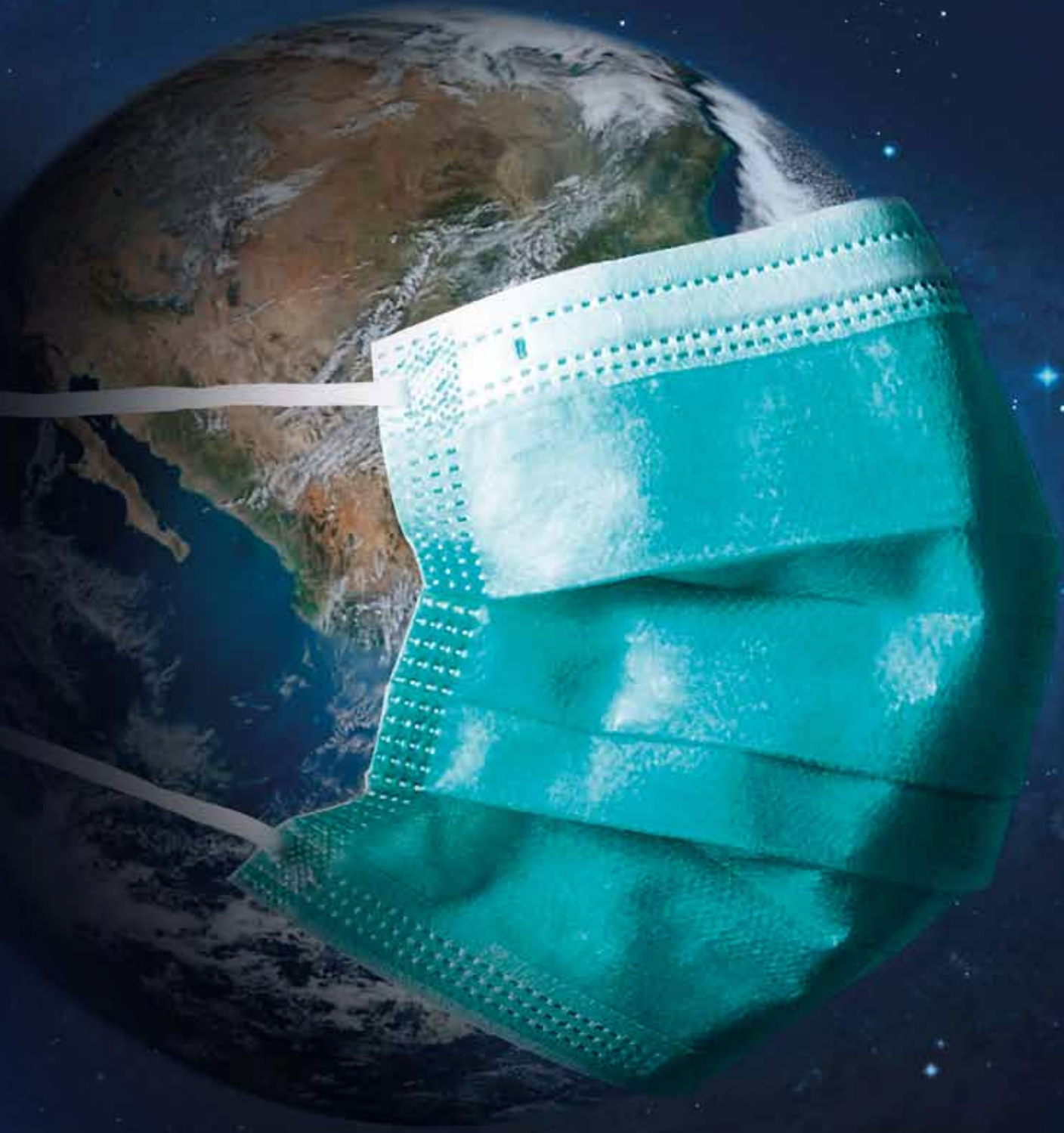
ANNUAL REPORT

2020–2021

VICE-CHANCELLOR'S CIRCLE



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Vice-Chancellor's welcome

> One of the many lessons of the pandemic is the imperative not to ignore high consequence but predictable events.
>
> — Professor Louise Richardson
> Vice-Chancellor of the University of Oxford

There have not been many constants in the two years since we last met in person. It has been a time of ever changing rules, restrictions, adaptations and guidance. But there have been some constants: your unwavering support for our University and the gratitude of my colleagues and I for your generosity.

