

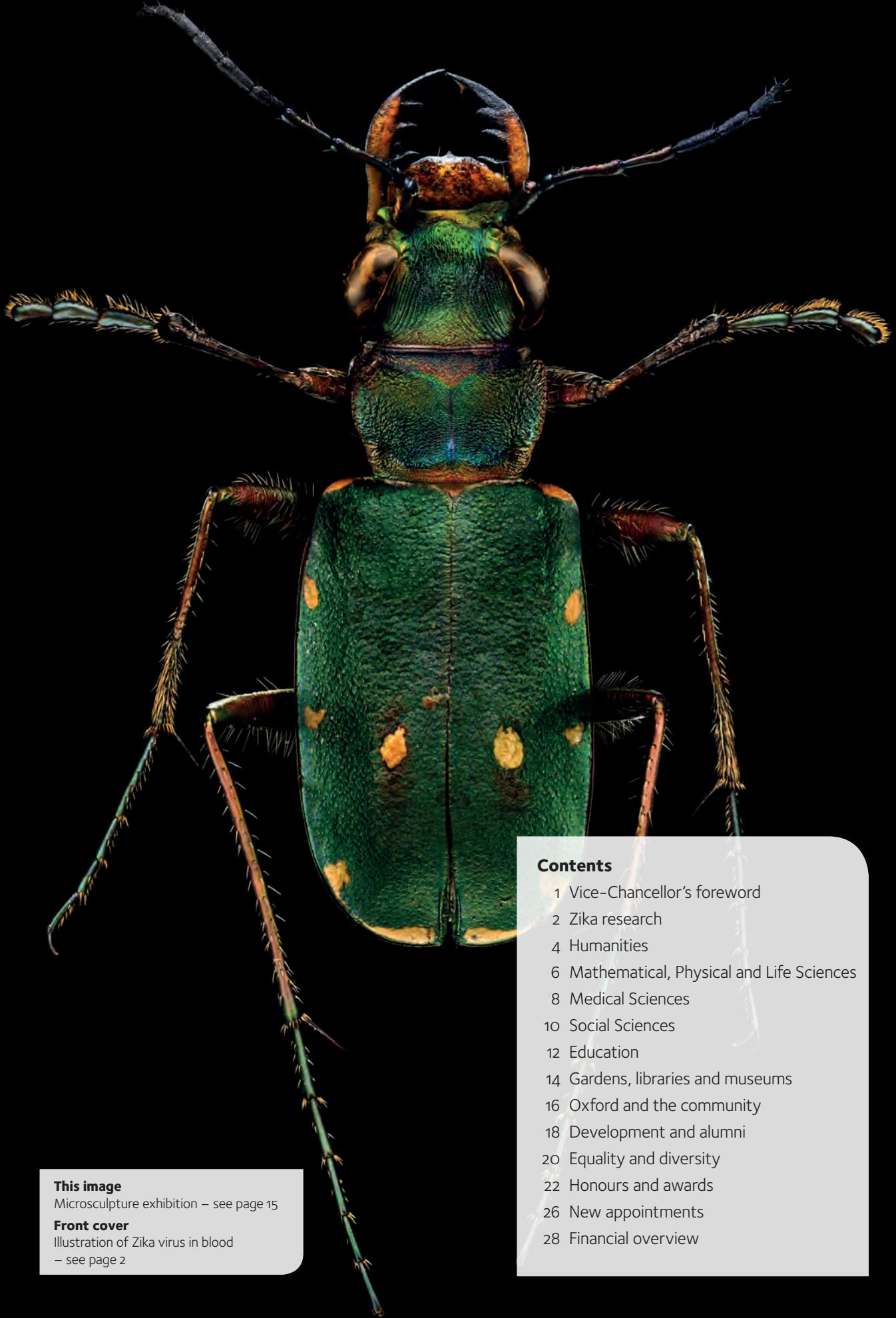


UNIVERSITY OF
OXFORD

Annual Review 2015/16



Oxford researchers
are major contributors
to the global response
to the Zika epidemic



This image

Microsculpture exhibition – see page 15

Front cover

Illustration of Zika virus in blood
– see page 2

Contents

- 1 Vice-Chancellor's foreword
- 2 Zika research
- 4 Humanities
- 6 Mathematical, Physical and Life Sciences
- 8 Medical Sciences
- 10 Social Sciences
- 12 Education
- 14 Gardens, libraries and museums
- 16 Oxford and the community
- 18 Development and alumni
- 20 Equality and diversity
- 22 Honours and awards
- 26 New appointments
- 28 Financial overview

Vice-Chancellor's foreword

2015/2016 has been quite a year for Oxford, for higher education generally, for Britain, and for my family and me personally.

The highlight was Oxford's number 1 ranking by the *Times Higher Education Global Rankings*. This is the first time any British university has achieved the top spot and is a wonderful recognition of the extraordinary research and teaching that takes place here. 3 British universities were ranked in the top 10 globally and the UK was home to 6 of the top 10 European universities.



While Scotland has decided to remain in the Union, Britain has decided to leave the European Union and my family and I have moved from Scotland to Oxford.

Not a day has gone by since I arrived on 1 January 2016 that I have not marvelled at my good fortune in belonging to a dynamic, cosmopolitan, meritocratic community of brilliant academics, committed professionals and bright and aspiring students.

In the pages that follow we have sought to capture just some of the extraordinary work that takes place across our four Divisions of Humanities, Social Sciences, Mathematical, Physical and Life Sciences, and Medical Sciences. We also provide a glimpse into our museums, libraries and gardens, our role in the local community and our efforts to enhance the diversity of our students and staff. We provide an overview of core information about the University, our priorities, finances and relationships. We also provide evidence of the remarkable support we received from committed alumni and friends who generously support our work.

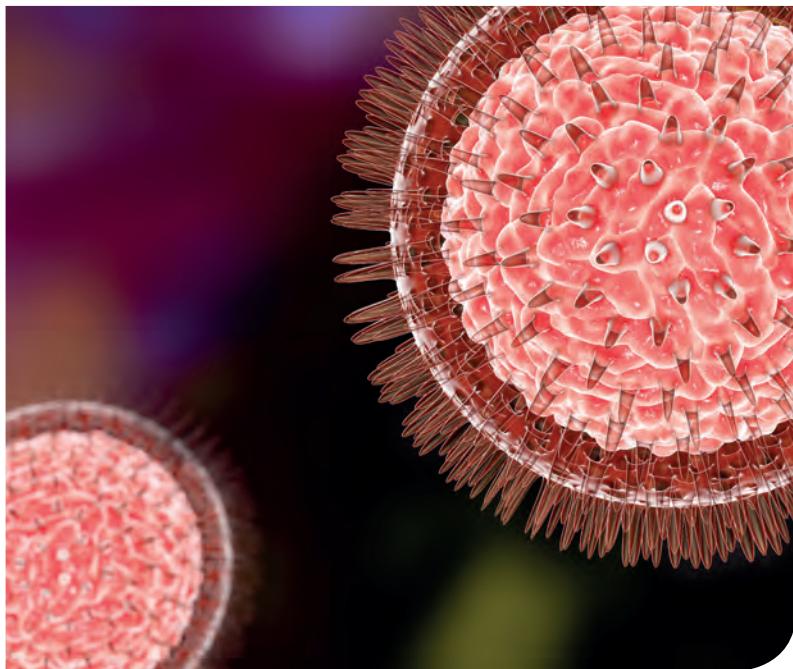
In these uncertain times we take great pride in our experts, whatever their nationality, and we derive strength from our belief in the enduring value of the research and teaching we do and the values that we share.

A handwritten signature in blue ink that reads "Louise Richardson".

Professor Louise Richardson
Vice-Chancellor

Zika research

Computer illustration of the Zika virus



“To date, 2,298 cases of microcephaly and/or malformations of the nervous system potentially associated with Zika virus infection have been reported in 28 countries worldwide. The catastrophic impact on the lives of these mothers and infants is difficult to appreciate, as indeed is the anxiety created for hundreds of thousands of pregnant women in the affected regions. Health professionals are struggling to cope with the consequences. The WHO may have declared that there is no longer a Public Health Emergency of International Concern, but the virus will continue to cause damage. Concerted action is needed to address this human tragedy.

Stephen Kennedy, Professor of Reproductive Medicine and Head, Nuffield Department of Obstetrics & Gynaecology

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The Zika crisis was one of the biggest news stories of 2016. Was it linked to the birth defect microcephaly? Would it disrupt the Rio Olympics? How far would the virus travel?

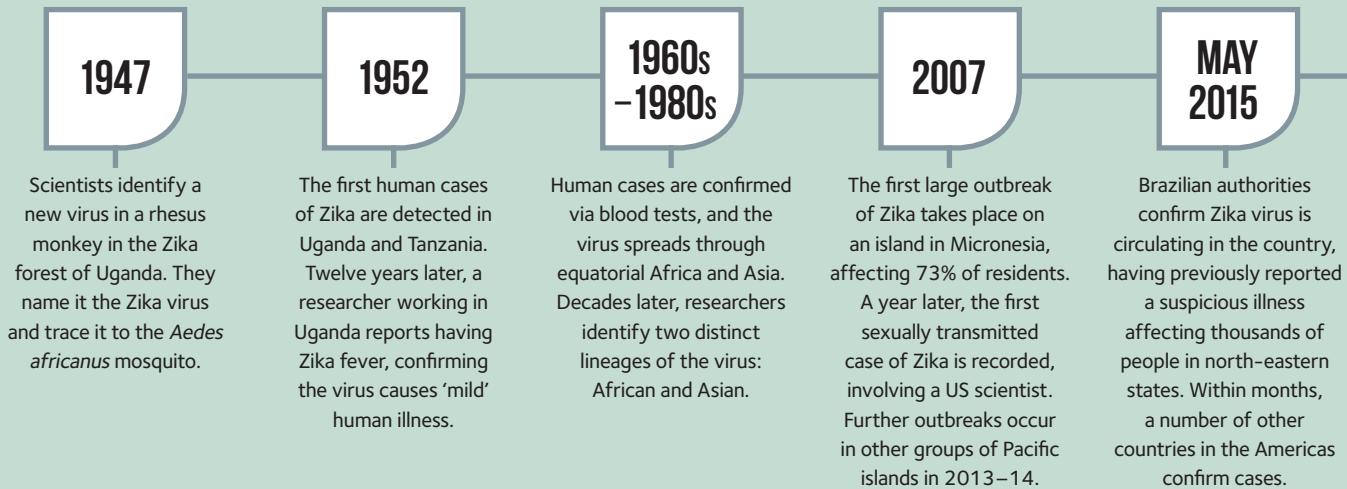
As a world leader in medicine and life sciences, Oxford was at the forefront of efforts to understand the Zika virus. Multidisciplinary research across the Medical Sciences and Mathematical, Physical and Life Sciences Divisions gave new insights into this mosquito-borne virus, which had continued to spread – primarily across the Americas – since its outbreak in Brazil in 2015.

