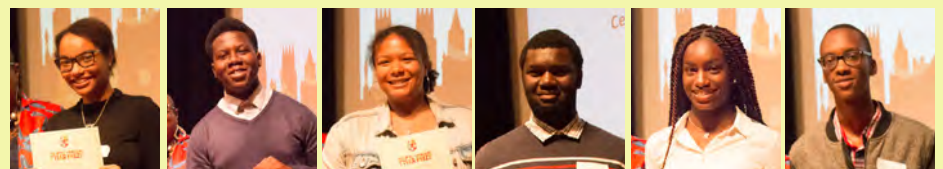
Having graduated from Pembroke in 2018 with a degree in Biological Sciences, Hope Oloye is the founding Director of the Afro-Caribbean Tyler Prize. Hope launched the initiative as an access and outreach project while at Pembroke, to tackle some of the barriers that deter African and Caribbean-heritage students from applying to Russell Group universities.

Coming from a state school in East London I didn't expect to feel as welcome as I did at Pembroke. Despite the myths I'd heard about Oxford, I was met with warmth and openness, as well as a stunning quad. However, after hearing about and getting involved in Pembroke's pioneering access and outreach efforts, I wondered why these messages weren't reaching and impacting my own community back in London. With black students making up around 1.5%<sup>1</sup> of our undergraduate student body in 2015, Oxford remained overwhelming white. Anecdotally, I knew Black people didn't feel Oxford was a place for them, and working closely with Academic and Access Officers as JCR president presented an opportunity to try to overcome some of the complex barriers facing Black students.

I knew that systemic inequalities mirror social issues such as imbalances in educational quality and achievement. Both formally and informally, students in more deprived regions have less access to the resources needed to bolster grades and the tools required for accessing higher education, especially elite institutions like Oxford. With Black students more likely to live in these areas, students perform less well in national examinations and are less likely to apply to university at all. However, while they are equally as likely to receive an offer post interview as their White counterparts, they're almost three

'My aim is to help inform the ways we tackle social issues, so that Pembroke can continue widening access - to create a society where opportunity is as evenly distributed as talent'

**Below (grid):** Some previous winners of the Afro-Caribbean Tyler Prize, 2018  
**Below:** Participants in an Afro-Caribbean Tyler Prize academic writing workshop



<sup>1</sup> Oxford University Admissions Report, 2019



times more likely to then turn this offer down. Through the implementation of a skills-based programme and the integration of a mentorship component, the Afro-Caribbean Tyler Prize aims to raise both the attainment and aspirations of a talented group of potential students.

Centred around an essay prize, students engage in socially-relevant topics which complement the formal curriculum. During the programme, they attend workshops aimed at building skills that are not only useful in producing work for the competition, but will help them in school exams and coursework. The essay itself is a central part of the Oxford learning experience; with some subjects requiring essays alongside student applications. It is an integral part of both the admission and the tutorial system. As part of the programme, students are allocated a Black undergraduate mentor, to provide help with essay-writing and insight into life as an Oxford student. The participants are finally invited to a celebration day at Pembroke, where they join tours and listen to panel discussions by students and tutors – a powerful way of de-mystifying the University.

**‘Students in more deprived regions have less access to the resources needed to bolster grades and the tools required for accessing higher education’**

As Director of the Programme, I, with the help of other Black students, design the questions and reading lists, coordinate the administration of the programme, train mentors and organise the celebration day. It’s a big task, but it’s shared with many capable volunteers across the University including, of course, Pembroke’s Access and Outreach office. With the help of this team, I’ve been able to propose an expansion of the programme to include public speaking and creative writing programmes. Since graduating, I’ve started working at a Social Neuroscience laboratory at NYU where I work on projects which examine the ways bias and prejudice manifest in behaviour. It’s the skills I’ve learnt during my year in New York that I hope to refine during my impending PhD programme starting next academic year. Here, I hope to integrate social psychological theory into educational approaches, providing a new lens to deconstruct the interacting problems affecting the Black community. More broadly, the aim is to help inform the ways we tackle social issues, so that Pembroke can continue widening access - to create a society where opportunity is as evenly distributed as talent.

## MY PATH TO PEMBROKE

As part of the celebrations, we recently caught up with some of our students and alumni who were involved in the Pembroke Access Programme and ongoing outreach efforts at College. To read these stories in full, visit: [www.pmb.ox.ac.uk/content/10-years-access](http://www.pmb.ox.ac.uk/content/10-years-access)



**ALEX LUNNON**  
BA History

“The programme helped me see Oxford for what it really is, and understand the process of getting there. It took away the fear factor, and meant I could make a much more educated choice about university.”



