



University
of Glasgow

OUTCOME AGREEMENT

2017–18 to 2019–20

February 2017



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Foreword from The Principal

The University of Glasgow published its new Strategic Plan, Inspiring People Changing the World, in the summer of 2015. The Plan sets out our ambition to build on our current strong position and to continue to improve yet further our reputation, achievements and relative position. Our Mission is to bring inspiring people together in a world-class environment for learning and research, empowering staff and students to discover and share knowledge that can change the world.

Our staff are at the heart of our Plan which focuses on giving them the support, development, infrastructure and environment needed to further the University's ambition to grow our reputation as:

- A place where the best students, regardless of background, are given an education that prepares them to go into the world and make change happen.
- A place where research that positively impacts on the health, wealth and cultural wellbeing of the world is conducted.
- A place that engages with the city of Glasgow and the global community to ensure that they flourish.

The University seeks to deliver a world-class student learning experience by placing teaching at the centre of what we do, shaping our provision within a research rich environment, and working in partnership with students to co-create their learning and to develop their independence and skills. Our commitment to enhancement and innovation in learning approaches, recognises the diversity of our student population and is supported by investment in our infrastructure and teaching and learning environment. Integral to the campus redevelopment strategy is an on-going commitment to new and re-configured learning and teaching facilities and private study spaces that will further support our community of learners and support transitions into the University from a range of backgrounds and pathways.

As measured by our research income and the global citations to our research, the University of Glasgow lies within the top 10 Universities in the UK. Many of the University's areas of research excellence span the subject-areas in each of its four Colleges. The scale and scope of this research activity creates cross-University beacons of research focus, in which Glasgow's staff excel both at progressing human knowledge and applying it to make a difference to society -

Precision medicine — Builds on the University's strengths in basic and translational biomedical research, including novel technological approaches to understanding, managing and treating disease. This has been an area of significant investment, including the £20M Stratified Medicine Scotland Innovation Centre.

One health — Combines the University's expertise in infection and immunity, disease modelling, human geography, social policy, and our longstanding links with developing countries to understand and combat tropical disease. It comprises activities that were awarded the 2013 Queen's Anniversary Prize.

Cultural and creative economies — Connects world-class research in all aspects of cultural life and its heritage, including digital humanities, copyright and information law, and the partnership in the Kelvin Hall museums project.

Nano and Quantum technology — Uses quantum science and Glasgow’s nanofabrication centre to make new types of camera and imaging systems, including a £27M investment to create one of the UK’s four Quantum Technology hubs.

Addressing inequalities — Understanding the causes of local and global inequalities in education, health and society, their impact on individuals and communities, and the effectiveness of policies to address them.

The University is now embarking on one of the single biggest educational infrastructure projects in its, and indeed, Scotland's history. The University Court has agreed to a capital plan and around £450m will be spent over the next five years as part of a wider £1bn investment, to create new, innovative and exciting facilities and infrastructure as well as refurbishing and improving existing estate. With the acquisition of the adjacent 14-acre Western infirmary site, and an Estates strategy in place, we have an unprecedented opportunity to realise our key strategic aims to enhance the quality of the Student Experience, Research Excellence and Internationalisation still further. It’s a unique and exciting chance to leave a lasting legacy that will serve future generations of students and scholars, as well as the surrounding community, for years to come.

In delivering this Outcome agreement, in partnership with the Scottish Funding Council, we demonstrate the unique and significant contribution that the University of Glasgow can make to the priorities of both the Scottish Government and the Funding Council.

Professor Anton Muscatelli
Principal and Vice-Chancellor

Funding, Campus and Sustainable Estate

Funding Position

The ambitions set out in this document relate to current funding levels and funding regime. Any changes to either of these would necessitate a review of this document and possible changes to the ambitions.

We feel that the stretching targets we have set underline our ambitions which are framed in the context of the [Audit](#) of Scotland's Universities by Audit Scotland. Key findings from this include –

Teaching funding: every Scottish and EU domiciled undergraduate place in Scotland was under-funded by 6 per cent in 2014/15. This gap has emerged before the impact of further cuts of 2.9% in teaching funding per student to take effect in academic year 2016/17, which Audit Scotland describe as a risk to high-quality learning and teaching.

Research funding: Audit Scotland note challenges to maintaining Scotland's world-leading position in academic research, including a real-terms reduction of 7% in SFC research funding between 2014/15 and 2016/17.

Capital funding: has fallen by 69 per cent in real terms since 2010/11, by over £55m per year. £1.2 million of BIS capital funding will not be drawn down in 2016/17 and will be sent back to the UK Government unspent because SFC could not find the funds to match it. Capital funding is needed to maintain buildings and buy teaching and research equipment for staff and students.

In overall sustainability: there is a 3.9% 'sustainability gap' across the sector between the recommended surplus institutions should have and the average held by Scottish institutions. This gap has been widening in recent years.

Dumfries

The core purpose of the University of Glasgow at Dumfries is to create a world class, research intensive university environment in niche areas matched to the Dumfries and Galloway location, thereby serving regional and national stakeholders whilst working in an international context. Our vision for the Dumfries campus is for it to be a centre of world-class interdisciplinary teaching, research and lifelong learning. Its areas of specialism include: environment, culture, health, wellbeing, social policy, education and tourism. Our objective is for activity on the Campus to reach the highest academic standards and to serve the social and economic needs of the region. We seek to do this from a position of institutional strength that makes it possible for the University to engage with the considerable partnership and collaboration opportunities that are to be found on the Crichton Campus.

Our presence in Dumfries also allows us to support some key Scottish Government initiatives. For example, by offering Articulation places in partnership with Scotland's Colleges, particularly Dumfries and Galloway College, appropriately qualified HNC students are admitted directly into year 2 of our MA in Health and Social Policy. In this way we provide students from both within Dumfries and Galloway and

further afield, the opportunity to study at a world leading university while helping to meet both the Scottish Governments Regional and Accessibility Agendas.