While for most people Zika is a mild infection involving symptoms such as fever and headache, its potential link to microcephaly – an abnormal smallness of the head that may harm a baby's brain development – was alarming for women and their partners expecting a baby or thinking about pregnancy.

In March this year, shortly after the WHO declared the Zika crisis to be a public health emergency, it was announced that three Oxford teams would begin research projects focused on the virus, backed by UK government funding released to help tackle the disease.

Professor Stephen Kennedy from the Nuffield Department of Obstetrics and Gynaecology leads a multidisciplinary team that aims to create an online platform for scientists and clinicians

TIMELINE



to share images of foetal and newborn heads – critical for improving understanding of how Zika causes brain damage, and for developing better screening tests.

Professor Kennedy and Professor José Villar also led an international project, published via a series of papers in *The Lancet* medical journal by the INTERGROWTH-21st Consortium, which produced a set of charts to enable healthcare professionals worldwide to assess the weight, length and head circumference of newborns. The charts, now adopted by WHO, are gestational-age specific and can be applied to all newborns, regardless of race or ethnicity. And, in the context of the Zika virus epidemic, they provide a vital frontline tool to screen for microcephaly.

Meanwhile, Professor Zoltán Molnár from the Department of Physiology, Anatomy and Genetics is carrying out research in mice to explore at the cellular level how Zika might cause microcephaly, adding to science's understanding of the fundamental processes that could be targeted to prevent the virus causing this serious growth deformity.

And Dr George Warimwe, now of the Centre for Tropical Medicine and Global Health, is studying the transmission of Zika in an area of East Africa, providing vital information on how the disease could spread.

At the same time, researchers in the Department of Zoology provided the first genome analysis of the outbreak, demonstrating that the virus arose in the Americas from a single introduction, estimated to have taken place between May and December 2013, more than 12 months prior to the first detection of Zika in Brazil. Study author Professor Oliver Pybus described how this estimated date of origin coincided with an increase in air passengers to Brazil from other Zika-affected areas, as well as reported outbreaks in the Pacific Islands. The Oxford researchers worked with scientists from around the world on the study, including many from leading institutions in Brazil.

Also in the spring, researchers from the Department of Zoology reported that the southeastern United States, including much of Texas through to Florida, had ideal conditions for the spread of Zika. Lead author Dr Janey Messina said the new maps revealed priority regions where authorities should concentrate their efforts. A few months later, the first locally transmitted cases in the mainland United States were reported in Florida.

For many scientists, the Zika outbreak bore striking similarities to the Ebola crisis. Oxford's infectious disease specialists applied some of the lessons learned from Ebola to help support medics and other researchers to get ahead of the new pathogen. Two Oxford-based organisations, the Global Health

Network (GHN) and the International Severe Acute Respiratory and Emerging Infection Consortium (ISARIC), were instrumental in providing portals that would, among other things, share crucial data on the outbreak and identify research priorities. Professor Trudie Lang, Head of the GHN and a member of ISARIC, explained how the Ebola crisis demonstrated that this gathering and sharing of information could be carried out even more efficiently to give researchers the best chance possible in the fight against Zika.

The Zika crisis is far from over, with an increase in cases recently reported across south-east Asia, bringing the total number of countries affected to well over 70. As the virus spreads, Oxford researchers will continue to lead the way – across a host of disciplines – in finding new ways to understand and tackle the virus.

In 2015 a previously unknown connection between Zika infection in pregnant women and microcephaly in newborns was reported



OCT
2015

Brazil reports an unusual increase in the number of cases of microcephaly – a rare condition affecting babies' head size – among newborns. The following month, the country declares a public health emergency amid a further rise in suspected microcephaly cases, as well as an increase in neurological conditions such as Guillain–Barré syndrome and the first deaths associated with Zika infection.

FEB
2016

WHO declares that the recent association of Zika infection with clusters of microcephaly and other neurological disorders constitutes a Public Health Emergency of International Concern. Meanwhile, the United States reports a case of sexual transmission of Zika infection in Texas. In April, the first two cases of the Zika virus are reported in Vietnam.

AUG
2016

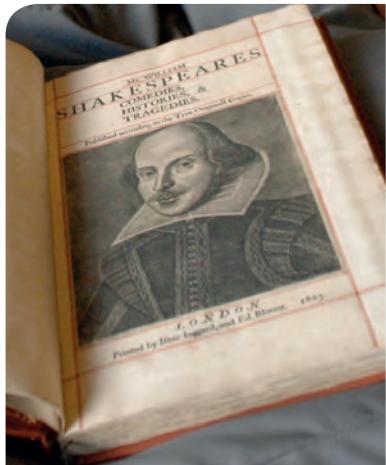
The Olympic Games take place in Rio de Janeiro, with a number of athletes – mainly golfers and tennis players – pulling out over concerns about Zika. The WHO later says there were no confirmed cases of Zika among travellers or athletes.

SEPT
2016

Based on a review of the evidence, WHO concludes that Zika virus infection during pregnancy is a cause of microcephaly, and that the virus is also a trigger of Guillain–Barré syndrome. A month later, Thailand reports two babies born with Zika-associated microcephaly – the first such cases in south-east Asia.

Humanities

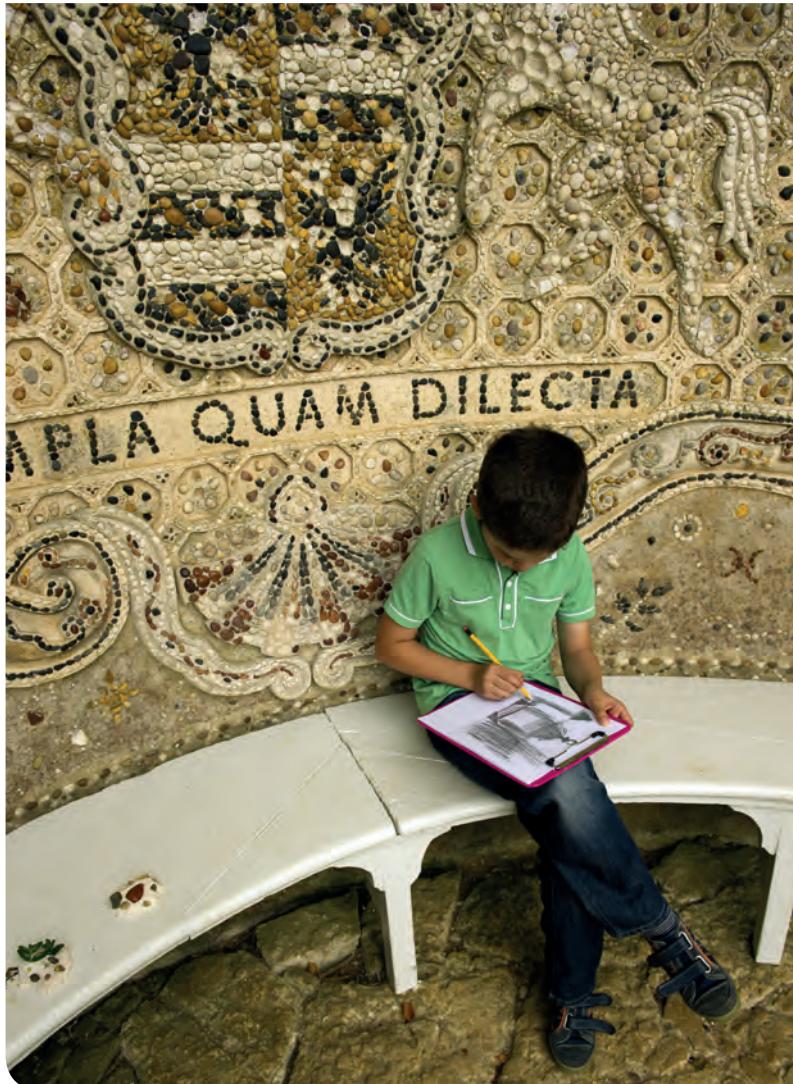
*The copy of
Shakespeare's
First Folio
discovered at
Mount Stuart*



Finding a First Folio on a Scottish island

When staff at Mount Stuart on Scotland's Isle of Bute first told Emma Smith that they had a First Folio, she did not believe them. But Oxford's Professor of Shakespeare Studies decided to visit the island anyway. After analysing the watermarks, the idiosyncrasies of the text and the history of the owner of the book, she was amazed to find it was genuine. 'It was a really exciting moment,' she said. 'First Folios are such charismatic books.' Around 230 First Folios are known to survive, and it is

one of the most valuable books in the world. This year was also the 400th anniversary of Shakespeare's death. In the same year, Professor Smith published a book with Oxford University Press which investigated the events leading up to the publication of the First Folio, and curated an exhibition at the Bodleian's Weston Library. The exhibition was called 'Shakespeare's Dead' but, given the enormous interest in the anniversary and the Folio discovery, his legacy seems very much alive.



Helping heritage sites engage visitors

Oxford academics are using research to help the National Trust enliven the visitor experience at their properties. The Trusted Source project is an InnovativeUK and AHRC-funded Knowledge Transfer Partnership which uses the expertise of researchers in TORCH, The Oxford Research Centre in the Humanities, to create an online knowledge bank of bite-sized information about the National Trust's famous sites. National Trust staff and visitors can use this resource for displays, exhibitions and schools visits. 'It is particularly exciting that so many DPhil students and early career researchers have got involved in this project,' says project leader and Oxford historian Dr Oliver Cox. 'It gives them good experience of public engagement, and it allows National Trust visitors to benefit from the work of these enthusiastic and talented researchers.'

*A young visitor sketches in
the pebble alcove at Stowe
Landscape Gardens*

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Working with Humanities scholars gives my science work a deeper and more satisfying framing – and also leads, perhaps surprisingly, to new science.

Tom McLeish, Professor of Physics, Durham University, speaking at a TORCH event on his recent book *Faith & Wisdom in Science*

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Taking Stravinsky to London

An Oxford academic helped to organise a major festival devoted to the music of Russian composer Igor Stravinsky this year. Jonathan Cross, Professor of Musicology, was the series consultant for the festival, which centred on a series of performances by the Philharmonia Orchestra at London's Royal Festival Hall. As well as working with conductor Esa-Pekka Salonen to shape the programmes themselves, Professor Cross gave talks to the audience before concerts, took part in broadcasts on BBC Radio 3, and led study days. He also helped to produce films and digital materials for the series website, and edited the extensive programme book. This allowed him to reach a new, large audience with his research on Stravinsky.