**ELIZABETH OLADUNNI**  
BA History and Politics

“My journey to Oxford was largely due to some of the amazing programmes I participated in whilst in Sixth Form. The Pembroke Access programme made me fall in love with learning, and with History in particular.”



**DAN McATEER**  
BA History

“The programme gave me a new-found desire to study at Oxford. I began to properly want it. I thrived and enjoyed the challenges of original sources and the breadth of the content we covered. I loved it. And I loved my degree, too.”



**BARKHAD YUSUF**  
BA History

“Although I came from an underprivileged background where I was the first person to go to university in my family, I felt I was much closer to keeping pace when I went. The programme has been the most influential aspect of my academic life – without it I wouldn’t have achieved some of the things I’m most proud of today.”



**IMOGEN RUNSWICK-COLE**  
BA Theology & Religion

“The programme is essential for those who don’t have access to a wealth of information about top universities. Without it, I would never have had the confidence to apply to Oxford. That is how important the programme is, it can change entire trajectories.”



**NEETU SINGH**  
BA English Language and Literature

“Meeting women, young women of colour, like me, from across the UK was incredibly empowering; it left me feeling like I belong at somewhere like Oxford.”



**QIANHUI YANG**  
BA Economics and Management

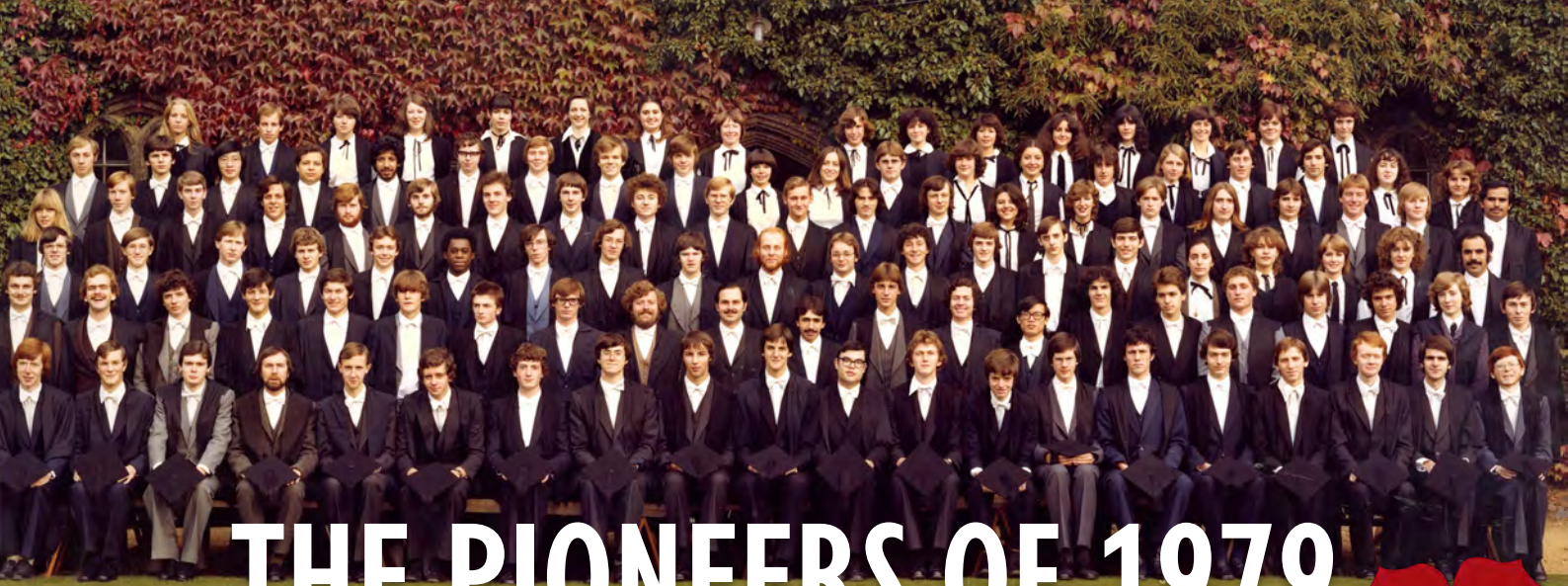
“It’s been a pleasure to be the JCR’s Access Rep in the past academic year. I’ve been really lucky to have worked with such an incredible Committee who have been so supportive in our access and outreach efforts.”