Sustainable Estate

The focus of the estates strategy is to provide a fit for purpose estate that can support and assist in the delivery of the University's Strategic Plan. At its heart is the campus redevelopment at Gilmorehill, including the recently acquired Western Infirmary site. Investment will, however, continue across other parts of the estate, ensuring that all students benefit from improved teaching and study facilities as evidenced by the recent completion of the Mary Stewart building at Garscube, which provides catering, study and teaching space in a social environment.

The first major facility to be constructed, related to the strategy, will be the new Learning & Teaching Hub which is currently programmed to complete in 2019 and will, when delivered, enhance the student experience and facilitate evolution in pedagogy. The Hub development will provide an additional 1110 learning spaces for students in a range of individual and group configurations that will also provide out-of-hours capacity for student clubs and societies

Additional teaching capacity will total 1854 seats, the centrepiece of which will be a 500-seater auditorium capable of sub-division (250:250). All teaching spaces will support a range of teaching modes from classic lecture to technology enhanced active learning. This will facilitate innovation in teaching, provide a degree of future-proofing and deliver an improved student experience supported by an innovative service model and amenities including catering and student kitchens. The additional study and teaching space will support population growth in excess of 1900 students.

Subsequent facilities planned will add to this, as well as focussing on the other key strands of research excellence and global reach, whilst at the same time, delivering complementary space to encourage and develop innovation and entrepreneurship in a supported environment.

1 Priority 1

Priority 1: Widening access – learning that is accessible and diverse, attracting and providing more equal opportunities for people of all ages, and from all communities and backgrounds

We are committed to raising aspirations in, promoting access to and supporting success within Higher Education for those from non-traditional and under-represented backgrounds. This is outlined in our University Strategy 2015-2020: ‘Studying at our University should be possible for anyone with the necessary talent, commitment and potential, regardless of background or belief’. The University of Glasgow was set up as a civic university to benefit Glasgow and its environs.

We take a progressive and inclusive approach to widening participation (WP) and Access, backed by research and evidence, to enable engagement with disadvantaged groups on a broad and individual basis.

SFC Guidance	Commitment, strategies and evidence of progress
<p>Institutions are asked to summarise their strategies to reduce barriers, and proactively promote access to higher education to learners from deprived or disadvantaged backgrounds. This summary should include evidence of strategic commitment to and aspirations for widening access to disadvantaged groups (specifically those from SIMD20 and care experienced backgrounds), and may include activities to:</p> <ul style="list-style-type: none"> • Identify and address under-representation from protected characteristic and socio-economic groups. • Recruit those from care experience backgrounds, and transitional and support arrangements to assist them complete their programmes of study. • Maximise opportunities for progression from college. • Promote access to high demand courses and professions. • Support learners from disadvantaged and under-represented groups complete their programmes of study. 	<p>Identify and address under-representation from protected characteristic and socio-economic groups.</p> <ul style="list-style-type: none"> • Maintain and develop our portfolio of WP schools outreach and adult learner programmes alongside our partnership and collaborative work to widen access to UofG, but also the rest of Scotland. • Maintain annual entrants via the Top-Up Programme at current levels. • Work with Scottish Government, SFC and the sector to implement the CoWA agenda. • Expand research findings of SFC-funded Impact for Access project, ‘Engaging with MD40 Pupils in High Progression Schools’, analysing data on all Scottish secondary schools. • Credit rate UofG WP programmes on SCQF. <p>Recruit those from care experience backgrounds, and transitional and support arrangements to assist them complete their programmes of study.</p> <ul style="list-style-type: none"> • Maintain and evolve recruitment activity for care and experienced persons and maintain automatic adjusted offer of entry • Maintain and evolve the care experienced student financial support package, which includes bursaries, accommodation and access to funding. • Maintain priority of access to student counselling and disability services and other support services for students with care experience ensuring a dedicated Support Co-ordinator post within the WP team. • The University of Glasgow ask students to self-identify as care leavers upon registration. This is a more accurate source of information than via UCAS providing more than double the numbers. On this basis, we aim to increase care experienced entrant’s year on year. • Our current care experience provision earned the Buttle UK Quality Mark from 2007-2016, at the highest possible exemplary level and we seek to transfer existing Quality Mark provision to fulfil responsibilities as a corporate parent under the Children and Young People (Scotland) Act 2014. <p>Maximise opportunities for progression from college.</p> <ul style="list-style-type: none"> • Maintain annual adult returner Access course entrants at current levels via SWAP / Open Studies / other Access routes, to improve access and outcomes for target groups. • Continue with our articulation program at Dumfries.

<ul style="list-style-type: none"> • The use and impact of SFC strategic investments to support widening access and retention. • Proactively address gender imbalances in programmes, specifically those subject areas with severe imbalances (i.e. >75%). • Demonstrate their current and future commitment to students (and staff) who are carers. 	<p>Promote access to high demand courses and professions.</p> <ul style="list-style-type: none"> • A major strand of our widening access work concerns bringing WP applicants into professional degrees. We are unique in Scotland in having an access route to each professional degree for school leavers and adults alike. We shall maintain and develop further this provision, which can bring real social mobility for individuals and foster true social change within deprived areas in the long-term, i.e. via Medicine, by recruiting more doctors from disadvantaged areas who can diversify the Medical profession, understand more fully the health and wellbeing problems associated with socio-economic deprivation and be more likely to work in these areas for general societal good. • Maintain and develop the SFC-funded Reach West Programme and UofG core-funded Access to a Career Programme in approximately 100 west of Scotland schools, part of the SFC ‘Schools Strategy’. UofG has facilitated significant increases in WP entrants to the four Reach target subjects: Medicine; Dentistry; Law; and Veterinary Medicine. This has encouraged participation from targets secondary schools and as a result, increased participation rates from pupils living in MD20/40 postcode areas. • UofG has expanded the Reach West Programme with the creation of the Access to a Career in Accounting & Finance, Education and Engineering Programme. Seven professional subjects are now covered simultaneously and accompanying contextualised admissions progression agreements are in place. • Maintain and develop recruitment to Medicine via the additional places created by Scottish Government for WP students. UofG received 10 places for 2016 entry and recruited 16, all from MD20/40 postcode areas, Reach target schools or with care experience. We shall look to build on this performance going forward and will work in partnership with SFC and Scottish Government to bring further diversification and growth of WP student numbers to the medical professions. • Develop and rollout the 2015-16 Reach Medicine pilot in Western Isles schools into an ‘island cluster’. Bring a bid to SFC to roll this out to remote and rural areas across Scotland. • Maintain and evolve high-level Access courses to professional degrees: SWAP Access to Medical Studies (Medicine, Dentistry, Veterinary Medicine); SWAP Access to Law, Business and Accounting & Finance; Open Studies Access to Law, Business and Accounting.
	<p>Support learners from disadvantaged and under-represented groups complete their programmes of study.</p> <ul style="list-style-type: none"> • Establishment of a new working group to tackle continuation and retention at all stages of the learner journey. • Target retention work, intervention and provision at identified vulnerable / at risk groups.
	<p>Demonstrate current and future commitment to students (and staff) who are carers.</p> <ul style="list-style-type: none"> • Enhance and develop provision for students who are carers. • Appointment of a Carers Support Coordinator within the WP team, to advise and advocate for student carers. • Update and reinforce 2011 Students’ Representative Council Carers’ Policy (the first of its kind in Scotland). • Put in place data-collection procedures to identify numbers of student carers within UofG. • Continue to work with the Carers Trust and support their ‘Going Higher’ campaign.