'I wanted people not just to hear Stravinsky's music in the abstract, but to think of the composer whose life was affected by two world wars, revolution,

emigration and tragedy, how those contexts left their mark on his music, and how his music in turn left its mark on the 20th century,' he explains.



The Philharmonia Orchestra and Armitage Gone! Dance performing *Agon* at the opening of the Stravinsky festival

Ruskin Master of Fine Art completes first year

The first cohort of students completed the Master of Fine Art at the Ruskin School of Art this year. The course is based in the studio, and combines tutorials and seminars with discussions of contemporary art history and theory. Students made good use of the Ruskin's new state-of-the-art building on Bullingdon Road, which contains a multi-media lab, editing suites, wood and metal workshops and a print room. 'An exciting feature of the MFA course is that it adapts to the interests of our students,' explains Anthony Gardner, the Ruskin's Director of Graduate Studies. 'We tailor the curriculum of reading and

discussion to the priorities and concerns of the group. We aim to provide a demanding yet supportive environment that allows you to engage with what it means to work as an artist today.'



An MFA student at work in his studio



As part of *Live Fridays*, in which members of the public enjoy a themed evening at the Ashmolean Museum on a Friday night, the museum's objects are the stars of the show. But many Humanities academics have also helped to bring these objects to life for the public by giving bite-sized and interactive talks at these popular evening events. In November, TORCH, The Oxford Research Centre in the Humanities, teamed up with the Ashmolean to run *FRIGHTFriday*, which explored the art and science of hope and fear. Researchers across the Humanities faculties took part in the event, which was also the Festival Finale for the national Being Human Festival of Humanities. One of the highlights was a 'gameshow' quiz led by historian Professor Steven Gunn based around his research into accidental deaths in Tudor England.

FACTS & FIGURES:

1ST

Oxford Humanities has the most researched assessed as world-leading in the 2014 Research Excellence Framework (REF)

During 2015/16 external research awards totalled

£17.4M

75%

of Ertegun Scholars completing their course gained distinctions

350

research-led events supported by TORCH

£4M

– the Arts and Humanities Research Council award for the Oxford-led research project Creative Multilingualism which will explore the link between linguistic diversity and creativity

Mathematical, Physical and Life Sciences

The UN World Food Program distributes rice in the West Point township in Monrovia, Liberia

'Turbocharged' rice could help reduce world hunger



A long-term project aimed at improving photosynthesis in rice has entered an important new phase, marking another step on the road to significantly increased crop yields that will help meet the food needs of billions of people across the developing world.

Led by scientists at Oxford with funding from the Bill & Melinda Gates Foundation, this stage of the international collaboration builds on existing work, with the ultimate aim being to 'turbocharge' the photosynthesis process by introducing more efficient traits found in other crops.

Rice makes use of a type of photosynthesis known as C₃, which in hot dry environments is much less

efficient than the C₄ method seen in plants such as maize. If rice could be 'switched' to use C₄ photosynthesis, productivity could be increased by 50%.

And with almost a billion people around the world living in hunger, boosting rice productivity is crucial to achieving long-term food security – particularly in areas such as South Asia and sub-Saharan Africa, where 80% of the food supply is provided by smallholder farmers.

Professor Jane Langdale from the Department of Plant Sciences, who leads the project, said the research provides one of the most plausible solutions to the 'unprecedented' food shortage facing much of the world's population.

Huge helium discovery 'a life-saving find'

Researchers from the Department of Earth Sciences have helped develop a new approach to gas exploration that led to the discovery of a huge reserve of helium in Tanzania.

Helium is crucial to many of the things we take for granted, from MRI scanners in hospitals to welding and nuclear energy.

Until now, though, helium has never been found intentionally – it is usually discovered accidentally in small quantities during oil and gas drilling. The new method is based on the premise that volcanic activity provides the intense heat necessary to release helium from ancient gas-bearing rocks.

Professor Chris Ballentine, part of the Oxford team, said: 'We have identified potential underground reserves of helium that could fill 1.2 million medical MRI scanners. This is a game-changer for the future security of society's helium needs, and similar finds may not be far away.'

Researchers found that volcanic activity provides the intense heat necessary to release gas from ancient helium-bearing rocks



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Oxford's science and engineering research is characterised by excellence in core disciplines, interdisciplinary innovation and successful exploitation for societal and economic benefit.

Professor Donal Bradley, Head of the MPLS Division

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Queen's Anniversary Prize for biomedical engineering

Oxford's pioneering work in biomedical engineering has been recognised with a Queen's Anniversary Prize.

Awarded every two years, the Queen's Anniversary Prizes recognise universities and colleges that have demonstrated excellence, innovation, impact and societal benefit.

Oxford's Institute of Biomedical Engineering (IBME), a research institute in the Department of Engineering Science, has been at the forefront of innovation in medical technology for the past seven years, hosting world-leading projects such as the first human liver to be kept alive at body temperature outside the body.



Professor Eleanor Stride is carrying out research into novel methods of therapy and drug delivery at the IBME

Research carried out at the IBME, often in collaboration with Oxford clinicians, has also led to the establishment of numerous commercial spinout companies.

Professor Alison Noble, Director of the IBME, described the award as 'very special for our still relatively young institute'.

Artificial intelligence solves famous Google puzzle

Oxford has become a leading centre for research in machine learning and artificial intelligence (AI), and researchers in the Department of Computer Science have been working on Google DeepMind AI projects.

Earlier this year, a team led by Professor Nando de Freitas and several DPhil students developed an AI that could solve the '100 hat' puzzle reportedly used by Google in job interviews.

In the puzzle, 100 prisoners stand in line, one in front of the other. Each wears either a red or a blue hat. Prisoners can only see the hats of the people in front of them. Starting at the back of the line, a guard asks each prisoner the colour of their own hat. If they answer correctly,

they will be pardoned. This conundrum proved no match for the AI.

Also this year, DPhil student Nal Kalchbrenner was part of the DeepMind team that developed a computer program to play the Chinese game Go. The program beat the human world champion.



World champion Go player Lee Sedol was beaten by Google DeepMind's Alpha Go computer program in a historic five-game match



Professor Henry Snaith of the Department of Physics, a pioneer in new solar cell technologies, has had a hugely successful year, being named one of the world's most influential scientific minds by Thomson Reuters and awarded the prestigious Kavli Medal and Lecture by the Royal Society.

FACTS & FIGURES:

1ST

Research in the Mathematical, Physical and Life Sciences Division was ranked first in the UK in the most recent Research Excellence Framework (REF)

14

companies were spun out of research carried out across MPLS in 2015–16

2,400

full-time equivalent researchers, teachers and staff are employed at MPLS

3,400

undergraduate and

2,500

postgraduate students

£135M

external research income was granted to MPLS in 2015–16

Medical Sciences

Saving lives

An interactive smartphone game developed by doctors in Oxford and Kenya will provide vital emergency care training to African healthcare workers, addressing the tragedy of the 470,000 babies who die each year in Africa on the day they are born.

The scenario-based game, known as Life-saving Instruction for Emergencies (LIFE), teaches healthcare workers to identify and manage medical emergencies, using game-like training techniques to reinforce the key steps that need to be performed to save the life of a newborn baby in distress.

Developed thanks to generous donors who gave money via a crowdfunding campaign, and produced in collaboration with Oxford's Department of Education, the game is based in a hospital and involves interactive 3D simulations of various emergency scenarios.

The research team, led by Professor Mike English, Dr Chris Paton and Dr Hilary Edgcombe, will also be exploring with programmer Jakob Rossner and HTC how a virtual reality version could offer even greater levels of realism.

'In Africa, the day a baby is born is also the day it faces the greatest risk of death,' explained Professor English of the Centre for Tropical Medicine and Global Health. 'With face-to-face training, we have reached only a tiny proportion of the 2.5 million African healthcare workers. We need a system that enables everyone to access and learn the essential steps to save babies in an emergency. This is what we're aiming to do with our LIFE platform.'

Friends are 'better than morphine'

People with more friends have higher pain tolerance, Oxford research has found.

Katerina Johnson, a doctoral student in the Departments of Psychiatry and Experimental Psychology, studied whether differences in our neurobiology may help explain why some of us have larger social networks than others. Participants in the study were asked to complete a questionnaire on their social circles, as well as providing information on lifestyle and personality, before performing a physical exercise – the 'wall-sit test' – to discover their pain threshold.

Those with larger friendship groups tended to have a higher tolerance for pain – even when allowing for individual fitness levels.

The results add to the body of research around the links between social bonding and the production of endorphins, our bodies' natural painkillers.



"

Being lectured by people who are world leaders in their field is awe inspiring and gives an edge to my learning. I'm currently in my third year and love the freedom and self-direction of my research project.

Alex, third-year Medicine student

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Gene therapy shows long-term benefit for treating rare blindness

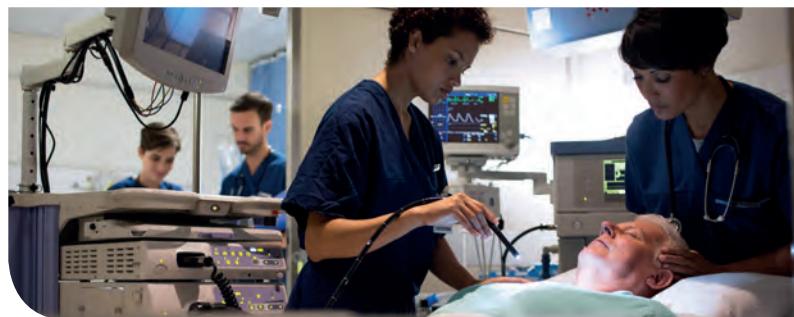
Pioneering gene therapy has restored some vision to patients with a rare form of genetic blindness for as long as four years, raising hopes it could be used to cure common causes of vision loss.

The technique involves injecting a virus into the eye (pictured right) to deliver billions of healthy genes to replace a key missing gene for patients with a condition known as choroideremia.

Lead investigator Professor Robert MacLaren, of the Nuffield Laboratory of Ophthalmology, said: 'There have

recently been questions about the long-term efficacy of gene therapy, but now we have unequivocal proof that the effects following a single injection of viral vector are sustained. Even sharpening up the little bit of central vision that these patients have can give them considerable independence.'

This year, Professor MacLaren also led a team at Oxford's John Radcliffe Hospital that performed the world's first operation inside the eye using a robot.



Researchers target intensive care's intensive noise problem

Far from being still environments punctuated only by hushed voices and softly bleeping machines, intensive care units (ICUs) in hospitals are in fact more like busy restaurants – and they are frequently noisy enough to compete with a pneumatic drill.

Professor Duncan Young, from Oxford's Kadoorie Centre for Critical Care Research and Education, said: 'High levels of noise make it harder to sleep. Sleep deprivation leads to confusion,

and confusion is thought to complicate the healing process and slow down recovery. Yet our research found that, during the day, noise levels in an ICU are equivalent to those of a busy restaurant.'