**VICTORIA LEWIS**  
BA Jurisprudence (Law)

“Pembroke’s Access scheme helped to diffuse any sense of inferiority which is often felt by state school students at Oxford and offered us a support network which would otherwise not have been there, and I believe this transformed the whole journey.”





# THE PIONEERS OF 1979

40  
Years of  
Women

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MICHAELMAS TERM 1979

**The first female undergraduates arrived at Pembroke in September 1979, just a few months after Britain's first female Prime Minister had entered Downing Street. Pembroke was one of 17 previously all-male Oxford colleges to admit undergraduate women in that year. Five colleges had blazed a trail in 1974 and Oriel became the last men's college to accept women in 1985. Forty years on, some of the pioneering Pembroke cohort reflect on how they were received and Francesca Echlin, a current student, assesses the impact of women on the College and asks if there are battles still to be won.**

*"I feel very privileged to have been part of the first female intake at Pembroke in 1979. As a mature student who hadn't written an essay in at least ten years, I knew leaving the corporate world to return to academia would be a challenge. So it seemed only natural to take on one more challenge by becoming part of a pioneering group, breaking with over 300 years of tradition.*

*It was special to be the first-ever female geographer at Pembroke. I'd like to say my degree was also a First, but I had to settle for a 2.1. Aside from academics, there were many other firsts. I was lucky enough to row in the first Pembroke Women's Torpid and VIII, and be part of the first Women's Rugby and Hockey teams. Although novices, we improved greatly under the patient coaching and enthusiastic support of the men.*

*The women were housed on a few staircases where the bathrooms had been converted, but my neighbour on staircase 12 turned out to be male, mistaken as "one of us" by his first name. I'm not sure if Brent Smith was either the most envied or pitied man in Pembroke!*

*I'm proud to have been in at the beginning of a new era at Pembroke. I made some great friends, both male and female, and my home in Wilmington, North Carolina, is full of memorabilia, including two blades which generate great interest from visitors."*



SUSAN HILL

*"I had made a conscious decision only to apply to colleges admitting women for the first time that year. There were several. Pembroke was my first choice because it had a reputation for "being good for medicine".*

*Being away from home for the first time I certainly was very unsure of myself but I don't think that was because I was one of the first cohort of females to grace the institution. All the older male undergraduates were very welcoming. At breakfast the first day I sat opposite an extremely friendly linguist (a friend for 40 years) who was insistent that I met one of the medical students in the year above and took me to his room. Not sure who was the most disconcerted when we found him asleep and naked!*

*My tutor had apparently been very opposed to having female undergraduates until he interviewed me and decided that I seemed acceptable. I never knew that he had been unsure about females at Pembroke and certainly afterwards he admitted many female medical students. In fact, all the academic staff were extremely welcoming and I never detected any sexism or misogyny. Having said that, it was a different era, and one of my favourite memories is the mixed rugby match where males played as in a three-legged race and women played wearing stockings and suspenders.*

*My favourite times at Pembroke were at the Boat Club, as a member of the first Women's First Eight and winning our blades. Our rowing kit looked positively antediluvian compared with a Lycra onesie. Our pink vests were simply smaller versions of those worn by the men."*

JEAN COLLIER







**JANE CARTER**

"What do I remember? In truth, only fleeting snippets. These are those that come to mind. The careful choosing of the prim and proper skirt and blouse that I wore for my interview, and the dark upstairs room in which it was held. I was from a state school and horribly nervous. Vernon Butt has joked with me subsequently that he was probably as nervous as I was – he had no idea what to expect of young women. This is interesting; he was not speaking entirely in jest. Were we really that alien?"

My room was at the top of staircase 16, where half of us were allocated – the other half being in the Macmillan building. Discovering that my next-door neighbour on the all-woman corridor was in fact male. One woman had dropped out at the last minute, and third-year Andy had managed to talk someone into allowing him to occupy it. That set the tone for our social life: Andy was loud, friendly, and generous with his whisky. Numerous friends crowded into his room in the evenings. I guess his popularity was further enhanced by his location. We listened to Motown, and rooms became fogged with cigarette smoke – which, somehow, I didn't mind.