2 Priority 2

Priority 2: High quality learning and teaching – an outstanding system of learning that is accessible and diverse, where students progress successfully with the ability, ideas and ambition to make a difference

Short overview of current activity: We are making significant investments in the learning infrastructure through redesigning existing study spaces and learning spaces and planning a multi-million-pound investment in a new learning and teaching building. Linked to this are focused working group activities directed at further improving retention, enhancing induction, supporting transitions from a range of pathways into and through the University, promoting student mobility, developing skills and enhancing employability.

SFC Guidance	Commitment, strategies and evidence of progress
<p>Institutions are asked to summarise their approach to enhancing the quality and delivery of learning and support for students, and outline their strategies to ensure that students leave university with the skills, flexibility and attributes to succeed.</p>	<ul style="list-style-type: none"> • Several million pounds' worth of investment is being made in redesigning existing study and learning spaces, and in creating new study and learning environments. Intention is to support improvements in student satisfaction, increased engagement with study, enhance transition into study, create a locus for student society events and other work-related and extra-curricular student-led activities. • Focusing on entry to years 1 and 2 of the undergraduate degrees, we are developing strategies to enhance transition into, and engagement in, University life especially for Scottish domiciled (home) students, students with caring responsibilities and care leavers. (See also Priority 1). Specific interventions include: <ul style="list-style-type: none"> • Course-specific buddy schemes; • School engagement events; • Partnership working with FE Colleges where Articulation Agreements are in place/are being developed, particularly in Dumfries. • A firm commitment has been made to increasing undergraduate outward student mobility and is reflected in a University Key Performance Indicator (KPI) that addresses study abroad, internships and short-term experiences abroad. • In support of a world-class educational experience, we have institutional and local strategies and action plans to increase overall satisfaction with the student experience as measured by the NSS and as captured in our institutional KPIs. • As outlined in our Learning & Teaching Strategy, we are undertaking University-wide activity to enhance interdisciplinary learning and support increased outward mobility. • In partnership with the SRC and student services, we are increasing engagement with extra-curricular activities through societies, volunteering, internships, enterprise, to promote skills development. • Development of a graduate attributes strategy and recognition scheme leading to revised use of the HEAR. • UofG was a founding member of the Scottish Wider Access Programme (SWAP) in the 1980s and remains a major partner, working in close collaboration with SWAP West to widen access for adult returners to HE to every degree area within UofG. We annually recruit students via both SWAP West and SWAP East. • The 15/16 retention rate for protected characteristic groups was: Disabled: 89.5%, Ethnic minorities: 95.1% and Mature students: 88.2%. It should be noted that due to relatively small student numbers in each of these groups, the rates can fluctuate dramatically year on year. Measure 6 in the targets seeks to deliver improvements in retention across the board and we would expect improvements in these groups also.

3 Priority 3

Priority 3: World-leading research – world-leading universities, nationally and internationally connected with a global reputation for their research

Short overview of current activity: Our research strategy is informed by our performance in REF2014, specifically by the need to strengthen further our research outputs and the impact that they drive. We have completed a systematic external audit at discipline level, in response to which each unit is delivering on specific action plans. A further cycle of reviews will commence in 2017: these will have a strong developmental component and will assess the effectiveness of the previous audit, and drive preparations for the next REF. Recognising that our research is only as good as the staff we employ, we have substantially invested in recruiting and developing researchers at all levels, to create a community of researchers – from our PGR students to our senior leaders – who have the necessary skill, confidence and leadership to focus on global priorities. To support this ambition, we have identified six cross-disciplinary areas that bring together complementary research expertise to address large challenges such as inequalities and the global disease burden. These areas will be supported by the ambitious £1bn plan to develop our estate, which includes a £100M Research Hub. Finally, following a review and renewal of procedures to promote research integrity we are in a strong position to lead the UK community in this area through our recognised setting of best practice.

SFC Guidance	Commitment, strategies and evidence of progress
<p>Institutions are asked to summarise their strategies to enhance the competitiveness and international standing of their research, maximise the impact of their research, and embed a culture where diverse researcher talent is nurtured and developed. Where appropriate statements should outline strategies and aspirations to:</p> <ul style="list-style-type: none"> • Enhance their performance in a future REF exercise. • Grow research income from the UK research councils and other sources, and how they will use REG funding to support research excellence. • Sustain a high-quality environment for research training and development. • Enhance the development and diversity of its researchers (including ambitions for Athena Swan and Excellence in Research recognition), and address equality and diversity issues identified by REF2014. 	<p>1. Research audits and activities to enhance production of 4* outputs:</p> <ul style="list-style-type: none"> • Research audits of the 32 Units that the University submitted to REF2014 to strengthen the quality of their research outputs, impact, environment and leadership. • Interim Research Reviews will appraise the REF-readiness of each Unit to enhance the self-calibration of our quality, and increase the generation of high-quality outputs and impact. • Supporting an emphasis on 4*-quality through various activities including 4* calibration workshops, masterclasses, and revised promotion and recruitment criteria. <p>2. Attracting new and developing existing talent:</p> <ul style="list-style-type: none"> • We encourage PGRs to develop transferable skills, through: cross-university and discipline-specific workshops aligned to the Researcher Development Framework; one-to-one careers or writing advice; community-building events and experiential activities. Success will be measured via the PG Research Experience Survey 2017. • Priorities for research staff include creating opportunities for ECRs contribute to decision-making, and increasing the visibility of research support and development. Progress is monitored via KPIs for the European Commission’s HR Excellence Award. • Flagship initiatives for research staff include the annual research-staff conference and the Glasgow Crucible. All new academic staff are supported with training and mentorship through the Early Career Development Programme. • We have launched University-funded schemes to enhance and grow our research base, including the recruitment of PGRs, Research Fellows, and Professors, and a series of leadership & development programmes for mid-career staff and ECRs.