Information from the study was used by a group of staff and patients from the Oxford University Hospitals NHS Foundation Trust to help design a programme of noise-reducing changes, including new guidelines on equipment volume.

In a busy ICU noises as loud as a road drill can happen up to 16 times an hour

FACTS & FIGURES:

Medical and health research and teaching at Oxford has been ranked the

**WORLD'S
BEST**

for six years running in the *Times Higher Education World University Rankings*

During 2015/16:

6

companies were spun out of research carried out across the Medical Sciences Division

The Medical Sciences Division: employs around

4,700

full-time equivalent researchers, teachers and staff; has

1,600

undergraduate and

1,500

postgraduate students; received more than

£340M

in external research grant income



An Oxford study has found that **virtual reality** can help treat severe paranoia by allowing people to face situations they would normally fear. The simulations allowed the patients to learn that these scenarios, such as a crowded lift or a trip on public transport, were actually safe.

Social Sciences

Researching the role of genes in our reproductive behaviour

Sociogenome is a five-year project led by Professor Melinda Mills of the Department of Sociology, which studies the role of genes on the reproductive behaviour of men and women. This research is pioneering; set against a

background in which social scientists have recognised the influence of social background and environment, this multidisciplinary team takes a more holistic approach in also examining the genetic influence.

Professor Mills and an international team of around 250 researchers drew on recent unprecedented advances in molecular genetics to discover an underlying biological basis for reproductive behaviour. Already they have identified 12 specific areas of the DNA sequence associated with the age at which men and women have their first child and the total number of children they will have.

'It may soon be possible to give people information on the important question of how late they can wait to have children, based on their DNA variants,' explains Professor Mills. 'This discovery may also open up new possibilities for infertility treatments in the future.'



12 DNA areas have been linked with the age at which people have their first child

Documenting endangered archaeological sites



The Middle East and North Africa is one of the most significant regions in the world for its archaeological remains. However, many archaeological sites face increasing threats not only from conflict, but also from the effects of population increase, agricultural development, urban expansion and looting. The EAMENA project (Endangered Archaeology in the Middle East and North Africa), in collaboration with the University of Leicester, uses aerial

photographs and satellite imagery to record new sites and monitor threats to them. With support from the Arcadia Fund, the team has designed a searchable online database and created more than 100,000 records to improve the protection of archaeological sites in the future. The project shares these data and runs workshops to improve skills and raise awareness with the relevant authorities in each country.



Part of the ancient city of Gerasa (today Jarash) in Jordan; the before and after images show the results of a dedicated restoration programme, but also the impact of tourism at the site



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The social sciences has had an outstanding summer in terms of the postdoctoral research awards it has won. We seek to maintain our position as a world leader in social sciences and to extend our influence and impact both in the UK and globally.

Professor Roger Goodman, Head of the Social Sciences Division

"

Understanding the new political turbulence

In an unpredictable political period, Professor Helen Margetts, Director of the Oxford Internet Institute, and her team seek to improve methods of understanding political mobilisation in the social media age. Researchers from Oxford and University College London draw on large-scale internet data to spot patterns of behaviour in digital traces left by acts such as signing a petition, donating money to a political cause, supporting, liking and sharing. They use 'social data science' methodologies, including experimentation, to help understand and perhaps even predict the outcomes of this democratic turbulence.



Helping refugees help themselves

Work by Oxford researchers is changing the long-held view of refugees as passive victims who rely on handouts. Director of the Refugee Studies Centre Professor Alexander Betts and his Humanitarian Innovation Project team (HIP) studied refugees' economic lives and contributions in Uganda. Their research shows that refugees actually help boost the local economy if given the chance, but if they are denied the right to work, this limits their economic activities and drains the host country. The findings have been presented to the United Nations, the World Bank, governments, NGOs and other organisations concerned with providing refugee assistance. Professor Betts and HIP won a University of Oxford Vice-Chancellor's Award for Public Engagement with

Research for this work. *Foreign Policy* magazine has recognised Professor Betts as one of the top 100 Global Thinkers of 2016.



A tailor working in a market in Rwamwanja refugee settlement, southwestern Uganda



Oxfordshire County Council is working with an interdisciplinary research team, led by the University's Department of Education, exploring the different council services that **children permanently excluded from school** come into contact with. The pilot study is focused on why so many permanently excluded pupils experience long-term consequences such as involvement in crime, poor mental and physical health and prolonged periods of unemployment, and examines how these factors interrelate. The team includes researchers from Education, Law, Psychiatry, Social Policy and the Internet Institute, as well as colleagues with a background in the voluntary sector. By addressing this gap in knowledge, the researchers hope to reduce scarring effects of such experiences for excluded children.

FACTS & FIGURES:

Total income 2015/16

£185M

This included

£32M

research income, while new awards topped

£46M

£30M

was raised by the development team (mainly for posts and scholarships)

Around

1,000

academic staff

Over

5,700

students

Education

Postgraduate funding initiatives

Oxford has undertaken a number of successful initiatives targeting support for postgraduates – a key strategic priority for the University. Working with government agencies, the University is co-funding 98 Chevening and Commonwealth Scholars for international students, and provides another 89 bursaries worth £10,000 to UK and EU students through the Higher Education Funding Council for England's (HEFCE) Postgraduate Student Support Scheme. Now in its 15th year, the Clarendon Fund provides full scholarships (fees and living expenses) to 370 outstanding students from across all disciplines, thanks to support from Oxford University Press, Oxford's colleges and a range of other partners. A focus on supporting access to



postgraduate study through scholarships and student support has resulted in work with donors on hundreds of scholarship programmes and the creation of new endowed scholarships through the Oxford Graduate Scholarship Matched Fund initiative. The Oxford Graduate

Scholarships supported 149 scholars this year alone, and has generated donations of more than £106 million since its launch in 2012. It will eventually result in an endowment of more than £200 million providing sustainable, long-term funding for graduate study at Oxford.

BME initiatives for UG admissions



Oxford's undergraduate outreach activities have expanded to include the development of programmes targeted at encouraging more strong applications from UK students from ethnic minority backgrounds. The Undergraduate Admissions and Outreach Office has jointly organised the Annual Access Conference with the student African and Caribbean Society since 2014, which supports state schools in assisting their students of black and minority ethnic origin to make competitive applications to Oxford. A similar

series of conferences targeted at British Pakistani and Bangladeshi students was launched earlier this year. The University is also expanding its work with Target Oxbridge, an organisation which supports students from BME communities, in particular those from African and Caribbean backgrounds. This includes a new residential programme for Year 12 students focused on familiarising students with Oxford's academic environment and admissions process, and providing ongoing mentoring as they apply to university.

IntoUniversity

Nearly two years on from its launch, a partnership to help raise attainment and aspiration among students in Oxford's most deprived area is thriving. IntoUniversity Oxford South East is a partnership between the University, Christ Church and the IntoUniversity charity and serves young people in Blackbird Leys – one of Oxford's most deprived areas. The learning centre provides academic support and encouragement to pupils aged 7 through to 18, including academic support sessions, mentoring and in-school workshops. In its first year the centre has exceeded expectations, serving more than 800 pupils from the city. 74% of IntoUniversity students in Year 13 progressed to higher education in 2015 – compared to 35% of all students in Oxfordshire.



"

I think it's important to play a part in encouraging confidence in kids that might think Oxbridge is unattainable, even with the right grades. Five years ago I was one of those students, but having made it to Oxford I think it's really important as a student mentor to encourage others.

Awinnie Insua, Target Oxbridge Mentor and student at St Catherine's College

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UNIQ Summer School success

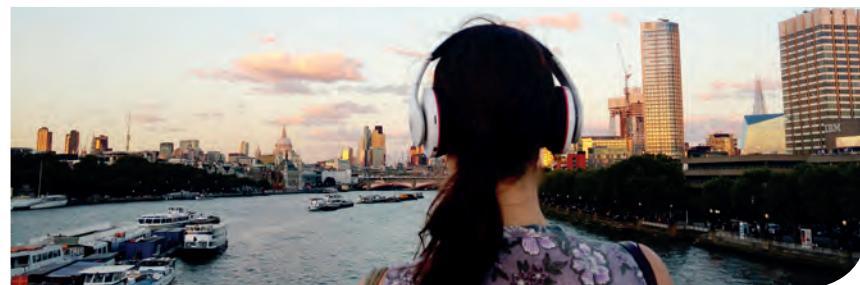
Now in its eighth year, Oxford's UNIQ Summer School for state school students is one of the largest and most successful outreach collaborations run by the University. More than 5,500 Year 12 students have taken part in the week-long residential summer schools to date, with over 1,100 winning offers from Oxford. Aimed specifically at students from the under-represented groups Oxford targets with its outreach work, the greatest group of participants this year came from Newham Collegiate Sixth Form Centre – one of the largest and most ethnically diverse colleges in East London. While the summer school has grown since its foundation to cover the majority of undergraduate courses offered at Oxford, it remains consistent



in its success: UNIQ participants applying to Oxford throughout the years have enjoyed success rates of upwards of 40% – double the overall average for all applicants.

The Vice-Chancellor participating in a UNIQ event at the Department of Experimental Psychology

Career confidence for schools



The employability programmes offered by Oxford's Careers Service encompass a range of innovative initiatives to equip students with practical skills and experience for the world of work. These range from micro-internships lasting up to five days in organisations around Oxfordshire and Greater London to the Student Consultancy – a first-of-its-kind programme that since its launch has trained more than 3,000 students to apply business and consulting

skills to term-long projects with local clients, ranging from small businesses to international charities and start-ups. Now the Careers Service has developed a new programme for secondary schools. Ignite: Career Confidence Programme for Schools and Colleges is being piloted in 45 schools and includes modules geared to each secondary school stage to promote students' confidence in areas including academic and social life, and eventually career-related activities.



Oxford University was ranked the **top university in the world** in The Times Higher Education 2016–17 World University Rankings – the first time a British university has secured the top spot. The global table judges the performance of 980 universities across 79 countries; Oxford's top ranking reflects its all-round strength in contemporary research and teaching. Vice-Chancellor Professor Louise Richardson said, 'This wonderful news recognises the extraordinary talent and dedication of all who work and study at Oxford. We are delighted with this affirmation of our global success and will be working hard to maintain our position.'