Philanthropy has played a pivotal role in the evolution of Oxford over the centuries, as the names on so many of our colleges, our programmes, and our buildings attest. This has continued throughout the pandemic. Last spring we announced an extraordinarily generous gift of £80 million from the Reuben Foundation which will enable us to create the first new college in 30 years. Reuben College will be for graduate students and will help us to address the soaring demand for graduate places and the need of our academics for researchers on their teams, without overcrowding our existing colleges. The work of the college will be organised around broad themes critical to the future: climate change, cellular life and machine learning and AI.

One of the many lessons of the pandemic is the imperative not to ignore high consequence but predictable events. The risk of pandemics is one example, another is the growing risk of anti-microbial resistance (AMR). Due largely to the overuse of antibiotics in agriculture, we are becoming increasingly resistant to antibiotics. Left unchecked this could herald a return to the days before penicillin was first discovered here in Oxford, when minor medical treatments regularly led to infections and loss of life. Thanks to the remarkable gift of £100 million from Sir Jim Ratcliffe earlier this year, the INEOS Oxford Institute will be at the vanguard of global research into AMR.

Last spring we felt very fortunate to have the long Easter break to plan for Trinity term, never imagining that we would still be adapting to the pandemic in Michaelmas, Hilary and another Trinity term. Each term has been different. Last Trinity term we moved all teaching and assessment online and sent almost all students home. In Michaelmas term we welcomed our largest student cohort ever and taught them both online and in person. Hilary term was different again, with many students here but very little face to face teaching permitted and, as I write, we await guidance on how many of our students will be permitted to return for Trinity term. Throughout, the colleges and the University have worked together like never before, ensuring the safety of our students and staff and the protection of our mission of teaching and research.

We have also found time to celebrate. This year we have celebrated the centenary of the – belated – admission of women to full membership of the University with events and academic appointments. The highlight was the appointment of Professor Brenda Stevenson as the inaugural holder of the newly endowed Hillary Rodham Clinton Chair in Women's History.

In the pages that follow we provide more insight into our activities, most of which are only possible because of the generous support of our alumni and friends. Thank you.

Professor Louise Richardson
Vice-Chancellor of the University of Oxford

> Being in this environment is an awe-inspiring and holistic experience that goes beyond academic benefits. Studying at Oxford, where I can conduct the most cutting-edge research in my field, means I can pursue my dreams. The scholarship made this possible for me.

— Kristýna Rendlová
Baillie Gifford-AHRC Scholar

(Left) "The Great Abu Sa'ud Teaching Law",
Folio from a *Divan* of Mahmud 'Abd-al Baqi, mid-16th century
The Metropolitan Museum of Art, 25.83.9

(Right) A chemistry graduate carrying out research
using a Nuclear Magnetic Resonance spectrometer

Championing the humanities

Graduate students in the humanities are pursuing their dreams thanks to the generosity of new VCC member Baillie Gifford, an investment management firm. Nine DPhil (PhD) scholars are already benefiting from the donation, which has been matched by the Arts and Humanities Research Council to provide fully-funded scholarships to 12 scholars by 2023–2024.

Joana Perrone is one of the first cohort of Baillie Gifford-AHRC Scholars. She is researching femicide – the killing of women because of their gender – in Brazil. She said: 'I have developed a dataset that contains all femicide cases reported to the Brazilian media since January 2019, and I am drawing very interesting data from the reports. I want to thank Baillie Gifford for supporting humanities scholars and our research, which is often overlooked but has massive social, political and cultural impact.'

Kristýna Rendlová, also a scholar in the first cohort, is studying the pictorial representation of architecture in 15th and 16th-century Ottoman illustrated manuscripts as part of her scholarship. Kristýna explores the range of images of Persianate, Byzantine, European, Hijazi and Iraqi origin that co-existed – and occasionally interacted – within Ottoman book painting during its formative phase. Kristýna's research sheds new light on the processes of artistic exchange and the understanding of images as they were framed by diverse cultural-historical, ideological and creative forces within the early modern Ottoman Empire.

