ANNUAL REVIEW
2017

OUTSTANDING RESEARCH
AMBITIOUS DEVELOPMENTS
GLOBAL SOLUTIONS

WORLD CHANGING GLASGOW
I am pleased to introduce our Annual Review for the year August 2016–July 2017, which marks our successes and celebrates our achievements.

This was a memorable year in many ways at Glasgow. We elected a new Rector, the renowned human rights lawyer Aamer Anwar, who like myself is a graduate of Glasgow. During his three-year term, he will represent the student body as their spokesperson, and I will be working closely with him on student issues.

In late 2016, I visited East Asia as part of the first Russell Group delegation to China; it was also Glasgow’s largest-ever delegation to India. The visits were designed to further enhance our ties of education, business and strategic collaboration with the countries. New partnerships and research collaborations were discussed, and opportunities for more students to come to study at Glasgow were explored.

In March, I was pleased and honoured to be chosen as the new chair of the Russell Group, the network of the UK’s 24 principal research-intensive universities. Now, more than ever at this time of uncertainty and change, it is vital that these leading institutions have their voices heard, understood and heeded.

In May, we announced our flagship research beacons project. We identified six crossdisciplinary fields where we lead the world in research excellence:

- addressing inequalities
- cultural & creative economies
- future life
- one health
- the nano & quantum world
- precision medicine & chronic diseases.

These areas have attracted major investment, both financial and intellectual, and bring together world-class researchers from across the University who are working to address today’s crucial global challenges.

Finally, I was delighted to receive the honour of a knighthood in the Queen’s Birthday Honours in June, an award I consider to be as much for the whole of the University as it is for me.
IN AUGUST research into Alzheimer’s disease received a major boost with a £4.2m Wellcome Collaborative Award to our Professor of Molecular Pharmacology Andrew Tobin, an expert in the brain’s protein receptors. His research into the design of the next generation of drugs to treat diseases such as Alzheimer’s aims to help restore memory loss and treat a variety of other symptoms. An estimated 47 million people live with dementia worldwide and the numbers affected are expected to double every 20 years. Alzheimer’s disease is the most common cause of dementia, affecting 62% of those diagnosed. Alzheimer's disease received a major boost with a £4.2m Wellcome Collaborative Award to our Professor of Molecular Pharmacology Andrew Tobin, an expert in the brain’s protein receptors. His research into the design of the next generation of drugs to treat diseases such as Alzheimer’s aims to help restore memory loss and treat a variety of other symptoms. An estimated 47 million people live with dementia worldwide and the numbers affected are expected to double every 20 years. Alzheimer’s disease is the most common cause of dementia, affecting 62% of those diagnosed.

IN OCTOBER we joined UNESCO’s prestigious universities network and established the first UNESCO Chair in Refugee Integration through Languages & the Arts. The chair, held by Professor Alison Phipps, will be delivered in partnership with the University’s Refugee, Asylum & Migration Network, along with international researchers, artists and voluntary organisations.

IN SEPTEMBER a team of scientists led by researchers from our Institute of Biodiversity, Animal Health & Comparative Medicine and Centre for Virus Research used genetics to predict future outbreaks of vampire bats’ rabies virus (VBRV) on the Pacific coast of South America. In Latin America, VBRV affects livestock production and causes lethal human rabies outbreaks, particularly in the Amazon rainforest. The team used genetic markers that linked patterns of bat genetics to geographical pathogen spread, revealing that the recent spread of rabies to new regions followed the dispersal of male bats. DNA analysis of the bats indicated a gene flow across the Andes Mountains, connecting the VBRV-endemic Amazon rainforest to the virus-free Pacific coast. The scientists projected future VBRV invasion routes through northern Peru, predicting that the first virus outbreaks on the South American Pacific coast could occur by June 2020.

IN NOVEMBER a high-profile study found that being a Scout or Guide seems to protect against mental illness later in life. Together with colleagues from the University of Edinburgh, our social scientists analysed the data from a lifelong study of almost 10,000 people born in 1958 from across the UK. They found that those who had belonged to the Scouts or Guides are likely to have better mental health at age 60. Scout and Guide activities also seem to narrow the gap in the incidence of mental illness between those from richer and poorer backgrounds. The team’s findings suggest programmes that help children develop these skills may have lifelong benefits. They also suggest that attending these groups may help build resilience against common stresses in life, or may increase a person’s chances of achieving more in life, so that they are less likely to experience such stresses.