At JCR meetings we debated earnestly, with how to support the plight of the Palestinians being quite a regular topic. We could still be debating that today. Aman Rai was the JCR president, and his girlfriend Lamia was Palestinian, so we had first-hand information. Although there were a few very conservative-minded individuals from obviously wealthy families in the college, the JCR was largely left-wing. When the scouts came out in strike over their wages and conditions, we supported them wholeheartedly. I became JCR Secretary in the second year.

At the end of the first year, I applied for and received a small travel grant from Pembroke to visit Nepal. That began a long fascination with the country, and I write this now from Kathmandu. My doctorate of 30 years ago was based on field research in rural Nepal, and now I am back, working for a Swiss development NGO. Having lived much of my adult life outside England, I've sadly lost touch with most people from university days. Aman is one of the few exceptions; just a couple of months ago my elder daughter and I went to his elder daughter's wedding. There is something very special about friendships that last over such a long period."



**RUTH SEFTON-GREEN**

"Coming from Camden School for Girls, founded by a progressive female educator in 1870, the idea of going to Pembroke, my father's Alma Mater, in the year that women were first admitted, made me think I would be a pioneer too. The reality, however, was somewhat different. When I arrived, I found to my disappointment that I had been exiled to the new (and rather ugly) building on the grounds that the rooms had mirrors and the building more bathrooms than in the quad. As one of the 30 women in the first year, we women joined forces and I value my steady friendship with one of my female peers. I only lived in college for one year and found the college atmosphere uncomfortable – I often had the impression many male eyes were watching me. The upside is that the experience bolstered my fight for egalitarianism, both in my professional and personal life. All the tutors were men. I have happy memories of stimulating discussions on moral philosophy in tutorials with Simon Blackburn, which were intellectually formative. I learnt a lot at Pembroke, which taught me how to learn; a beneficial lesson for life."

## SOCIETY NAMED AFTER EARLY PEMBROKE FEMALE BENEFACTOR

Recognising that women have played an important role in Pembroke's history for far longer than 40 years, the College has recently named its giving society – for those who have given in excess of £100,000 – the Sheppard Circle. This recognises Sophia Sheppard who, in 1846, made an immensely generous donation to Pembroke College which would be the equivalent of £1.4million today.

Sophia's connection with Pembroke came through her nephew, who matriculated in 1837, and her gift was inspired by the fact that candidates without personal wealth or parish livings could not afford to take up Fellowships at the College. She already had a longstanding connection with Oxford, having for a time managed the household of her brother, Martin Routh (one of her 12 siblings). Martin was President of Magdalen College from the age of 36 until his death in 1854 at the age of 99. Sophia's generosity was not limited to Pembroke; amongst other things she had built and endowed a school and alms-houses in memory of her late husband, the Revd. Thomas Sheppard.

When Sophia made her gift to Pembroke, such a large amount would have been incredibly important to the College's relatively young institution in Oxford, having been founded a mere 222 years beforehand. Support of all kinds is still hugely important today as we seek to continue educating and employing people from all backgrounds.

**Eleanor Mottram, Development Officer**

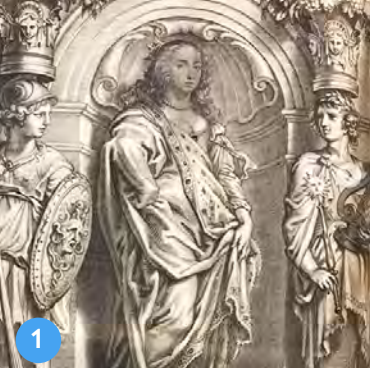
## 40 YEARS ON...



**Francesca Echlin (History and English, 2017) has been Pembroke's JCR Gender and Equalities representative for the past year. Here she acknowledges the legacy of the 1979 pioneers.**

As we celebrate 40 years of female students at Pembroke, the JCR is proud of its commitment to gender equality. It is an important part of day-to-day life in college. As the JCR's outgoing Gender and Equalities Representative, I run the college's feminist discussion group: "Peminists". We have held a wide range of conversations this year; from discussions on the Kardashian family brand to masculinity and mental health. Peminists approach high-brow and low-brow subject areas with vigour on a bi-weekly basis. For International Women's Day in March we celebrated by hosting a colouring, cake and chat party in the JCR. In Trinity term Peminists also formed an important part of Pembroke's Diversity Week timetable, holding a session on feminism and the beauty industry. Our JCR's dedication to gender equality will continue with our incoming JCR committee next year, paving the way for more conversations to be had on this hugely important topic. Equally, as we celebrate 40 years of women at Pembroke, we must thank all the inspirational women in our community. From our Master, Dame Lynne Brindley, to our tutors, porters and scouts amongst many others. Thank you for representing the power of women at Pembroke!