Professor Karen O'Brien, Head of the Humanities Division, says: 'Talented graduate students are the lifeblood of a vibrant academic community, and are the professors, policy-makers and business leaders of tomorrow. These scholarships support our students at a critical period in their academic development.'

As well as funding scholarships, Baillie Gifford's support has also established the Baillie Gifford Writing Partnerships Programme, which has paired more than 250 graduate students and postdoctoral researchers in the humanities with a partner for regular writing meet-ups. The programme has become even more popular during lockdown as researchers seek guidance and peer support to overcome the challenges of isolation and anxiety caused by the coronavirus pandemic.

www.humanities.ox.ac.uk

Inspiring the next generation

> I am extremely grateful to have received such generous support. Holding an endowed chair enables me to focus on my scientific work, while also dedicating important time to mentoring female scientists as part of my goal to make science a more accessible career choice.

— Professor Dame Carol Robinson
Dr Lee's Professor of Chemistry

In 2020 the University began to celebrate the centenary of women's right to matriculate and to graduate from Oxford. This milestone has been an opportunity to recognise the multiple ways in which women have contributed to the University and the world, as well as to commemorate those who provided the impetus for this change. These pioneering figures are a source of inspiration today, a reminder of past, and future, achievements.

Professor Dame Carol Robinson is numbered among such pioneers. After leaving school at 16, she took an unusual route to graduation. While working full time as a technician, she participated in the Royal Society of Chemistry's graduation scheme and completed her undergraduate studies. It is worthy of note that she subsequently was the President of the Royal Society of Chemistry from 2018 to 2020.

In a record two years, Professor Robinson completed her PhD at Cambridge University. Thereafter she took an eight-year career break to raise her three children before undertaking a postdoctoral position at Oxford under the late Professor Sir Christopher Dobson – her mentor throughout her career and lifelong friend. Professor Robinson now applies the same mentorship principles of encouragement and confidence building to her own researchers, particularly female academics working at all levels in science.

Today, Professor Robinson's research is dedicated to the study of protein structure, function and interactions using mass spectrometry. In her early experiments she exploited the capability of electrospray mass spectrometry to study individual proteins. Studying protein structures is key to understanding many diseases and to the development of treatments. In 2018, the group discovered a lipid which regulates the coupling of G-protein coupled receptors, the target of more than 40% of marketable drugs. This led to the creation of OMass Therapeutics, founded by Professor Robinson, which works to discover novel medicines using mass spectrometry.

Professor Robinson remains at the forefront of gas phase structural biology, a field she established and continues to dominate worldwide. Her work has attracted numerous awards and prizes, including the Royal Society's Gold Medal (A) and the Othmer Gold Medal. Professor Robinson is Oxford's first female professor of chemistry and currently holds the chair of the Dr Lee's Professor of Chemistry. Recently, the endowment of her chair was generously supported by a member of the Vice-Chancellor's Circle and graduate of Oxford's Department of Chemistry.

Inspired by their tutors while a student at Oxford, the donor wished to support female academics and encourage the next generation of pioneering female chemists. The donor gave a generous gift which, combined with match funding from the Endowment Challenge Fund, made the chair's endowment possible.

The University is privileged to work with donors who are passionate about supporting women in science. Their foresight and generosity continue the legacy of Oxford female pioneers and allow scientists, such as Professor Robinson, to inspire the next generation of female scientists.

www.chem.ox.ac.uk

The positive impact of video games

It is often claimed that the overall mental well-being of young people is undergoing a pronounced period of decline, with some implying that digital technologies might be driving this trend. Over the past three years, the Programme on Adolescent Well-Being in the Digital Age at the Oxford Internet Institute (OII) has been investigating both of these assumptions with empirical data drawn from more than two dozen countries.

The programme, led by Professor Andrew Przybylski, and funded through the support of VCC member the Huo Family Foundation, is the first of its kind in capturing the 'whole picture' on how technology can impact a child's mental health. Rather than asking players how much they play, it uses industry data on actual play time for popular video games, such as *Plants vs Zombies: Battle for Neighborville* and *Animal Crossing: New Horizons*.