- Enhance research collaboration including to support the research pools, and promotion of multi /interdisciplinary working.

- Enhance public and cultural engagement and contribute to public policy and public sector delivery.

Institutions are also asked to evidence their commitment to the principles set out in the Universities UK Concordat to support research integrity.

3. Commitment to the Universities UK Concordat to Support Research Integrity:

In 2015 a cross-University working group reviewed the policies and procedures around research integrity. Developments implemented since January 2016 include:

- Appointing a network of 28 Research Integrity Champions and Advisors.
- Enhancing the **visibility** of research integrity via a [new web site](#).
- A revised Code of Policy and Procedures for Investigating Allegations of Misconduct in Research includes the introduction of a University-level 'Integrity Council' to arbitrate on decisions at key stages.
- Providing **research integrity training** to new PGR students and staff.
- Providing assurance that measures are being taken to support consistently high standards, by publishing an annual statement since 2014/5.

4. Enhancing research collaboration:

Collaborations strengthen academic excellence and advance the societal impact of our research. Beyond our commitment to SFC-funded research pools (the SULSA Director appointed in 2016 is based at UofG), Scottish Graduate Schools and DTCs, we have strong research collaborations nationally and internationally. Recent examples are:

- Our STFC-funded contribution to the world-wide project leading to the discovery of Gravitational Waves. The Glasgow suspension technology was pivotal to the instrument sensitivity that made detection possible.
- The AHRC-funded 'Researching Multilingually' project, involving partners in Gaza, the Netherlands and the USA. This research team has received additional GCRF funding from the AHRC, and the PI was recently appointed the UNESCO Chair in Refugee Integration through Languages and the Arts.
- QuantIC: one of four EPSRC-funded UK Quantum Technology Hubs, led by Glasgow and involving 7 Universities and >30 industrial partners.
- SMS-IC: involving 4 Scottish Universities, their academic or related NHS Health Boards, and industrial partners working together to develop precision medicine capabilities combined with the £4m Scottish Ecosystem for Precision Medicine.
- £3.4M MRC/EPSRC Molecular Pathology Node: the biggest of six UK nodes awarded, utilises the clinical academic and industry facilities at the QEUH with an aim to produce new diagnostic modalities in cancer, inflammation and cardiovascular diseases.
- A £4.2M Wellcome Collaborative Award to Professor Andrew Tobin who, with partners in industry and at Monash University in Melbourne, aims to design better drugs for treating neurodegenerative diseases.

Investment in specialist support staff and new systems is facilitating ambitious grant capture: the explicit aim is to increase and diversify our sources of research funding (with a particular emphasis on industrial and overseas sponsors) and to support applications to larger calls, including doctoral training programmes. Specifically, a large-scale restructure of how research support is provided has created dedicated local teams who assist academics from the research proposal stage through to final reporting.

4 Priority 4

Priority 4: Greater innovation in the economy – a national culture of enterprise and innovation leading to a more productive and sustainable economy	
<p><i>Short overview of current activity: Our ambitions in Knowledge Exchange and Innovation build upon our wider goals around research excellence, as articulated in our University Strategy (Inspiring People, Changing the World) – by helping to drive scholarship by engagement. The economic impact of the University, its students and international visitors is already evident. We sustain £1.5bn of output, £800M in GVA and nearly 15,000 jobs across Scotland. Our new strategy outlines the University’s plans to build upon this activity to further enhance the global impact of our research whilst, at the same time, meeting Scottish and UK Government aspirations for entrepreneurship, business growth and economic prosperity.</i></p>	
SFC Guidance	Commitment, strategies and evidence of progress
<p>Institutions are asked to summarise their approach to sustaining a culture in which innovation can flourish, and their work with business, industry, and the public sector to find innovative solutions that support economic growth, and impact on our society and culture. Where appropriate statements should outline plans and/or strategies for:</p> <ul style="list-style-type: none"> • Engaging with the innovation landscape in Scotland including Innovation Centres, Interface, Innovation Vouchers, and the Scottish Government’s proposed innovation reforms. • Delivering the Innovation Scotland Action Plan. • Engaging with SFC and Innovation Centres on the recommendations of the Innovation Centre review. • Delivering the individual institution’s agreed contributions to the nationally agreed University Innovation Fund (UIF) outcomes. • Embedding enterprise and entrepreneurship training in its programmes. • Securing matched-funding from industry for SFC additional skills places. 	<p>The University of Glasgow is committed to enabling greater levels of innovation and enterprise. Key initiatives towards delivering the desired outcomes include:</p> <ul style="list-style-type: none"> • Development of a new Knowledge Exchange & Innovation Strategy for 2017 to 2022 to grow engagement of staff and students with industry, investors and entrepreneurs who can capitalise on our innovations. • Building strategic industry partnerships to enhance innovation and entrepreneurship. Progress includes a campus-based drug discovery partnership with AZ; £27m quantum technologies innovation centre ‘QuantIC’ and support from Santander bank for student entrepreneurship • Continued support for engagement with the SFC Innovation Centres in particular CENSIS and SMS-IC to assist them to realise their aims. Progress includes (i) Leadership in establishing the SMS-IC and the Scottish ecosystem for Precision Medicine (ii) creation of the 22,000 sq ft Clinical Innovation Zone for industry alongside SMS-IC to further engage with business and drive economic development for Scotland around precision medicine; and (iii) Strategic engagement with Glasgow City Region City Deal to realise the potential of the new £32M Imaging Centre of Excellence (ICE) also co-located adjacent to SMS-IC (ICE includes Scotland’s only 7 Tesla MRI scanner. This asset will be used to drive economic growth around precision medicine (anticipated to create up to 400 jobs over 7 years). • Through active participation in RKEC /RCDG, Glasgow is fully engaged in the shaping of UIF outcomes to meet national priorities and deliver against the plans submitted in January 2016. Glasgow is engaged in developing the UIF Evaluation Framework and is participating as lead for National Outcome 1 and contributor in the National Outcomes 2 to 7 in the RCDG led sector collaboration activity. Progress has already been made in areas such as entrepreneurship and strategic partnerships. • Creation of an Entrepreneurial Task Force to evaluate and drive change in the scale of the provision of entrepreneurship support provided to our students. Progress includes development of a new plan to boost student entrepreneurship and support the growth of existing successful ventures such as MindMate Ltd – Converge Challenge Winner (2016) • The £1bn development plan for the former Western Hospital site includes a commitment to creating space within new buildings to foster industry collaboration and entrepreneurship. Progress includes collaboration