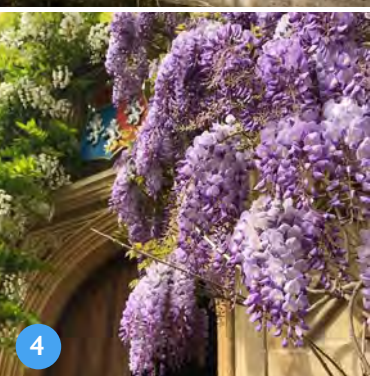
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The 2019 Annual Oxford Fulbright Distinguished Lecture in International Relations is delighted to welcome RT Hon David Miliband to Pembroke College this Friday, 21st June, examining the major shifts in international relations today. Please visit [bit.ly/2x0u4Tc](https://bit.ly/2x0u4Tc) @DMiliband



Matriculation 2018! Delighted to get this shot of our new students dressed in their subfusc, shortly before they formally joined the University. #WelcometoOxford



Happy #InternationalWomensDay! Today we celebrate the brilliant women creating positive change, leading innovative projects and crucial research as part of Pembroke, @UniofOxford and globally 🌟🌍🌟

@PEMBROKE

## A YEAR ON SOCIAL MEDIA

Are you one of @PembrokeOxford's c6,250 followers on Twitter (or one of the c2,000 following our Instagram)? From celebrating successes and sharing student and Fellows' research to College news and – of course- stunning pictures of Pembroke looking lovely, we have an active and vibrant social media presence. Here are our highlights of the past year...

Rob Salguero-Gómez

following

I was just inducted as a tutorial fellow of @PembrokeOxford. I'm thrilled to be part of its vibrant community of students, staff & academics, and I look forward to building collaborations there and instilling a sense of wonder and fascination for nature to its students

Pembroke is proudly flying the LGBTQ+ flag for LGBT History Month and Welfare Week 2019! 🌈 #pembrokeoxford #oxforduniversity



The ducklings have hatched here at Pembroke! After following mum around Old Quad earlier this morning, they'll be making their way down to the river to take the plunge! 🦆🌊

On Tuesday 26th Feb, Pembroke hosted best-selling author @MarlonJames5 for the seventh annual J.R.R. @TolkienLecture on Fantasy Literature, entitled 'Our Myths, Our Selves'. Click to read more & to watch James' lecture online! [bit.ly/2H3dji](https://bit.ly/2H3dji) #Tolkien #BlackLeopardRedWolf



Congratulations to @premillanadasen, Professor of History at @BarnardCollege who has been appointed as this year's Fulbright-Oxford-Pembroke Visiting Professor in Politics and International Relations! Click here to read more on her upcoming seminar series! [bit.ly/2J3uxLH](https://bit.ly/2J3uxLH)



## INSTAGRAM HIGHLIGHTS

- 1 Pembroke Library celebrates writer Margaret Cavendish, Duchess of Newcastle (1623-1673) as part of Women's History Month.
- 2 Enjoying UK Coffee Week with a Pembroke KeepCup!
- 3 The annual MCR Master's Ramble
- 4 Beautiful wisteria on the doorway...but can you guess which Pembroke staircase it's from?

- 5 Pembroke taking on Downing College, Cambridge in University Challenge
- 6 Dr Claire Petros (Biology, 2008) conservationist and lead vet at @oliveridleyproject recently completed an unprecedented 100km paddle board across Baa Atoll, Maldives, to raise awareness around the impact of plastic pollution.





**SIMON MILLS**  
(1985, BA HISTORY)

Rugby fans will be flocking to Japan in September for the Rugby World Cup. International championships are the ultimate test of a sports PR, when managing the players' activities "off" the pitch can be as important as explaining their match performance. Simon Mills (1985) was a sports journalist before spending 12 years managing PR and Communications for England Rugby. He now runs a sports consultancy.

So what does a good Sports PR do? I've spent far too long planning campaigns, organising access, balancing media and sponsor demands, handling corporate politics; all in the cause of maximising coverage and influencing its sentiment. Ultimately, you want to tell an entertaining story that drives engagement with your sport, team, and players. Take it back to a journalistic first principle. Set out to tell people something they don't know.