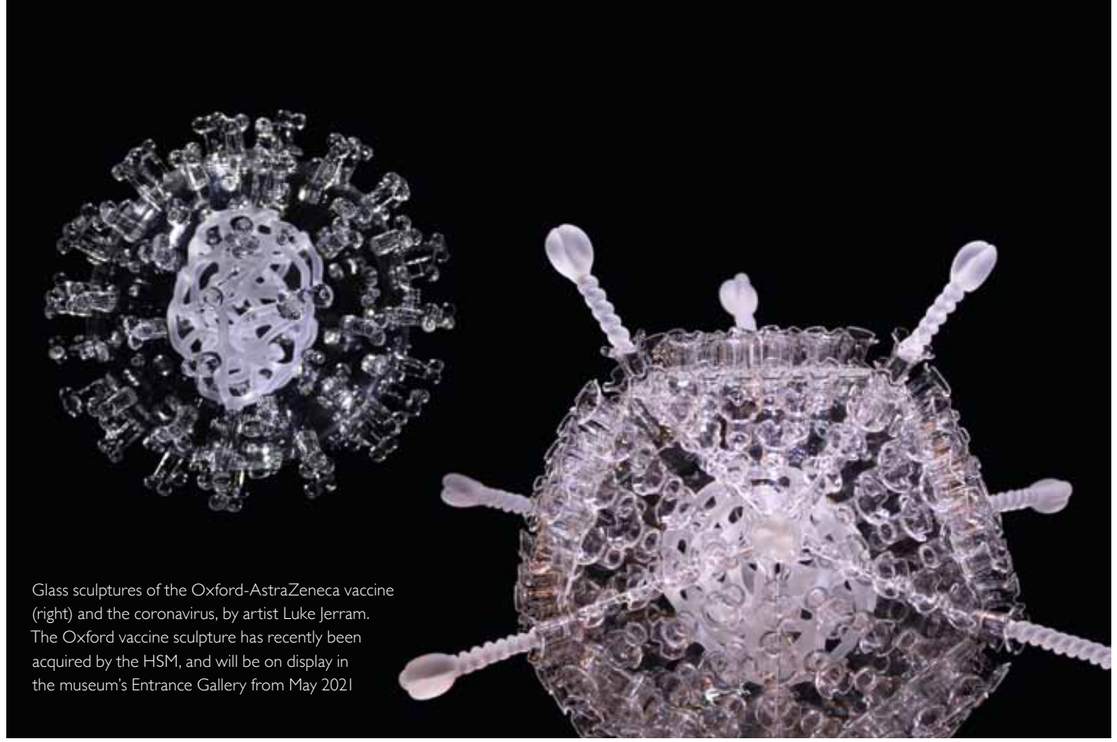
The study suggests that experiences of competence and social connection with others through play may contribute to people's well-being. Indeed, those who derived enjoyment from playing were more likely to report experiencing positive well-being. These experiences during play may be even more important than the actual amount of time a player invests in games and they could play a major role in the well-being of players.

Professor Andrew Przybylski says of the study, 'Our findings show video games aren't necessarily bad for your health; there are other psychological factors which have a significant effect on a person's well-being. In fact, play can be an activity that relates positively to people's mental health – and regulating video games could withhold those benefits from players.'

The next stage for the programme, which will continue until 2022, is to broaden the amount of data available for academics. This will allow them to conduct independent research on gaming and young people, and to use the findings to empower parents and policy makers to make informed decisions based on facts rather than scaremongering headlines.

The OII is a multidisciplinary research and teaching department dedicated to the social science of the internet. Since its founding in 2001, OII's research has had global impact on policy debate, formulation and implementation, as well as a secondary impact on people's well-being, safety and understanding. The OII tackles society's big questions with the aim of positively shaping the development of the digital world for the public good.

www.oii.ox.ac.uk



Glass sculptures of the Oxford-AstraZeneca vaccine (right) and the coronavirus, by artist Luke Jerram. The Oxford vaccine sculpture has recently been acquired by the HSM, and will be on display in the museum's Entrance Gallery from May 2021

Capturing history in the making

> A dedicated Curator of Modern Science is central to the ambitious plans for transforming the History of Science Museum into the prime place within our University where the stories of Oxford science can be told for the wider public and academics alike, onsite, offsite and online.
>
> — Dr Silke Ackermann FSA
> Director, History of Science Museum, University of Oxford

Over the past year, academics from across the University have been engaged in an urgent response to the coronavirus pandemic. The world has looked to Oxford for treatments and a vaccine to protect communities globally. As a result, the impact and potential of science have never been so relevant, nor has the University's research been so closely followed.