with Scottish Enterprise and Glasgow City Council to develop an Innovation District concept from the West End to QEUH to foster economic growth with international reach.

- Glasgow remains committed to supporting the creation of scalable new ventures, in partnership with public agencies (e.g. Scottish Enterprise) and investors (e.g. IP Group plc; Epidarex Capital). ***Progress includes the formation of companies achieving significant funding to date such as Caldan Therapeutics (£4.5m); Cronin Group plc (£5m) and Anacail (£3m)***

5 Priority 5

Priority 5: High-performing institutions – a coherent system of high-performing, sustainable institutions with modern, transparent and accountable governance arrangements

The University Strategy outlines three values: Passionate, Professional and Progressive, that carry key equality references including;

Professional - we are committed to embracing diversity and difference and treating colleagues, students, visitors and others with respect.

Progressive - we believe that studying at our University should be possible for anyone with the necessary talent, commitment and potential, regardless of background or belief.

SFC Guidance	Commitment, strategies and evidence of progress
<p>Institutions are asked to summarise how they ensure continuous improvements in the quality of their governance, promote equality and diversity in all their activities, and demonstrate enhanced sustainability – securing best value for public investment. Summaries should outline how institutions:</p> <ul style="list-style-type: none"> • Are discharging their obligations under the Climate Change (Scotland) Act 2009. • Address statutory requirements to eliminate discrimination, advance equality of opportunity and foster good relations. • Use data and consultation processes to evidence and address under-representation of protected characteristic groups. 	<p>Governance and Senior Women</p> <p>In terms of our Governance, University Court committed to the 40:40:20 as outlined by Universities Scotland. In 2016/17 the gender balance on Court is 42% female, 58% male, with one vacancy. The University continues to strive for a good representation on Court.</p> <p>The University has been on a gender equality journey, with the aim of growing the percentage of senior females in professional and professorial posts. The University has made strong gains by increasing the percentage of female professors from 21% in 2013 to 25% in 2016.</p> <p>The University is currently consulting with staff and students in developing the Public Sector Equality Duty (PSED) due in April 2017, to meet our requirements of the Equality Act 2010. The consultation process has included a variety of mechanisms including:</p> <ul style="list-style-type: none"> • using existing staff and student survey data and reviewing the outcomes by protected characteristic • consulting with staff and students who sit on the relevant protected characteristic group • conducting a mini survey with disabled students • hosting consultation events with the Student Representative Welfare Forum, trade unions and HR <p>The consultations will be on-going as the PSED develops. The relevant Outcome Agreement milestones and Gender Action Plan will be embedded in the PSED as we go forward.</p> <p>Climate Change</p> <p>The University Estates Strategy has been designed to contribute to a reducing carbon footprint with a focus on a reduction in overall energy consumption as well as the introduction of low or zero carbon technologies for energy production with new buildings achieving a carbon footprint of 30% less than existing buildings</p>

6 Cross Cutting Themes

6.1 Partnership working and collaboration

Obtaining funding to undertake collaborative research is extremely important for both establishing and maintaining our European partnerships. The University has a specialised European Team to maximise the return obtained from European Funding sources, particularly Horizon 2020. The University has so far received around €44M in awards from Horizon 2020 for around 70 projects. Over 50% of these projects are large cross-European networks.

In order to strengthen both our European collaborations and increase our influence on European policy decisions, the University is a founding member and has been a driving force behind the recently formed Guild of European Research Intensive Universities. The Guild is, 'committed to developing new forms of collaboration to utilise fully the benefit of our proximity across the European Research Area. We engage with policy-makers to maximise the opportunities for research to inform the politics, culture, science and economy of Europe and its composite states'

The University is also successfully collaborating in Africa, Asia, North America and South America as part of different EU funded research projects. The University supports international collaboration via membership of Universitas 21. This group has member institutions from most regions in the world and includes a research managers working group with the specific purpose of linking researchers and facilitating the creation of joint research projects.

6.2 Equality and Diversity

The University is conducting an Equality Impact Assessment (EIA) of the Outcome Agreement process, and this has influenced this document. The EIA is a living document and will be amended in light of changes to the OA.

6.3 Carers

The University developed a Student Carers Policy in February 2011. The policy statement sets out the aim to ensure student carers are provided *with as much flexibility as possible to facilitate their success*. The policy framework includes a draft Student Carers' Plan to be completed by the student and their Advisor of Studies. The number of recorded Student Carers at the University currently stands at 1076.

The University provides a range of support to staff with caring responsibilities, although many of policies and procedures are as applicable to parents as they are to carers. This includes Time off to Care for Dependents Policy (a flexible three days to support staff during emergency care issues) and the Flexible Working Policy. The University will further develop our policy and monitoring process over the next 12 months.

6.4 Gender

The University has approximately 40% Scottish domiciled male student entrants for the last 3 years. We will aim to increase this by 1% by 2017-18.