Here's England scrum-half Ben Youngs on decision-making on the field: "You need to have a perfect picture of the pitch in your head: how many players do they have around the corner, who's back on the short side, who just made that tackle, is he back on his feet yet, can I go through that space? Your brain is constantly ticking over with information, without you even being consciously aware of it. About the prop who might be down after a tackle. He's only just got onside, he's knackered, we'll hit him on this phase".

The first online reader comment was: 'Why can't more journalism be like this?' There is still a dearth of genuinely insightful, interesting

content out there. The same reasoning goes for opening up your sporting operation to 'show and tell', allow behind the scenes access, give people the tools to produce good stories. Confident sports are able to make that leap.

Of course, sometimes you have to shut things down. There are plenty of Malcolm Tuckers in my business but there's more to gain in the long term from some Glasnost and Perestroika. England's football team, under a measured, enthusiastic manager in Gareth Southgate, have done exactly that. Before the last World Cup, Southgate made every single squad member available at a tournament preview media event. As a statement, it signalled an intention not to be defensive slaves to delivering a daily news line.

**'...give people the tools to produce good stories. Confident sports are able to make the leap'**

The Football Association were equally grown-up in the way they defended Raheem Sterling for having a tattoo of a gun on his calf by making sure he could properly articulate the personal reasons behind it.

Others struggle to make the leap. I visited British Rowing in Caversham this year, where they're tying themselves in knots in an attempt to change their culture. The rowing environment has been very coach-led; athletes do what they're told and everyone fears giving away performance information to rivals. The result is that an Olympic medal-making machine loses out to hungrier sports competing for print, screen, and online space. Big numbers, particularly from your own social



channels, can drive awareness, support, and participation. In rowing, Jurgen Grobler is one of the most successful Olympic coaches of all-time, yet he's almost invisible as an advocate for the sport.

Being truthful, open, and transparent doesn't always work when your players get it wrong, though. I've taken early morning calls from police stations, mopped up after doping hearings and had my head in my hands fielding phone calls from the Dwarf Sports Association (it does exist) furious about the behaviour of rugby players in a bar.

Cricket is giving us a good example of how not to do it. The England and Wales Cricket Board have bet the farm on The Hundred, the franchise-style 100-ball a side tournament that arrives next year, and have given opponents acres of room in which to ridicule it. Never launch anything without the detail being nailed down. And make sure you have a robust explanation of why you're doing it.

This year England cricketer Alex Hales was suspended and then left out of the side for the ICC World Cup for recreational drug use. The ECB didn't have processes in place — most other sports do — to deal with it proactively. It ended up looking like a cover-up. "We have been working on it to try and find values that everybody can adhere to," said Eoin Morgan, England's one-day format captain. "Unfortunately Alex's actions have shown complete disregard for those values. This has created a lack of trust between Alex and the team."

The players were open, honest and got it right. They usually do. Sports and their PR people should trust them more.

# MANAGING



# THE SCRUM



# ARE YOU CONNECTED TO PEMBROKE?



We can be found daily on Twitter, Facebook, LinkedIn and Instagram - plus our YouTube channel (**/PembrokeCollege**) is bursting with short films on subjects, access and admissions and life at College.



Recent Instagram highlights include these stunning pictures (**pembrokeoxford**)



We have two Facebook pages: **Pembroke College, Oxford** for news and information and **Pembroke College Oxford Alumni**, which is where we put all alumni event photos

Finally, LinkedIn (**Pembroke College Oxford**) is worth connecting with for news and debate with College, alumni and Fellows

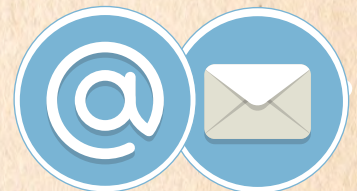


## Other ways to be in touch?

www

Our website has the most up to date news and events and all information for alumni (**[www.pmb.ox.ac.uk](http://www.pmb.ox.ac.uk)**)

Your email and current postal address help us make sure you're receiving invitations to events and college news - make sure you're on the mailing list by emailing **[development@pmb.ox.ac.uk](mailto:development@pmb.ox.ac.uk)** with all your details



Or, if you'd rather, pick up the phone, drop us a line or even pop in and say hello at...



**The Development Office  
Pembroke College  
Oxford OX1 1DW  
01865 286080**