IN DECEMBER our Confucius Institute was named Confucius Institute of the Year, at a conference in Kunming, China. In partnership with one of our strategic collaborators, Nankai University, our institute aims to promote Chinese language and culture, and an understanding of contemporary China. It offers language classes, organises seminars and cultural events, and engages with businesses.

IN JANUARY a £2m funding boost to enable us to launch a joint healthcare project with Malawi’s College of Medicine was announced. Our scientists from the Centre for Infection, Immunology & Inflammation, within the Institute of Infection, Immunology & Inflammation, will study inflammatory and cardiac diseases in both Malawi and Glasgow. The project, which will help set up three new laboratories in Malawi, follows an increase in the number of Malawians suffering from non-communicable diseases such as cardiac disease, hypertension and asthma. It will compare and assess communities in Blantyre (Malawi) and Blantyre (Scotland). The project, which will help set up three new laboratories in Malawi, follows an increase in the number of Malawians suffering from non-communicable diseases such as cardiac disease, hypertension and asthma. It will compare and assess communities in Blantyre (Malawi) and Blantyre (Scotland). The results will be of mutual benefit, as they will be used to inform research into Glasgow’s chronic health problems while also aiming to improve healthcare in Malawi. This is believed to be a unique study between two such countries.
IN FEBRUARY we were delighted to be placed in the top 20 of the world’s most international universities. The rankings, published by Times Higher Education, took into account the proportion of international students and staff, as well as journal publications with at least one international co-author.

Times Higher Education describes the institutions on the list with the strongest global connections as having a “cultural disposition” to think beyond borders. As a globally connected university we take pride in establishing creative and vibrant partnerships with communities, colleagues and students across the world, such as the strategic partnership agreement we signed this year with the University of Sydney.

IN APRIL we were chosen as the lead institution in a consortium of nine universities and four professional bodies to study the UK’s housing system and seek to tackle chronic housing problems and influence future policy. The new UK Collaborative Centre for Housing Evidence will see staff located at five hubs across the UK in Glasgow, Sheffield, London, Cardiff and Belfast.

“This centre draws together internationally renowned experts across a range of fields,” said Professor Tony McEnery, Interim Chief Executive of the Economic & Social Research Council, which is providing the bulk of the funding for the centre. “It will serve as a vital national institution and provide a leading voice in the UK on housing issues.”

IN MAY the first phase of our major £1bn campus development project was set in motion. One of the biggest educational infrastructure projects in Scotland’s history, it will expand and radically transform our campus in the coming years.

The new Learning & Teaching Hub is the first building planned for construction. The hub will increase teaching capacity, housing 3,000 students, and will give access to interdisciplinary workspaces, from quiet zones to social spaces. It will combine flexible study space with multi-styled and technology-enabled teaching, and offer round-the-clock access.

IN JUNE we held our first ever graduation ceremonies in China, when 138 students were awarded Glasgow degrees at Nankai University in Tianjin and the University of Electronic Science & Technology of China in Chengdu.

The two ceremonies represent a huge step forward in our strategic global partnership connections. We recognise the power and importance of our international collaborations and believe in the benefits of combining the very best of the British and Chinese university systems.

IN JULY we were awarded a £7.1m grant to set up a Global Challenges Research Fund Centre for Sustainable, Healthy & Learning Cities & Neighbourhoods. Part of a huge £225m international research funding announcement from the UK government, the project will study urban transformations in 14 cities in Africa and Asia. The new centre will strengthen research capacity both in developing countries and in the UK and conduct studies to address the challenges caused by large-scale rural-to-urban migration, enabling us to better understand how people’s wellbeing can be shaped by the neighbourhoods where they grow up.
Our biomedical engineers developed a revolutionary technique to promote bone regeneration using a polymer which helps stimulate growth factors – molecules that orchestrate development and, if harnessed correctly, can drive regeneration. By coating materials such as hip implants, bone grafts or spinal cages in a thin layer of this polymer, we can encourage bone regeneration targeted on the areas where it is required.

A project designed to help space explorers create their own chemicals on demand was launched – literally – in February. A “digital chemistry set”, containing an experiment designed by Regius Professor of Chemistry Lee Cronin, was sent into space to study the challenges of low- and zero-gravity environments for synthesising drugs.

Back on earth, we examined how supplying off-grid solar power has brought new progress to rural communities in India. The rapidly decreasing cost of solar panels has allowed some of the 240 million Indians living without electricity to benefit. Working with colleagues in the US, both the potential and limitations of providing basic energy access from solar microgrids was studied.