The University has a greater than 75:25 gender underrepresented in the following subject disciplines:

In favour of men	In favour of women
Engineering	Nursing
Computing Science	Initial Teacher Training

Table 1: Subject Disciplines with Gender Under-Representation

With the exception of Teacher Training, all other disciplines are embedded within Schools which have achieved the Athena SWAN Bronze award, and therefore have considered data in relation to student recruitment, their outreach activities and how to support career progression. Examples of actions embedded within the Athena SWAN action plans are:

- Nursing - An increase in male applicants to the Bachelor of Nursing by 25% by 2018/19.
- Psychology - Lead on the Psychology organisation of recruitment events aimed at the transition from secondary school and ensure a diverse mix of staff are involved. Encourage more males to consider a career in Psychology (UG Psychology currently 77% female).
- Veterinary Science - Establish a working group to engage with careers advisers in secondary schools across Scotland to encourage greater number of male student applications; unconscious bias training will be introduced with all those who conduct interviews as part of admissions processes.
- Engineering - Interview female UG, PGT, PhD and Summer School students from a selection of years to identify motivations for studying engineering. The aim is to understand motivations and barriers in applying for engineering to better direct recruitment activities. Utilise the Glasgow Science Festival to run an event on Family Day to extend outreach to the parents of prospective students, to break down stereotypes and barriers perpetuated at home that may influence young people's aspirations and disciplinary preferences.
- Computing Science - Ensure female role models present at school open days; work with secondary schools in Scotland to improve the quality of computing science teaching to attract students, which will preferentially impact on female students, to pursue computing and technological courses in further and higher education.

Initial discussions have started to consider the gender imbalance within teacher training; ideas discussed included expanding the routes into the teacher (from the internal Community Development degree and wider recognition of cognate courses), developing a 'middle years' teacher training route, and reframing education as an 'inspiring career' choice. Full details of the University's aims and ambitions will be detailed in the Gender Action Plan.

Human Resources continues to tackle our gender pay gap through the development of a Gender Pay Action Plan – this plan specifically considers the academic career path, and where women face barriers from within the system and proposes several positive action measures to support key points of the career chain.

6.5 Gaelic

The University established a Gaelic Language Plan in 2012 and is currently preparing to update that for the period 2017 to 2022, recognising the unique role that it can play in promoting the language and its use. The University offers degree programmes at undergraduate, postgraduate taught and postgraduate research levels embracing the three strands of language, literature, and history and culture and our next plan will continue to promote and develop these, including through the research efforts of staff. In addition, the University offers language classes at various levels for its own and the local community and continued recruitment to these, taking account of other local provision, will be a strong component of our next plan. Community engagement is a strength of the University and we will continue to support that, e.g. playing a significant role in and around the National Mòd to be held in the city in 2019.

6.6 Developing Policy Priorities for 2017-18

Graduate Attributes

The University has progressed towards effectively embedding Graduate Attributes within our general curricula reflecting skills development and employability.

We have made progress in:

- Raising awareness in the student body of the importance of skills development and reflection.
- Carefully designing learning experience and assessment structures reflecting Graduate Attributes at the same time as ensuring we retain the integrity of our academic courses

All our colleges have a Graduate Attributes Champion who is an academic member of staff. Their role is to enable courses to map and embed Graduate Attributes. They also proselytise Graduate Attributes more generally ensuring deep understanding of the ‘employability’ relevance of the academic curriculum to all university stakeholders.

Employer Engagement

In collaboration with academic staff in subject areas, Careers Managers host employers to deliver coaching for highly competitive recruitment rounds. For example, in Computing Science we host CV Clinics for Level 3 Software Engineering and Computing Science Students led by JP Morgan, Morgan Stanley, and SAS. In Earth Sciences, Atkins host Mock Interviews for students; Baillie Gifford skills session on Business acumen for Geography 4th year.

Deans of Learning and Teaching, in partnership with Schools and professional staff, are increasing work-related learning within courses, exploring models of work-related learning (and work-related dissertations). The University is inviting employers to comment on new course proposals and course changes. In addition, employability initiatives are increasingly engaging employers in guest speaker sessions, sponsored events and alumni talks.

Graduate Destinations

In partnership with academic staff, Careers Managers target subject areas with lower than average positive Destination of Leavers in Higher Education (DLHE) outcomes to: raise awareness of range of careers options possible; provide coaching in communication and team working skills. Targeting begins at 2nd year.

Student Enterprise has integrated within Careers Service to promote, encourage and stimulate entrepreneurial and intrapreneurial mind-sets, **to** increase numbers of students participating in enterprise activities and graduates engaging in business start-up.

Placements

Internships Opportunities with the University's Internship Hub have grown from approximately 10 in 2000/01 to 400 in 2015/16. In 2015/16 we have added 'end to end' support for our students including successful applications seminars, 'peer to peer' and 'on-boarding support'
We would aim to increase the number of internships by 10% in areas with current shortages such as Life Sciences and Engineering.

6.7 SFC National Aspirations for Widening Access

Engagement of target applicants

To engage with this diverse body of applicants, we facilitate a portfolio of outreach pre-entry programmes, individually and in collaboration. Partners include: 14 Local Authorities (LAs); 101 secondary schools; FOCUS West (SHEP) (UofG has hosted since 2013); SWAP West; other HEIs and FE Colleges; third sector partners, e.g. the Robertson Trust, ICAS, Carers Trust, Who Cares? Scotland; MCR Pathways.

To be fit for purpose, we believe any widening access programme should fulfil three main functions for under-represented groups:

- 1) Promote aspiration for and awareness of routes to HE study.
- 2) By academic engagement, enhance pre-entry attainment and prepare applicants for the transition to HE, retention and degree completion, and a successful student experience.
- 3) Provide an access route for applicants to gain entry via Admissions progression agreements.

We combine funding from different sources, including: UofG core; SFC national programme; LAs; and other partners, to create an economically efficient model of engagement to cover the west of Scotland and beyond. The philosophy behind our approach is to facilitate programmes which can engage every target institution, group and learner. We operate innovative and efficient delivery models, utilising a body of 80 professional WP Tutors and combining online, in-person and blended learning options, to reach anyone who may harbour aspirations to enter HE, whether in inner-city or remote and rural areas.