FACTS & FIGURES:

More than

5,500

state school students have attended the UNIQ summer school

More than

40%

of UNIQ summer school students applying to Oxford receive offers

For 2016 entry, Oxford made

59.2%

of its offers to students from state schools – the highest in at least four decades

Around

1,800

students take part in the practical employability initiatives each year

The collegiate University delivered more than

3,000

outreach events across the country, reaching 3,400 schools

The total spend on outreach across the University and colleges is more than

£6M

a year (which is additional to the £10m a year spent on student financial support)

More than

1,000

fully funded scholarships available for postgraduates

Gardens, libraries and museums

AND GARDENS
AND LIBRARIES
AND MUSEUMS

Henry Moseley in the Balliol-Trinity Laboratories, 1910



A scientific career cut short by war

'Dear Harry' was a nine-month exhibition at the Museum of the History of Science that told the story of Henry 'Harry' Moseley, a promising English physicist who was killed in action in World War One at the age of 27. Prior to the war, his work on the X-ray spectra of

elements provided a new foundation for the periodic table and contributed to the development of the nuclear model of the atom. The exhibition featured Moseley's original scientific apparatus from the museum's collections, his mother's diary and his personal correspondence. It

lasted from May 2015 to January 2016 and received 48,000 visitors. 'Such a shame we lose all the smart people in the world thanks to war,' a 12-year-old visitor wrote after a trip to the museum. 'Great exhibition on him, imagine what he could have achieved.'



Tolkien's notes and markings can be seen in green ink or pencil

Rare map reveals Tolkien's Middle-earth

The Bodleian Libraries have acquired a recently discovered map of Middle-earth which was annotated by J.R.R. Tolkien. The map was a working document that the author annotated in 1969, and it reveals his vision of the creatures, topography and heraldry of his imagined world where *The Hobbit* and *The Lord of the Rings* take place. The map has also been annotated by illustrator Pauline Baynes, who was commissioned to produce a poster map of Middle-earth. *The Lord of the Rings* had not yet been illustrated at the time, so Tolkien was very careful to ensure that Middle-earth was accurately depicted. In one entry, he instructs the illustrator that 'Hobbiton is assumed to be approx. at [the] latitude of Oxford.' Shortly after the acquisition, the map went on display for two days in June, causing long queues for the exhibition in the Weston Library.

“

Everything about this place is steeped in a long experience of imparting knowledge and education, and the humanising and civilising effect that has on our societies.

HRH the Duke of Cambridge at the opening of the Weston Library, May 2016

”

Captain Cook's haul displayed at Pitt Rivers

A new permanent exhibition of material collected by Captain James Cook opened at the Pitt Rivers Museum in April. A new display case in the museum's lower gallery houses art and artefacts that were collected on Captain Cook's famous voyages to the Pacific in the 18th century. Highlights of the display include one of the few surviving examples of a Tahitian mourner's dress and one of only two surviving examples of a Tahitian fau, or warrior's helmet. Sir David Attenborough gave a speech at the opening of the exhibition, in which he said Cook's voyages catalogued the 'whole of mankind's interest in the environment' and served as 'a benchmark of human activities in the early 18th century'.



Sir David Attenborough opened the exhibition



Mourner's dress from Tahiti, collected on Captain Cook's 2nd Pacific voyage (1772–75)



Entrepreneurship in the arts

Experts from the University's museums and the Saïd Business School have teamed up to offer a residential programme for leaders in museums, arts and heritage across the country. Now entering its third year, the programme aims to help cultural leaders to think in more entrepreneurial ways. 'It is a response to the clear message from governments across the world that cultural organisations need to

look beyond the state for their income,' explains the programme's director Dr Lucy Shaw. 'By using expertise found in all of the University's museums, as well as the business expertise of colleagues in the Saïd Business School, we are helping cultural organisations to reinvent themselves as businesses, albeit not-for-profit, with entrepreneurial ways of thinking and behaving.'



Oxford's Museum of Natural History holds the world's oldest pinned insect specimen, as well as many thousands of insects collected by Victorians including Charles Darwin and Alfred Russel Wallace. This year these collections have been presented in a new, creative way with an exhibition called '**Microsculpture**'. Photographer Levon Biss took a series of high-magnification portraits of selected specimens to capture the microscopic form of the insects in great detail. Visitors were able to view the original specimens alongside these large, high-resolution prints and it was one of the museum's most successful exhibitions.

FACTS & FIGURES:

2.25M

visitors annually to Oxford University's museums

845,716

people visited the Ashmolean Museum in 2015

770,000

people visited the Weston Library in its first year

105,684

people visited the University Museum of Natural History in the three weeks after the opening of '**Microsculpture**' on 27 May 2016

32,920

education visits to the Pitt Rivers Museum

75

years since the discovery of penicillin, which has been marked in an exhibition at the Museum of the History of Science

Oxford and the community

Community grants

A biography and red poppy were placed outside the home of each of the 66 men of Grandpont who died in WWI



Community events and projects form a vibrant part of Oxford city life. To support these, the University sets aside £50,000 annually for its community grants scheme. The criteria are: celebrating the city's heritage; offering valuable experiences to its community; and supporting educational achievement.

A beneficiary again this year was the

Story Museum's 'Alice's Day', held annually to celebrate *Alice's Adventures in Wonderland*. Alice's Day 2016 was on the theme of Animals in Wonderland, and a community grant helped provide a special workshop for local schoolchildren.

To mark the centenary of the First World War, volunteers researched the history of the 66 men from the Oxford parish

of Grandpont who were killed in the conflict. Assisted by a community grant and other funding, participants shared their research in the form of a website, film and exhibition. They also set out a local trail marking the house where each man had lived; it communicated the impact of the loss of these men on their community more directly than names on a war memorial.

Public engagement

New for 2016 were the Vice-Chancellor's Awards for Public Engagement with Research. Winners were recognised for their contributions to high-quality public engagement with the research work of the University.

Dr David Griffiths from the Department of Continuing Education won an

award for collaboration for Archaeox, a five-year archaeological and historical research project on the landscape and historic environment of east Oxford. With funding from the Heritage Lottery Fund, and involving more than 650 volunteer members of the public, the project included excavations of

prehistoric and medieval sites in east Oxford, among which were civil war defences and a medieval leper hospital. Archaeox particularly engaged with charities whose focus was working with those with social and behavioural difficulties. A sense of shared ownership of the project was central, and volunteers were able to influence the direction of the research. They learned about excavation techniques and how to use specialist equipment.

Award winners had to be able to demonstrate clear evidence of benefit both to the researchers and the engaged public, and the legacy or sustainability of their project. The academics involved in Archeox finished with a very positive view of the potential for public participation in archaeology and heritage research, while volunteers gained access to other study opportunities and professional accreditation.

Volunteers excavating the medieval site of Bartlemas Chapel and leper hospital



"

A university has a responsibility to be both a force for good in the world, and a good neighbour locally.

Professor Louise Richardson, Vice-Chancellor

"

Supporting refugees

Oxford students and the collegiate University are between them operating a three-stranded approach to helping displaced academics who would have been at risk if they had stayed in their home countries. The University and colleges are providing funding and board and accommodation to refugee students – this year, for example, the University has awarded a research internship to a Syrian student who could not safely remain in Syria. Her research focuses on public health in the refugee community.

The Oxford Students Refugee Campaign (OXSRC) is raising money through students donating £1 each per month into a scholarship fund for refugees, for which the University is providing the administrative framework. OXSRC hopes that successful running of the

scheme over an initial two-year period will then attract support from other donors. At the University Language Centre, Oxford University Student Affairs is coordinating structured English language classes at beginner and intermediate level, working closely with

local community groups, the council and other charities. A 'language exchange' has also been set up between Arabic-speaking at-risk people and students from Oriental Studies who speak or are learning Arabic, so that each can benefit from the others' native language skills.



Funding from Brasenose College has enabled Syrian student Manar Marzouk to take up the award of a research internship

Sustainability and social impact

In 2016 the University's first annual Sustainability Showcase celebrated members from across the collegiate University for their positive impact on society and the environment. Green Impact Awards, a Student Switch Off Award and a Carbon Innovation Award were among more than 50 presented.

Vice-Chancellor's Social Impact Awards, organised through the student-run Oxford Hub, were also presented to four students who had shown exceptional commitment to creating positive social change. Their work included LinkAges, a befriending scheme which aimed to reduce loneliness among the elderly; One-Eighty, a charity applying psychology-focused behaviour support to vulnerable youngsters and their

families; ProjectTogether, a volunteer-run coaching service for young people, encouraging them to start new social projects and engage in civil society; and Project SOUP, a micro-funding initiative using food waste to raise money for local projects.

LinkAges volunteers and their elderly companions visit a local board game café



The Vice-Chancellor talks with guests at the reception for local community leaders. The event in the Bodleian's new Weston Library was part of the Vice-Chancellor's inauguration celebrations.

FACTS & FIGURES:

17,000

jobs provided by the University

£750M

annually brought into the local economy by the University

33%

carbon reduction target by 2020/21

£3M

invested in over 180 carbon reduction projects

Over

£80,000

raised for charity every year by OUSU

14,000

students annually enrol on courses at the University's Department for Continuing Education

Development and alumni

Cecil's legacy

The 2015 killing of Cecil, one of the lions monitored in Zimbabwe by Oxford's Wildlife Conservation Research Unit (WildCRU), has had an enormous impact on the funding

and scope of WildCRU's work. In the three months after Cecil was shot by a hunter, WildCRU received more than £900,000 in donations from sympathisers worldwide.

With this extra support, WildCRU has been able to more than double the number of African lions monitored, the number of communities it works with and the number of community lion guardians in training. In addition, support is continuing for young Zimbabwean students at WildCRU.

Professor David Macdonald, Director of WildCRU, is keen to build on this global interest to increase awareness of the need for lion conservation. The Cecil Summit, a think tank to discuss future initiatives to conserve the African lion, was held in Oxford in September 2016. A gathering of experts across disciplines identified several possible courses of action, including restoring the social and economic value of lions to the human communities who share their land. In the words of Professor Macdonald, this is an opportunity 'to transform the Cecil moment into the Cecil movement'.



New scholarships for Chinese students

Two historic major gifts are supporting students from China and Hong Kong, ensuring that the University remains accessible to students from this region, regardless of their financial circumstances.

In January 2016, The D. H. Chen Foundation established Oxford's first means-tested undergraduate scholarships for Hong Kong. Two scholarships will be awarded annually; as well as covering the course costs they will also include internships, giving recipients the opportunity to gain valuable experience.

The D. H. Chen Foundation places a high value on giving back to the community, supporting youth empowerment in Hong Kong and the creation of sustainable social impacts. Ms Vivien Chen, Chairman of the foundation, said: 'Choosing from among Hong Kong's brightest scholars, our aim is to give each and every one of

them a life-changing opportunity to study here and to benefit not only on an intellectual level, but also from Oxford's humanitarian ethos of public service.'

The University also announced a gift from the Bright Oceans Corporation, a high-tech industrial group in Beijing. A ground-breaking means-tested endowed scholarship programme has been set up to provide funding for undergraduate students from China commencing a course of study in the Mathematical, Physical and Life Sciences Division.