For nearly 100 years, the History of Science Museum (HSM) has been collecting and sharing the stories of Oxford's ground-breaking scientific discoveries. Co-curated exhibitions such as the award-winning *Alice in Typhoidland*, which explores the biology, history and current context of typhoid using the story of one of Oxford's most famous characters, Alice Liddell (Alice in Wonderland), help to bring scientific achievements and the stories of researchers to the public. The global pandemic is history in the making and the HSM is playing a critical role in capturing and preserving it.

Since the beginning of the pandemic, Dr Silke Ackermann, the Director of the museum, in partnership with the Bodleian Libraries, has been collaborating with colleagues across the University on a rapid-response project, *Collecting COVID*. This project aims to preserve and share the personal stories and material heritage of Oxford's COVID-19 response, from test kits to prototype ventilators and, of course, vaccine-related items.

Ahead of its centenary in 2024, the HSM is embarking on an ambitious strategy to redisplay and reinterpret its world-class collection, providing a platform for engagement with science in Oxford. The museum is creating the dedicated role of Curator of Modern Science to help achieve these ambitions and to lead a strategy for its contemporary collections. The curator will work closely with colleagues across the wider University to gather and share the stories and objects which represent the research and achievements of its scholars: not just the celebrated discoveries, but also lesser known breakthroughs from an array of material and stories across departments. These stories will be made accessible to all through exhibitions at the museum, within the departments where the research took place, and online.

The coronavirus pandemic has brought into focus the relevance of science to society. The HSM illustrates the impact of contemporary science on everyday lives and Oxford's contribution to the world.

www.hsm.ox.ac.uk

The threat of ‘Disease X’

> Last year we moved at unprecedented pace in unprecedented circumstances. We identified unexpected needs for funding as we worked, but thanks to the overwhelming support of donors from across the globe, Oxford’s vaccine development did not suffer delays and proceeded at a rapid pace.

— Professor Sarah Gilbert
Saïd Professor of Vaccinology and lead researcher on the vaccine programme

(Main) Professor Sarah Gilbert

(Right) Scientist prepares a ‘Flow Cytometer’ for use. This machine can be used to study different immune cell populations following vaccination.

Before 2020, it was unimaginable that life could change so radically in just a few short months. Over a year has passed since the new strain of coronavirus and the highly contagious, and sometimes fatal, disease that it causes – COVID-19 – was first discovered.

COVID-19 is not the first disease to be a global threat: globalisation and population growth have increased risks of rapid transmission of pathogens. Decades of world-leading research have given Oxford’s researchers a keen awareness of the risk posed by ‘Disease X’. This awareness has been embedded into high-threat infection research programmes in Oxford and across the world through its partnerships in Southeast Asia, Africa and Latin America. The University’s team uniquely had the foresight, the innovative technology and the experience to understand and respond immediately to the risk that the new coronavirus presented.

Requirements for a vaccine capable of controlling a pandemic include the ability to ship, store and produce it at low cost. By January 2020, Oxford’s team already knew that the viral vector, ChAdOx1, which had been tested in clinical trials for many diseases including influenza and tuberculosis, fitted the bill. This vector was used to create Oxford’s COVID-19 vaccine, ChAdOx1 n-Cov-19, and it was in human trials by April.

Working with a production and deployment partner was vital to ensure that the vaccine was accessible. Oxford found that partner in AstraZeneca, which began manufacturing large amounts of the vaccine ‘at risk’ – before the vaccine was proven to be effective – to accelerate the timeline. The partnership agreement includes guarantees that distribution would be equitable and affordable, and that neither Oxford nor AstraZeneca would make a profit from the vaccine during the pandemic.

In addition to its vaccine, Oxford also produced the first evidence of an effective treatment through its ongoing drug trial, RECOVERY. In February 2021 the anti-inflammatory treatment, tocilizumab, used in conjunction with the low-cost steroid dexamethasone, was found to reduce death risk by about a third for patients on oxygen and to halve it for those on a ventilator.