Our Top-Up and Summer School Programmes were highlighted as examples of best practice for the sector in the CoWA Final Report. Our main WP / Access programmes are shown in Table 2:

Programme	Target Group	Annual Participants	Impact on HE entry	Subjects accessed
Top-Up Programme (SFC national and LA-funded)	S5/S6 pupils in 58 low progression schools	1,800	1,200 applicants to HE across Scotland; 200 entrants to UofG	Arts, Social Sciences, Sciences, Engineering, Accounting & Finance, Psychology, Nursing, Business, Education
Summer School (UofG core and LA-funded)	S5/S6 pupils; mature learners	350	300 entrants to HE; 250 to UofG; 50 elsewhere	Arts, Social Sciences, Sciences, Engineering, Accounting & Finance, Psychology, Nursing, Business, Education
Reach (SFC national and UofG core-funded)	S4-S6 pupils in 99 low progression schools	1,700	200 entrants to professional degrees: 100 in UofG; 100 elsewhere	Dentistry, Law, Medicine, Veterinary Medicine ** UofG recruited 16 additional Medicine entrants against 10 additional places in 2016.
Access to a Career (UofG core-funded)	S4-S6 pupils in 95 low progression schools	1,500	2017 will be first year of impact	Accounting & Finance, Education, Engineering
Early Secondary Programme (UofG core-funded)	S1-S3 pupils in 40 low progression schools	8,000	N/A	All subject areas covered
UofG Open Studies Programme (including Access) (UofG core-funded)	Adult returner learners	5,000 (including 250 Access)	Lifelong learning; 80-100 UofG Access entrants; 50 Access entrants elsewhere	Science, Engineering & Nursing; Law, Business & Accountancy; Arts & Social Sciences
Scottish Wider Access Programme (SFC national and UofG core-funded)	Adult returner learners	900	100 UofG entrants	Medicine, Dentistry, Veterinary Medicine, Law, Accounting & Finance, Psychology, Nursing, Business, Education, Arts, Social Sciences, Sciences, Engineering

Table 2: UofG pre-entry programmes for school leavers and/or adult returners

6.8 Contextualised Admissions and Care Experienced Leavers

Our outreach programmes are supported by a progressive admissions policy. We have used contextualised admissions linked to our outreach programmes and care experienced leavers for many years. Thus, we already operate a transparent and robust WP and care experienced admissions policy, utilising an 'access threshold' based on contextualised admissions, as outlined in recommendations 11 and 12 of the CoWA Final Report. Indeed, our WP Admissions Policy was highlighted as an example of best practice for the sector by the CoWA Final Report.

By this system, we make adjusted access offers of entry to every subject area within UofG, for school leavers and adult learners. Care leavers offers are accompanied with an invite to free participation in the UofG summer school. Moreover, our programmes are multi-exit and run specifically to bring entrants into HE as a whole, not just UofG. WP applicants enter HEIs across Scotland each year via our programmes, widening access for the whole sector – a major contribution to national SFC and Scottish Government Widening Access targets. We shall continue to evolve our WP and Access initiatives to move towards our entrant targets outlined in the annex.

The University will continue to liaise with 'Who Cares? Scotland' regarding our care experienced learner provision and work with other partners as appropriate to ensure we reach these particularly vulnerable applicants, e.g. LA social work and through-care teams; MCR Pathways Programme.

6.9 Widening Access and Retention Fund

Widening access has no purpose if entrants are not retained and progress efficiently throughout their studies. We have in place and are continuing to evolve on course provision for WP students. This is spearheaded by a Transitions Working Group, chaired by an Assistant Vice-Principal, and a Retention Sub-Group, which carry on a strong body of work conducted over the past twelve years into retention within UofG. Our student records system combines admissions and student support data to enable tracking and monitoring of flagged WP students from pre-entry to graduation. This process was highlighted as an example of best practice for the sector by the CoWA Interim Report. It allows at risk students to be monitored and intervention targeted at relevant points in the academic year. This is an evolving area, but established and new innovative practice has already impacted positively on our WP cohort: targeted financial aid via Talent Scholarships (over 500 awarded to date) and preferential access to discretionary funding; our Local Student Orientation event attracts 550 local WP entrants each year in early September; e-mails are sent at pressure points during Years 1 and 2, offering advice and reminders of where to seek support; offers of employment as pre-entry programme mentors are made. We shall continue to learn from these and other initiatives to develop retention provision and move towards the targets outlined in the annex.

We do not currently receive funding via the WERF, despite maintaining a high level of annual entrants from MD20 areas comparable to the sector, but shall maintain this commitment nonetheless.

7 Targets

University of Glasgow summary of baselines, milestones and targets

(* denotes priority measure)

	2013-14 actual	2014-15 baseline	2015-16 actual	2016-17 estimate	2017-18 milestone	2018-19 milestone	2019-20 aspiration	
Priority 1: Widening access								
Measure 2: Deprivation – The number of Scotland-domiciled undergraduate entrants from the 20% and 40% most deprived postcodes								
Total number of SDUEs with known postcode	3,016	2751			3000	3200	3400	*
2a: SDUEs from 20% most deprived postcodes	438	382			405	432	459	*
2a: Proportion of SDUEs from 20% most deprived postcodes	14.5%	13.9%			13.5%	13.5%	13.5%	*
2b: SDUEs from 40% most deprived postcodes	828	773			825	880	935	
2b: Proportion of SDUEs from 40% most deprived postcodes	27.5%	28.1%			27.5%	27.5%	27.5%	
Measure 4: Protected Characteristics - The number and proportion of Scotland-domiciled undergraduate entrants by different protected characteristic groups and care leavers								
Number - Care Leaver	18	14			14	14	14	*
Proportion - Care Leaver	0.6%	0.5%			0.5%	0.5%	0.5%	*
Measure 5: Retention by Protected Characteristics - The number and proportion of full-time first year Scotland-domiciled entrants from different characteristic groups returning to study in year two								
MD20 full-time first year SDUE	352	401			405	432	459	*
MD20 full-time first year SDUE Retained	320	351			356	382	409	*
Proportion MD20 retained	90.9%	87.5%			88.0%	88.5%	89.0%	*
Priority 2: High quality learning and teaching								
Measure 6: Retention - The number and proportion of full-time first year Scotland-domiciled undergraduate entrants returning to study in year two								
Proportion retained		94.4%			94.6%	94.8%	95.0%	
Measure 7: Satisfaction - The difference (+/-) from the individual institution's benchmark figure for students satisfied with the overall quality of their course of study in the National Student Survey								
% Satisfaction	91.0%	90.0%			91.0%	91.0%	91.0%	*
Measure 9a: Graduate Destinations - The number and proportion of Scotland-domiciled graduates entering positive destinations								
Proportion of graduates in positive destinations	92.9%	94.9%			94.0%	94.0%	94.0%	
Priority 3: World-leading research **								
Measure 10: The number of research postgraduate students								
PGR students	2049	2136			TBC	TBC	TBC	
Measure 12: Total research income from all sources								
Research Income (£M)	133.6	173.0			TBC	TBC	TBC	