Our research often influences government policy. In May, the National Missing Persons Framework for Scotland was announced, underpinned by award-winning research from our human geographers. In close collaboration with the Scottish Government and Police Scotland, this initiative will allow for a more robust and consistent response to individual cases of missing people, focusing on preventing people from going missing in the first place and limiting risk and harm to those who do.

We aim to create a research environment in which commercialisation can flourish. Among our spin-out companies that celebrated success this year, Caldan Therapeutics, which focuses on finding novel treatments for type 2 diabetes and related conditions, won a top early-stage company award, and SAW Dx, which aims to more easily diagnose a range of infectious diseases, obtained substantial funding from both venture partners and government to develop clinical tests.
This year our researchers continued compiling the complete works of one of the world’s great poets, Robert Burns, creating a rich resource for the future.

It is estimated that it will take until 2024 to bring together all of Burns’ poems, songs, letters and other works into one major collection, comprising ten volumes.

The first three volumes were produced thanks to £1.1m of funding from the Arts & Humanities Research Council. Their support continued with a second major grant, this time for £1m, which secures the next phase in the project.

This new stage is expected to take six years and will focus on Burns’ letters and correspondence as well as his poetry. In addition to three volumes of letters and two of poems, the team will produce the Oxford Handbook to Robert Burns (40 critical essays based on and around the edition) and online workshops on editing Burns and on Burns forgery.

The work will be carried out at our renowned Centre for Robert Burns Studies, which aims to lead in the development of eminent Burns research.

Co-director of the centre Professor Gerard Carruthers believes the project is fundamental to the understanding of the writings that Burns left behind. “It allows us at last to produce a thorough and complete edition of Burns across ten volumes,” he says. “Scotland’s national Bard, a world writer as well, deserves nothing less.”

Accompanying our main Burns project, a rare collection of printed song sheets dating from the 18th century was donated to the University’s Archives & Special Collections by one of our graduates. The collection was compiled in a book belonging to an Agnes Burns and contains more than 100 songs with music. Given that Robert Burns’ mother, sister and niece were all called Agnes, our academics have begun studying the donation to establish its precise origins and history.

We also shared our Burns expertise with the world through a new online course. Over 7,000 people signed up in the first month after its launch in September 2016. The multidisciplinary course looks at his life, work and legacy and introduces students to some of his key poems, songs, letters and prose writing.
We continued to blaze a trail in imaging this year. Our latest facilities are a milestone in our progress as a driving force in precision medicine.

An eagerly awaited new arrival made its appearance at the Queen Elizabeth University Hospital (QEUH) in November 2016 – Scotland’s first ultra-high-resolution 7 Tesla scanner. One of the world’s most powerful imaging machines, it cost £10m, weighs 17.5 tonnes and was installed in our new Imaging Centre of Excellence (ICE), to allow scientists and clinicians to study the human body in greater detail than ever before.

The ICE building (pictured front cover) officially opened in March 2017 and heralds a new era for precision medicine in Glasgow, with our sights firmly set on becoming a global hub of excellence in the field.

ICE is part of the Clinical Innovation Zone, a 22,000 sq ft space dedicated to biomedical companies, which brings together industry, academia and the NHS to facilitate biomedical innovation and the development of new healthcare technology. Vice-Principal Professor Dame Anna Dominiczak, Regius Professor of Medicine and Head of the College of Medical, Veterinary & Life Sciences said: “Our collaborations with industrial partners such as MR CoTech and BioClavis will allow us to maximise the economic impact of the clinical research excellence at the QEUH.”

In July, the creation of a £5m macromolecular imaging centre at Garscube campus was announced. Housed in our Centre for Virus Research (CVR), it aims to boost structural and cell biology research and provide insights into human health and disease. Dr David Bhella, programme leader at the CVR, said: “The new facility will place the CVR and the University of Glasgow right at the centre of vital structural biology research by offering a world-class capability. The new technology will help us investigate key processes in, for example, infection and cancer biology.”

As well as these major new facilities, we made other significant advances in imaging this year.

A breakthrough in magnetic imaging has been made possible using a new technique which helps to visualise the directions of magnetisation inside an object.

Scientists at the School of Physics & Astronomy, along with collaborators at two Swiss institutions, observed complex internal magnetic patterns in magnetic material and confirmed the existence of “Bloch points”, areas where magnetisation changes abruptly, but which had not been proven until now.

The School of Physics & Astronomy also unveiled a new advanced imaging facility in the form of a xenon plasma focused-ion-beam microscope.