Comedian Ruby Wax (Kellogg alumna) spoke about mindfulness and signed her latest book at the popular Alumni Weekend in Oxford in September 2016.

I have been to every single Alumni Weekend in Oxford. They are always intellectually stimulating, and a great opportunity to ask academics about their cutting-edge research.

Terry Slesinski-Wykowski (Pembroke, 1982), co-chair of Oxford's alumni group in Houston

“

I deem it an honour to establish The D. H. Chen scholarships in my father's name, given his strong belief in the power of education to effect change.

Vivien Chen, Chairman, The D. H. Chen Foundation

”

Support for developmental medicine

An Oxford Chair in Developmental Medicine, endowed in 1970 by children's charity Action Medical Research, was recently in need of a funding injection if it was to remain secure for the future. Entrepreneur, private investor and philanthropist André Hoffmann provided this additional backing through a generous gift, saying that the cause was important to him because: 'Medical research, particularly in regenerative medicine, is key to ensuring better health for children and the population in general.'

Professor Georg Holländer, expert in developmental biology and Head of the Department of Paediatrics, is the current incumbent of the Hoffmann and Action Medical Research Chair in Developmental Medicine. He will now be able to continue his research into how cells of the immune system grow and

differentiate during foetal development and early life. This knowledge underpins regenerative medicine, which could transform patient care by reactivating or regenerating human tissues so that normal function can be restored in response to birth defects, disease or injury. This is especially true for disorders of the heart, the brain and the immune system, many of which have a developmental origin.

Researchers in developmental biology and regenerative medicine will work alongside one another at a new purpose-built Institute of Developmental and Regenerative Medicine at Oxford, led by Professor Holländer and Paul Riley, BHF Professor of Regenerative Medicine. They will be at the forefront of exploring stem cell-based approaches to treating a wide variety of diseases.



Professor Georg Holländer, whose post has recently been given additional financial support

Oxford North American Alumni Weekend

In a change from its usual New York venue, this year's Oxford North American Alumni Weekend was held for the first time in Washington, DC. Highlights among the talks and social events were a discussion about leadership with high-profile panellists and the gala dinner at the Library of Congress. More than 700 alumni and guests took part – a clear affirmation that this move to a new city was a success. Today 1,500 Americans are studying at Oxford, and 26,000 Oxford alumni live in the US.



In May, HRH The Duke of Cambridge **formally opened the Blavatnik School of Government** which was made possible through a benefaction to Oxford by American philanthropist Leonard Blavatnik. The school offers a distinctive global approach to public policy through the research and teaching of a world-class multidisciplinary faculty. Left to right: Susan Thomas, Joseph Ssentongo, Rafat Ali Al-Akhali, Dr Thomas Hale, The Duke of Cambridge, Professor Ngaire Woods.

FACTS & FIGURES:

In 2015/16, the Oxford Thinking fundraising campaign raised:

£345M

for the University and the colleges

£2.48BN

has been raised since 2004

£900K+

raised from over 12,000 donors in support of WildCRU in response to the illegal killing of Cecil the Lion

275,000+

Oxford alumni worldwide from 202 countries

7,300+

alumni are willing to offer advice to members of the Oxford Alumni Community – an online professional networking platform

1,800

alumni and guests attended the 10th Alumni Weekend in Oxford in 2016

221

volunteer-led alumni groups in more than 90 countries worldwide

Equality and diversity

Diversifying the curriculum

Embedding racial and cultural diversity in academic practice across Oxford is the purpose of the Race and Curriculum project. The project, launched after the 2014 Race Equality Summit, brings



together students and academics from across the University to undertake a series of undergraduate curriculum reviews to explore how greater diversity of perspectives – especially those outside the ‘western’ tradition – could be more systematically embedded into course content. ‘This is an exciting development and will go a long way to ensure teaching remains at the highest quality and is innovative,’ explained Dr Surender. A number of departments and faculties are in different stages of curriculum review and reform, including Politics and International Relations, Theology and Religion, and History. The mantle of campaigning for curriculum diversity has also been actively taken up by TORCH (The Oxford Research Centre in the Humanities), which will take the themes of diversity and difference as

Professor Ruth Simmons meeting guests after delivering the Race and the Curriculum Lecture on the legacy of slavery in America

organising themes for its 2017 academic activities.

Complementing this department-level work, a new headline lecture series has stimulated further discussions about how to incorporate alternative perspectives into the curriculum and achieve cultural and institutional change within Oxford. Hosted by the Vice-Chancellor, the Race and the Curriculum Lectures offer perspectives on diversifying academic and organisational practice from around the world, from experts including Professor Homi Bhabha from Harvard; Professor Sir Hilary Beckles, Vice-Chancellor of the University of the West Indies; and Professor Ruth Simmons, President emerita of Brown University.



Baroness Amos spoke about female leadership in her Women of Achievement lecture

Athena SWAN awards and gender initiatives

The University’s role as a founding member of the Athena SWAN charter in 2005 has had a defining impact on its work to further academic gender equality, particularly in the sciences. Established originally to combat the under-representation of women in science, technology, engineering and maths but now embracing all disciplines, Athena SWAN awards recognise practices and achievements particularly supporting the career development and progression of female academics. All of Oxford’s departments in the Mathematical, Physical and Life Sciences (MPLS) and Medical Sciences Divisions hold awards, 20 at silver and 7 at bronze level. From November 2015 the scheme has been open to non-science departments – the Social Sciences Division is supporting its departments to apply for awards, while Humanities

has reviewed hiring practices with an aim of introducing measures to achieve ambitious targets to increase the proportion of women in academic posts.

A University-wide review of recruitment to senior academic roles and the setting of gender equality targets for University academic, leadership and governance roles are already seeing results. Two years on from revising the process for statutory professorship recruitment, the proportion of female appointees has more than doubled. Championing a diverse range of female leadership role models is also the aim of the Women of Achievement lecture series. Hosted by the Vice-Chancellor, its speakers have included *Guardian* editor Kath Viner, Baroness Valerie Amos and Chief Medical Officer Dame Sally Davies.

"

In the 18 months since my position as Advocate for Diversity was introduced, I have witnessed tremendous momentum and an openness to change at all levels – a genuine commitment to ensuring we are a diverse, dynamic and inclusive community. This is a very exciting juncture in Oxford's trajectory.

Rebecca Surender, Pro-Vice-Chancellor and Advocate for Equality and Diversity

"

Diversifying portraiture

Diversity and equality is about more than just policy; who is reflected and included in institutional culture is a priority of the new Diversifying Portraiture initiative. The project aims to widen the range of people represented around the University, promoting inclusivity as a key part of Oxford's iconography. The first stage of the project involved identifying around 230 existing portraits illustrating Oxford's diverse past and present – from former governor of Barbados Sir Hugh Springer to suffragist Agnes Royden. The project's second phase is now nearing completion, and will result in 25 new portraits of living Oxonians, by different artists and in a range of media, which will be displayed in an exhibition and eventually join the existing range of portraits around the University. More than 100 people with links to the University were nominated for their achievements, highlighting the wide range of diversity at Oxford in terms of age, gender, ethnicity, disability and sexual orientation.



Sir Bhagavat Simhaji
(1865–1944) by
Frank Brooks



Isabella Arlosh
(1835–1905) by
William Salter Herrick

FACTS & FIGURES:

26%

of all students at Oxford identify as black or minority ethnic

9.3%

of all students at Oxford have declared a disability

Oxford students come from over

140
countries

Around

230

portraits have been catalogued through the Diversifying Portraiture project

£1M

in funding for projects made available through the Vice-Chancellor's Diversity Fund

22

projects funded through the Vice-Chancellor's Diversity Fund

Returning Carers' Fund

One of the many projects funded by the Vice-Chancellor's Diversity Fund, the Returning Carers' Fund supports academic and research staff with caring responsibilities on their return to work after periods away. Since the end of 2014, the fund has supported 122 members of staff, providing small but significant grants on a flexible basis for academics to determine what would best help them resume their research.

This can cover anything from bringing research collaborators to Oxford, funding administrative or research assistance and even seed funding to start up new lines of independent research. The fund is designed not just to signal that Oxford recognises the difficulties



Professor Angela Russell, a recipient of the Returning Carers' Fund, with her two young children

faced by those trying to balance the demands of an academic career with caring responsibilities, but to publicly demonstrate that the University is serious about and committed to investing in its academic and research staff.

Honours and awards



Clockwise from left:
Brian Mountford,
Georgina Born,
Andrew Wiles,
Frances Lannon
& David Clary



NEW YEAR HONOURS

Five members of the University were recognised:

Christopher Bulstrode, Emeritus Professor of Orthopaedic Surgery and emeritus fellow of Green Templeton College, was appointed CBE for services to humanitarian medicine.

Linda McDowell, Professor of Human Geography and fellow of St John's College, was appointed CBE for services to geography and higher education.

Keith Willett, Professor of Orthopaedic Trauma Surgery, fellow of Wolfson College and Director for Acute Care at NHS England, was appointed CBE for services to the NHS.

Fran Bennett, Senior Research and Teaching Fellow at the Department of Social Policy and Intervention, was appointed OBE for services to social science.

The Revd Canon Brian Mountford, Vicar of the University Church of St Mary the Virgin, fellow and chaplain of St Hilda's College and Honorary Canon of Christ Church Cathedral, was appointed MBE for services to ecclesiastical history.

QUEEN'S BIRTHDAY HONOURS

A number of Oxford scholars were recognised:

David Clary, President of Magdalen College and Professor of Chemistry, was knighted for services to international science.

Frances Lannon, who last year retired after serving as Principal of Lady Margaret Hall for 13 years, was made a Dame of the British Empire for services to higher education.

Roger Scruton, Senior Research Fellow at Blackfriars Hall and Visiting Professor in Philosophy, was knighted for services to philosophy teaching and public education.

Larry Siedentop, emeritus Fellow of Keble College, was knighted for services to political science.

Maggie Snowling, President of St John's College and Professor of Psychology, was appointed CBE for services to science and the understanding of dyslexia.

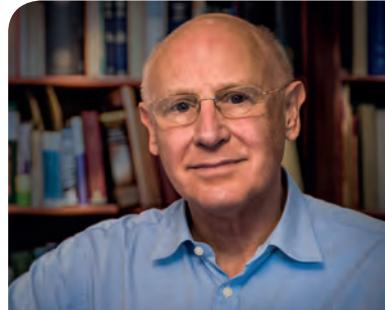
Georgina Born, Professor of Music and Anthropology and professorial fellow of Mansfield, was appointed OBE for services to musicology, anthropology and higher education.

Edward Melhuish, research professor in the Department of Education and at Birkbeck, University of London, was appointed OBE for services to social science.

David Palfreyman, Bursar of New College, was appointed OBE for services to higher education.