Creating and testing a vaccine is expensive, as is running large-scale drug trials, but thanks to the pivotal support of generous donors, the team was able to deliver results quickly. The University is indebted to all 2,000 individuals, trusts and companies who gave their support.

Particular thanks go to VCC member Lakshmi Mittal and his family, whose support has secured the future of a critical professorship in vaccinology at the University. The post will be known as the Lakshmi Mittal and Family Professorship of Vaccinology and is currently held by Professor Adrian Hill.

Professor Hill is the Director of the Oxford Jenner Institute. In 2014 he led the first clinical trial of a vaccine aimed at controlling the Ebola outbreak in West Africa, thus kick-starting an initiative at the Jenner Institute to develop vaccines for outbreak pathogens. Professor Hill’s own vaccine research programme has developed one of the most promising potential vaccines for malaria, which is currently in large-scale trials in sub-Saharan Africa.

www.research.ox.ac.uk/Area/coronavirus-research

Pandemic preparedness

Throughout the pandemic, the University has proven its exceptional scientific capacity to make life-saving discoveries. Oxford is an innovator, and the team has already started to assess the future and the need for a sustainable infrastructure to enable humanity to respond to the next global pandemic.

Oxford’s vision is to develop a ‘Pandemic Science Institute’ to accelerate and expand its capacity to develop vaccines, therapies and technologies for existing and emerging diseases. This initiative will integrate disciplines from across the University, encompassing international partnerships, buildings, research programmes and scholarships to produce a globally-focused pandemic response platform.

2020 is a catalyst for change, and, by investing in innovative and sound science, we can ensure resilience, economic stability and global health security now and for future generations. Together we have a unique opportunity to shape the future of our global society.

> Over the past year, it has been a real pleasure to bring members of the Circle together online for a range of stimulating and engaging events.

— Professor Louise Richardson
Vice-Chancellor of the University of Oxford

Recognising your support

About the Circle

Throughout the centuries, the support of philanthropists has contributed significantly to the life and work of the University of Oxford. The outstanding generosity of supporters continues to transform lives and societies around the world today.

The Vice-Chancellor's Circle, launched in 2009 to recognise benefactors to the University and its colleges, is one of the University of Oxford's recognition societies. Philanthropic support given by members of the Vice-Chancellor's Circle, and by members of the Chancellor's Court of Benefactors (led by the Chancellor, The Rt Hon Lord Patten of Barnes, CH), helps to ensure that the University remains a world-class institution at the forefront of outstanding teaching and benefits society on a national and global scale.

Membership of the Vice-Chancellor's Circle enables donors to hear first-hand from the Vice-Chancellor about the strategic direction of the University. Through regular communications and events, members gain a greater understanding of the work across the University, and are given unique insights into the impact of their support on research and scholarship at Oxford.

Exclusive member events

Over the past year, VCC members have been invited to attend a number of special webinars, providing them with an exclusive insight into Oxford's ground-breaking research into COVID-19. The Vice-Chancellor has hosted these events, which have featured eminent academics including Professor Richard Cornall, Head of the Nuffield Department of Medicine, and the lead architects of the Oxford vaccine: Professors Sarah Gilbert, Adrian Hill and Andrew Pollard. Pioneering research like this could not happen without the generosity and commitment of the University's donors.

In May, members of the Circle were brought together online for the Vice-Chancellor's Annual Meeting for the first time. This event, hosted by the Vice-Chancellor, was designed to mark the centenary of the admission of women to Oxford. Professor Richardson led a panel discussion, which included Professors Patricia Clavin, Alison Noble, Irene Tracey and Ngaire Woods, and invited them to reflect on their research and careers, and on gender equality in academia.

Staying in touch

The University regularly communicates with members of the Vice-Chancellor's Circle to ensure that they are at the forefront of the latest developments. On a regular basis, Circle members are sent the email newsletter *Oxford Perspectives*, which includes news, events and research from across the University. If you are not receiving *Oxford Perspectives* and would like to, or have any comments or suggestions on your membership of the Circle, please contact:

Mr Oliver Greig
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(Main) Oxford's iconic spires

(Right) Annual Meeting of the Vice-Chancellor's Circle, 2019

VICE-CHANCELLOR'S CIRCLE

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