Housed at our Kelvin Nanocharacterisation Centre, the microscope acts as a “nanoscale scalpel'', enabling quick production of thin samples of materials for 3D analysis. It will present unique opportunities for nanomagnetic studies.
It was a significant year in the fight against cancer. Our world-class scientists made huge breakthroughs in treatments for certain cancers.

We moved one step closer to finding a cure for chronic myeloid leukaemia (CML), a rare form of blood cancer. The current treatment simply keeps the disease from advancing and can have troublesome side effects, but this year our researchers found two new drugs that can target and kill the CML stem cells. This groundbreaking discovery could lead to a cure and a better quality of life for patients. The findings will be taken to further clinical trials.

In June, our Paul O’Gorman Leukaemia Research Centre was awarded €3m by the European Research Council. The centre is recognised internationally as a hub of excellence for leukaemia research and houses the largest biobank of CML patient samples in the world. The grant will allow the centre’s team to study drug-resistant leukaemia cells and use precision medicine to target them better.

Our research into pancreatic cancer was given a boost with the announcement of up to £8m of funding from Cancer Research UK to lead a project that could transform pancreatic cancer trials. Patients will be selected based on their individual tumour and given tailored treatment adapted for its molecular profile. Professor Andrew Biankin, director of the Translational Research Centre at our Institute of Cancer Sciences, said: “We aim to transform how we treat pancreatic cancer by matching the right treatment to the right patient. The funding puts Glasgow at the centre of pancreatic cancer treatment in the UK, if not the whole of Europe.”

In addition to this research, further pancreatic cancer clinical trials in conjunction with Cancer Research UK launched in four hospitals across the UK. These trials aim to make cancer cells more responsive to chemotherapy and radiotherapy. Chief investigator Professor Jeff Evans from our Institute of Cancer Sciences said: “This is the first time we’re looking at ways to make pancreatic cancer cells more sensitive to radiotherapy. One way to make pancreatic cancer a more treatable disease is to shrink the tumour enough to make surgery a possibility and we hope to see that happen in this trial.”

Additional collaborative clinical trials investigated specific drug combinations for certain types of lung and other cancers which have very low survival rates. The trials could help to bring more treatment options to patients. By working closely with clinicians, industry and research agencies, we aim to continually improve the options and outcomes for people living with cancer.
FOLLOWING HIS AWARD, TIM COOK HELD A FIRESIDE CHAT IN OUR BUTE HALL, WITH OVER 1,000 STAFF AND STUDENTS IN ATTENDANCE. HE LATER TWEETED: “HUMBLED AND HONOURED TO BECOME PART OF THE #UOFGLASGOW COMMUNITY. THANKS TO THE FACULTY AND STUDENTS OF THIS GREAT UNIVERSITY!”

OUR HONORARY GRADUATES

We recognised outstanding achievement by conferring 14 honorary degrees in 2016–17.

**DOCTOR OF ENGINEERING (DEng)**

Professor Yanrong Li
President of UESTC, University of Electronic Science & Technology of China

**DOCTOR OF LETTERS (DLitt)**

Vincent Deighan
Artist
Dame Minouche Shafik
Former Deputy Governor of the Bank of England
John Tiffany
Theatre director
Graham Donaldson
Former President of the Standing International Conference of Inspectors of Education
Adete Patrick
Lifelong Learning and Creative Development Manager, Glasgow Women’s Library

**DOCTOR OF MUSIC (DMus)**

Roy McEwan-Brown
Former Chief Executive, Scottish Chamber Orchestra

**DOCTOR OF SCIENCE (DSc)**

Tim Cook
Chief Executive Officer, Apple
Sir Paul Nurse
Chief Executive and Director, The Francis Crick Institute
John Shaw
Vice-Chairman, BIOS Ltd
Dr Patrick Vallance
President, Research & Development, GlaxoSmithKline plc

**DOCTOR OF THE UNIVERSITY (DUniv)**

Robert Calderwood
Former Chief Executive, NHS Greater Glasgow & Clyde
Professor Rashida Manjoo
Former United Nations Special Rapporteur on Violence against Women
Amanda McMillan
Chief Executive of AGS Airports Limited and Managing Director of Glasgow Airport
Our recent run of strong financial performances was reinforced by our figures for 2016–17. We had a total income of £608m, bolstered by an increase in our research income to almost £180m.
NAMED ONE OF THE TOP 20 MOST INTERNATIONAL UNIVERSITIES OF 2017 BY TIMES HIGHER EDUCATION