ABEL PRIZE FOR MATHEMATICS

Sir Andrew Wiles, Royal Society Research Professor of Mathematics and fellow of Merton College, received the top international prize in mathematics 'for his stunning proof of Fermat's Last Theorem by way of the modularity conjecture for semistable elliptic curves, opening a new era in number theory'.



Clockwise from top left:
Patricia Clavin,
Gilean McVean,
Sarah Lamb,
Michael Macdonald,
Elizabeth Robertson
& David Cannadine

BRITISH ACADEMY

Sir David Cannadine, Dodge Professor of History at Princeton University, Visiting Professor of History at Oxford and editor of the *Oxford Dictionary of National Biography*, has been elected 30th President of the British Academy.

Eight Oxford academics were elected fellows:

Stephen Broadberry, Professor of Economic History and fellow of Nuffield College

Patricia Clavin, Professor of International History and fellow of Jesus College

Judith Freedman, Pinsent Masons Professor of Taxation Law, Director of Legal Research, Centre for Business Taxation, and fellow of Worcester College

Elizabeth Eva Leach, Professor of Music and fellow of St Hugh's College

Michael Macdonald, Research Associate, Faculty of Oriental Studies and Khalili Research Centre, and honorary fellow of Wolfson College

Catherine Morgan, Professor of Classics and Archaeology and fellow of All Souls College

Duncan Snidal, Professor of International Relations and fellow of Nuffield College

Fiona Williams, OBE, Emeritus Professor of Social Policy, University of Leeds, Research Associate, COMPAS, and Honorary Professor, Social Policy Research Centre, University of New South Wales

ROYAL ACADEMY OF ENGINEERING

One academic was awarded a fellowship:

Stephen Roberts, Professor of Machine Learning and fellow of Somerville College

ACADEMY OF MEDICAL SCIENCES

Eight medical researchers were elected fellows:

Christopher Butler, Professor of Primary Care, Clinical Director, Primary Care Clinical Trials Unit, and fellow of Trinity College

Georg Holländer, Hoffmann and Action Professor of Paediatrics, Head, Department of Paediatrics, and fellow of Jesus College

Sarah Lamb, Kadoorie Professor of Trauma Rehabilitation, Co-Director, Clinical Trials Research Unit, and fellow of Wadham College

Martin Maiden, Professor of Molecular Epidemiology, and fellow of Hertford College

Timothy Maughan, Professor of Clinical Oncology and Deputy Director, CRUK/MRC Oxford Institute for Radiation Oncology

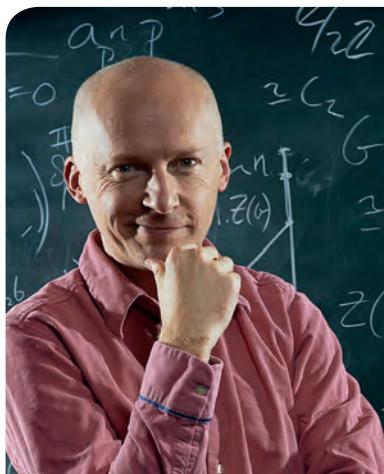
Gilean McVean, Professor of Statistical Genetics, Head of Bioinformatics and Statistical Genetics, Director, Big Data Institute, and supernumerary fellow of Linacre College

Andrew Pollard, Professor of Paediatric Infection and Immunity, Director, Oxford Vaccine Group, Honorary Consultant Paediatrician and fellow of St Cross College

Elizabeth Robertson, Professor of Developmental Biology and Wellcome Trust Principal Research Fellow

Honours and awards

CONTINUED



Clockwise from left:
Marcus du Sautoy,
Martin Bridson,
Mildred Dresselhaus,
Kazuyo Sejima
& Michael Freeden



ROYAL SOCIETY FELLOWS

Seven academics were elected:

Steven Balbus, Savilian Professor of Astronomy, Head of Astrophysics and fellow of New College.

Martin Bridson, Whitehead Professor of Pure Mathematics, Head, Mathematical Institute, and fellow of Magdalen College

Bill David, Professor of Chemistry and Fellow of St Catherine's College

Marcus du Sautoy, OBE, Simonyi Professor for the Public Understanding of Science, Professor of Mathematics and fellow of New College

Artur Ekert, Professor of Quantum Physics and fellow of Merton College

Antony Galione, Chair of Pharmacology, Head, Department of Pharmacology, and fellow of Lady Margaret Hall

Gilean McVean, Professor of Statistical Genetics, Head of Bioinformatics and Statistical Genetics, Director, Big Data Institute, and supernumerary fellow of Linacre College

ACADEMY OF SOCIAL SCIENCES

Three academics were awarded fellowship status:

Michael Freeden, Emeritus Professor of Politics and emeritus fellow of Mansfield College

Professor Jeremy Howells, Visiting Fellow of Kellogg College

Louise Richardson, Vice-Chancellor, Professor of International Relations and honorary fellow of Kellogg College

ENCAENIA

Nine eminent figures from the fields of theology, law, film, economics, architecture, science, engineering and music received honorary degrees at Encaenia, the University's annual honorary degree ceremony, held in the Sheldonian Theatre at the end of Trinity term.

The honorands are as follows:

Doctor of Divinity

Monsignor Professor Tomáš Halík, priest, philosopher and theologian, Professor of Sociology of Religion at Charles University, Prague, and winner of the Templeton Prize

Doctor of Civil Law

The Right Hon the Lord Mance, PC, Justice of the Supreme Court of the United Kingdom, High Steward of Oxford University, honorary fellow of University College and honorary fellow of Wolfson College

Doctor of Letters

Pedro Almodóvar, director and screenwriter, winner of the Jean Renoir Award for Screenwriting Achievement and Foreign Honorary Member of the American Academy of Arts and Sciences

Paul Krugman, economist, author and columnist, Distinguished Professor of Economics, City University of New York, and winner of the Nobel Memorial Prize in Economic Science

Kazuyo Sejima, architect, Project Professor, Keio University, Visiting Professor, Japan Women's University, co-winner of the Pritzker Prize and Foreign Honorary Member of the American Academy of Arts and Letters



Clockwise from top left:
Pedro Almodóvar,
Antony Galione,
the Chancellor with
Irene Yun Lien Lee,
Artur Ekert,
Cornelia Bargmann
& Arvo Pärt

Doctor of Science

Cornelia Bargmann, neurobiologist, Torsten N Wiesel Professor, Rockefeller University, winner of the Benjamin Franklin Medal and Member of the American Academy of Arts and Sciences

Mildred Dresselhaus, physicist, Institute Professor and Professor Emerita of Physics and Electrical Engineering, Massachusetts Institute of Technology, and winner of the Presidential Medal of Freedom and the Kavli Prize in Nanoscience

Sir Jonathan Ive, Chief Design Officer, Apple Inc, Royal Designer for Industry and Honorary Fellow of the Royal Academy of Engineering

Doctor of Music

Arvo Pärt, composer, winner of the Léonie Sonning Music Prize and Foreign Honorary Member of the American Academy of Arts and Letters

CHANCELLOR'S COURT OF BENEFACTORS

The following new members were admitted to the Court in recognition of their outstanding philanthropy toward the collegiate University:

Dr David R Harvey, former CEO and Board Chairman, Sigma-Aldrich Corporation

Irene Yun Lien Lee, Chairman, Hysan Development Company Ltd, representing the Lee family

Christian Levett, private investor and founder, Mougins Museum of Classical Art

R Victor Wood, former director, Sun Life Corporation plc and Wemyss Development Company

Mark Campbell, Partner, Clifford Chance, representing Clifford Chance

René Olivier, former CEO, Blackwell Publishing Ltd, and current Chair of the Wildlife Trusts, representing the Tubney Charitable Trust

Professor Ric Parker, former Director of Research and Technology, Rolls Royce Plc, representing Rolls Royce Plc

Chancellor's Court Fellowship

Dr Marcy McCall MacBain, Co-Founder, McCall MacBain Foundation, admitted as a CCB Fellow in recognition of her exceptional philanthropic funding to Oxford.

DISTINGUISHED FRIENDS OF OXFORD

Eight volunteers were recognised for their exceptional time and commitment to Oxford:

Shahnaz Batmanghelidj, for her work on behalf of the American Friends of Oxford and Somerville College

Michael McCaffrey, for his work on behalf of Oxford University Endowment Management, the Rhodes Trust and Merton College

Gabriel Moss, QC, for his work on behalf of the Law Faculty and St Catherine's College

Dr Jin Park, for his work on behalf of the Oxford University Society of Korea and the University's outreach into Korea

Terry Slesinski-Wykowski and **Nancy Brown**, for their work on behalf of the Oxford University Society of Houston and Pembroke College and Somerville College, respectively

Professor Nicholas Steneck, for his work on behalf of the University's commitment to research integrity

Dr Tan Yang, for his work on behalf of the University's interests in China and Hong Kong and in support of the Said Business School

New appointments

Clockwise from left:
Emma Potts,
Rory Collins,
Pedro Carvalho,
Philip Howard



Academic year 2015/16

PROFESSORSHIPS

Eastern religions and ethics

Diwakar Acharya, Associate Professor, Kyoto University, was appointed Spalding Professor of Eastern Religions and Ethics and a fellow of All Souls College.

Newton Abraham Visiting Professorship

Jacobus (Koos) Boomsma, Professor in the Department of Biology and Director, Centre for Social Evolution, University of Copenhagen, was appointed Newton Abraham Visiting Professor in the Medical, Biological and Chemical Sciences and a fellow of Lincoln College.

Cell biology

Pedro Carvalho, Group Leader, Center for Genomic Regulation, Barcelona, was appointed EP Abraham Professorship of Cell Biology and a fellow of Lincoln College.

Population health

Sir Rory Collins, Head, Nuffield Department of Population Health, and British Heart Foundation Professor of Medicine and Epidemiology, was appointed Nuffield Professor of Population Health and a fellow of St John's College.

Comparative law

Birke Häcker, Senior Research Fellow, Max Planck Institute for Tax Law and Public Finance, Lecturer in Law, Ludwig-Maximilians-Universität, Munich, and a fellow of All Souls College, was appointed Linklaters Professor of Comparative Law and a fellow of Brasenose College.

Internet studies

Philip Howard, Professor in the Department of Communication, University of Washington, Egyetemi Docens Professor, School of Public Policy, and Director, Center for Media, Data and Society, Central European University, Hungary, was appointed Professor of Internet Studies and a fellow of Balliol College.

American literature

Lloyd Pratt, Associate Professor of English and University Lecturer in American Literature, was appointed Drue Heinz Professor of American Literature and a fellow of St John's College.

Public policy

Jonathan Wolff, Professor of Philosophy, UCL, was appointed Blavatnik Professor of Public Policy and a fellow of Wolfson College.

Development economics

Christopher Woodruff, Professor in the Department of Economics, University of Warwick, was appointed Professor of Development Economics and a fellow of Wolfson College.

SENIOR ADMINISTRATIVE POSTS

Humanities

Karen O'Brien, Vice-Principal (Education) and Professor of English Literature, KCL, was appointed Head of the Humanities Division.

Academic registrar

Emma Potts, Director of Student Administration and Services, was appointed Academic Registrar and will continue as a fellow of Kellogg College.

Oxford Martin School

Achim Steiner, Executive Director, United Nations Environment Programme, was appointed Director of the Oxford Martin School.

Public affairs and communications

Ceri Thomas, Editor of the BBC's *Panorama* programme, was appointed Director of Public Affairs and Communications.

Pitt Rivers Museum

Laura Van Broekhoven, Head, Curatorial Department, and Curator of Middle and South America, National Museum of World Cultures and Assistant Professor of Archaeology, Leiden University, was appointed Director of the Pitt Rivers Museum and a fellow of Linacre College.

Academic year 2016/17

PROFESSORSHIPS

Race relations

Adewale Adebanwi, Associate Professor, Program in African American and African Studies, University of California at Davis, was appointed Rhodes Professor in Race Relations and a fellow of St Antony's College.



Clockwise from top left:
Julia Smith,
Sarah Whatmore,
Bernhard Ebbinghaus,
Mihaela van der Schaar,
Tim Berners-Lee

Evidence-based intervention and policy evaluation

Jane Barlow, Professor of Public Health, University of Warwick, was appointed Professor in Evidence-Based Intervention and Policy Evaluation and a fellow of St Hilda's College.

Computer science

Sir Tim Berners-Lee, inventor of the World Wide Web and Professor at MIT, joined the Department of Computer Science as a Professorial Research Fellow and became a student of Christ Church.

Social policy

Bernhard Ebbinghaus, Professor of Sociology, University of Mannheim, has been appointed Professor in Social Policy and a fellow of Green Templeton College.

Mathematical logic

Ehud Hrushovski, Professor of Mathematics, Hebrew University, Jerusalem, was appointed Professor of Mathematical Logic and a fellow of Merton College.

Metaphysical philosophy

Ofra Magidor, Associate Professor of Philosophy and fellow of Balliol College, was appointed Waynflete Professor of Metaphysical Philosophy and a fellow of Magdalen College.

Irish history

Ian McBride, Professor of Irish and British History, KCL, was appointed Foster Professor of Irish History and a fellow of Hertford College.

George Eastman Visiting Professorship

Niles Pierce, Professor of Applied and Computational Mathematics and Bioengineering, Caltech, was appointed George Eastman Visiting Professor 2016–17 and a fellow of Balliol College.

Contemporary theatre

Claude-Michel Schönberg, musical theatre composer, songwriter, record producer, actor and singer, was appointed Cameron Mackintosh Visiting Professor of Contemporary Theatre 2016–17 and a fellow of St Catherine's College.

Medieval history

Julia Smith, Edwards Professor of Medieval History, University of Glasgow, was appointed Chichele Professor of Medieval History and a fellow of All Souls College.

Quantitative finance

Mihaela van der Schaar, Chancellor's Professor of Electrical Engineering, UCLA, and Founder and Director, UCLA Center for Engineering Economics, Learning and Networks, was appointed Man Professor of Quantitative Finance and a student of Christ Church.

Medicine

Hugh Watkins, Head, Radcliffe Department of Medicine, and Honorary Consultant in Cardiology and General Medicine, John Radcliffe Hospital, was appointed Radcliffe Professor of Medicine and a fellow of Merton College.

SENIOR ADMINISTRATIVE POSTS

Pro-Vice-Chancellors

Alastair Buchan, Head of the Medical Sciences Division, Professor of Stroke Medicine and a fellow of Corpus Christi College, was appointed Head of Brexit Strategy and Pro-Vice-Chancellor (without portfolio).

Sarah Whatmore, Professor of Environment and Public Policy and a fellow of Keble College, was appointed Pro-Vice-Chancellor (Education).

HEADS OF HOUSE

Trinity College

Hilary Boulding, Principal, Royal Welsh College of Music and Drama, has been appointed President with effect from August 2017.

Corpus Christi College

Professor Steven Cowley, FRS, Chief Executive, UK Atomic Energy Authority, and Professor of Physics, Imperial College London, was appointed Warden with effect from October 2016.

St Anne's College

Helen King, Assistant Commissioner for Professionalism, Metropolitan Police Service, has been appointed Principal with effect from April 2017.

St Cross College

Carole Souter, CBE, Chief Executive, National Heritage Memorial Fund and Heritage Lottery Fund, was appointed Master with effect from September 2016.

Financial overview

The University retained a surplus of £172.9 million in 2015/16 compared to £392.3 million in 2014/15. The

University's financial statements have been produced this year under Financial Reporting Standard 102 for the first time.

	2016 £m	2015 £m
Income	1,321.8	1,523.9
Expenditure	(1,336.5)	(1,318.5)
(Deficit)/Surplus on ordinary activities	(14.7)	205.4
Investment gains	188.0	205.4
Taxation	(0.4)	(18.5)
Total comprehensive income retained within General Reserves	172.9	392.3

In the financial year 2015/16 the University generated a total comprehensive income of £173 million and managed total funds of £3 billion. However, the financial performance depended heavily on healthy investment returns in the year which contributed an income of £188 million and, for a second year, the operating surplus of 3.3% fell short of the University's key financial target of at least 5% of total income. The University faces a period of economic uncertainty as the UK

government negotiates an exit from the European Union and will need to manage resources efficiently if it is to maintain its pre-eminent position among the world's leading universities.

The significant decrease in the surplus was largely due to two one-off items in 2014/15, being a special transfer from Oxford University Press totalling £120 million and a research and development expenditure credit claim totalling £66.6 million (net of tax payable).

	2016 £m	2015 £m
Net surplus for the year (as reported)	172.9	392.3
Special transfer from Oxford University Press	(120.0)	
Research & development expenditure credit (net of tax charge)	(66.6)	
Underlying surplus for the year	172.9	205.7

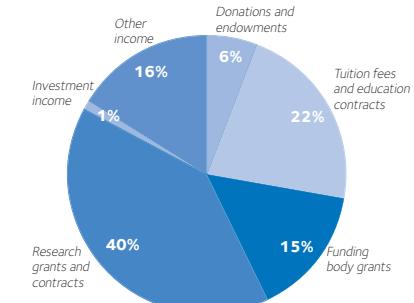
The reasons for the reduced surplus in 2015/16, compared to that of 2014/15, include increased pension and national insurance costs, lower investment gains and new endowments, and higher interest payable on bank loans.

Investment in capital projects totalled £154.3 million and included expenditure on the new building for the Blavatnik School of Government, the conversion of the Outpatients Building for the Department of Primary Care Health Sciences and the refurbishment of accommodation for Statistics. This

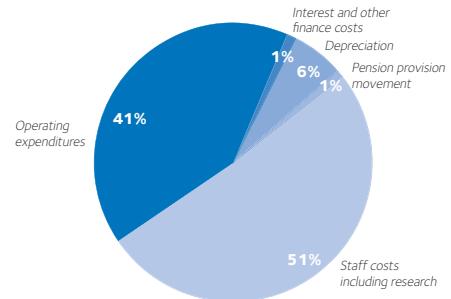
contributed to a reduction in cash reserves in the year of £21.2 million.

The balance sheet position remains strong. Net assets totalled £3 billion (2015: £2.8 billion). Fixed assets increased by £72 million to £1,411 million and non-current asset investments increased by £197 million to £2,058 million, reflecting an increase of 8.7% in market value and the receipt of new endowments. The University has recognised a liability of £197 million to fund agreed pension fund recovery plans.

Consolidated University Income 2015/16



Consolidated University Expenditure 2015/16



External research funding

Oxford has the largest volume of world-leading research in the country, according to the UK government's 2014 assessment via the Research Excellence Framework (REF). Much of this research is funded by external sources, and it is thanks to this support that Oxford researchers continue to advance fundamental knowledge and contribute to public policy, better health, economic prosperity, social cohesion, cultural activity and international development.

Improving water security

Water security is an important pathway to sustainable growth and poverty reduction. However, sound scientific evidence is needed to further understand how water resources can be managed and how we can help the world's most vulnerable communities.

The School of Geography and the Environment is leading a global seven-year research programme, REACH, to improve water security for the poor. Drawing on interdisciplinary expertise from within the University and through partnerships with research institutions



An Ethiopian woman takes water from a well that will be purified with tablets before drinking

in Ethiopia, Bangladesh and Kenya, the research will generate data on climate, hydrology, health, poverty and demographic trends in order to inform future decision-making by governments and international organisations to improve water security.

Pharmacy as a laboratory of modernity

Barry Murnane, Associate Professor in German, is currently working on a project with the TORCH, The Oxford Research Centre in the Humanities, on research into the treatment of lung disease in the 19th century. A collaboration with the Science Museum in London, the project draws on the Wellcome Medical Collections to focus on the material

dimensions of medical therapy, and is contributing to the work of curators as they redesign the museum's medical history display. Other activities include workshops with lung disease stakeholders and education specialists, outreach sessions and public events, and the development of new ways to disseminate research in pharmaceutical history.



A collection of Newton Inhalers used for treating lung disease in the 19th century

Mykrobe

Scientists at the Wellcome Trust for Human Genetics have developed an easy-to-use computer program that can quickly analyse bacterial DNA and predict which antibiotics will work. Drug-resistant infections pose a major threat to global health and one of the best ways to prevent the spread of resistant

bacteria is to make sure that patients are treated quickly with the right type of antibiotic. The Mykrobe predictor software runs on a standard laptop or tablet and can analyse the entire genetic code of a bacterium in under three minutes without the need for specialist expertise.

Monitoring chicken flock behaviour

Researchers at the Department of Zoology have developed a technique to monitor the movement of chickens that can be used to predict which flocks are at risk of becoming infected with *Campylobacter*, the most common bacterial source of food poisoning in the UK.

By using a camera system to analyse the 'optical flow' of chickens, at-risk flocks can be detected when the birds are only seven to ten days old. This new early warning system has the potential

to transform the way *Campylobacter* is controlled, with benefits for both human health and animal welfare.



At-risk flocks can be detected from very young birds

FACTS & FIGURES:

16%

of research income came from the Wellcome Trust – the largest funder with £84.7m

46

different countries contributed to research funding

999

separate organisations contributed to funding Oxford research

£537.4M

– the University's total research income in 2015/16



UNIVERSITY OF
OXFORD

To view further information about the University's year in review, including video interviews and slideshows, visit:
www.ox.ac.uk/annual-review

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