** We have our own KPIs for World Leading Research – our targets for 2020 are for 1.9 PGRs per Academic FTE and to be in the top 5 in the Russell Group for Research Income.

8 Case Study 1 - Academic Returners Research Support Scheme

As part of the University's commitment to improving gender equality, and specifically growing the number of women in senior academic roles, the University approved a process of supporting academic returners to maintain a successful research career. The Academic Returners Research Support Scheme was endorsed, in principle, by SMG in December 2014 with an agreed policy formally rolled-out by Colleges between May and June 2015. Since its launch, the scheme has funded approximately £180k to 23 individuals. The aim of this funding is, primarily, to support female academics returning from maternity leave, however partners are eligible if they have been on extended Shared Parental Leave of 4 months or more.

Amongst other things, applicants have proposed to use the funds to support teaching buy-out and/or research assistance to provide time for a combination of intense research activities including, the completion of a monograph: book chapters; scaling up of project bids; travel to work with potential co-PIs; dissemination of work and chairing of panels at international conferences; maximising outputs from large-scale grant-funded projects (which would have lost momentum during the period of maternity leave).

The nature of the activities that funding has been sought for mean that it is too early to measure impact from it in terms of publications etc. The scheme is designed to help those who have taken an extended period of maternity, adoption or shared parental leave to resume a high level of impactful research activity more quickly than they would if they returned to a full teaching load after such a period of absence from their research and their field of study

9 Case Study 2 - Widening Participation: Access to Professional Degrees

Widening access to professional degrees is particularly difficult because of the high demand for very few places, the high tariffs required and the complex, additional admission requirements (aptitude tests, work experience, interview). However, entry to a professional degree and subsequent progression to employment in that field is a truly life-changing pathway, enabling real social mobility for applicants from disadvantaged backgrounds. The University of Glasgow (UofG) is unique in Scotland in offering adjusted offers of entry to every professional degree taught within the institution for both school leavers and adult returners to HE. We do this via a twin approach of outreach programmes, with built-in admissions progression agreements:

- School leavers: Reach Scotland (Dentistry, Law, Medicine, Veterinary Medicine; Access to a Career in Accounting & Finance, Education and Engineering)
- Adult learners: Scottish Wider Access Programme (SWAP) – Access to Medical Studies and Access to Law, Business and Accounting & Finance; UofG Centre for Open Studies – Access to Law, Business and Accounting.

The Access courses each provide a niche route for several adult returner entrants each year, who otherwise would have had no way to access these high demand professional courses.

Reach West Programme

School leaver WP entrants to professional degree courses were minimal, prior to the creation of the Reach West Programme in 2010. Jointly created and facilitated between the UofG WP team and professional academic Schools, Reach West works annually with 1,700 S4-S6 pupils in 99 secondary schools across 14 Local Authorities. Delivery across such a diverse area, required an innovative and original delivery model. A system of working with LA school clusters was devised, bringing pupils to one location for in-school sessions, and utilising distance and blended learning approaches, via virtual classroom technology, to engage with remote areas such as Islay or the Western Isles. Delivery on a budget of only £150,000 per annum (SFC national and UofG core) is very efficient at only £67 per pupil.

Programme content

The underlying aim of Reach is to identify and address the multi-layered barriers to accessing professional subjects experienced by WP applicants, bridging the gap and equalising their opportunity of entry with applicants from more affluent areas. Pupils complete a three-year programme of in-school and on-campus sessions. Focussing on their subject of choice, Reach introduces pupils to the idea of studying for and working in that profession. In S5, pupils complete a case study and attend a week-long Summer School on the UofG campus. S6 provision concentrates on UCAS application via interview preparation, personal statement and aptitude test workshops. Pupil performance is graded and a Student Profile collated for use by Admissions. Work experience placements are found for applicants unable to source this personally.

Contextualised Admissions agreements

From 2012, an integrated Reach admissions progression agreement was set up, applying contextualised admissions by participation on the Reach Programme. Significantly, the progression agreement allows Medicine and Dentistry Admissions to adjust not only academic grades, but also the UKCAT¹. The latter has proved to be the biggest barrier to widening access; adjusting this has enabled more applicants to progress to interview, where they have performed well, gaining entry.

Working with schools in clusters fosters peer network-building among pupils, who are most often the sole applicants to a professional degree in their school. This encourages retention on Reach, but also on degree course. Friendships forged last into university, overcoming social barriers often present for WP applicants. The results of the Reach West Programme are evident from examining entrants from the 90+ west of Scotland target schools and from MD40 postcode areas: the KPIs for the programme. Tables 1 and 2 show five-year comparator entrant figures before and after Reach impacted on admissions. Increases have occurred in entrants to all four target subjects within UofG by both KPIs, a very high performance standard. MD40 entrant increases were: 7.5% in Dentistry; 3.8% in Law; 6.8% in Medicine and 1.7% in Vet Medicine. West of Scotland target school increases were: 11.2% in Dentistry; 12.6% in Medicine; 4.8% in Law; and 0.7% in Vet Medicine.

Table 1: MD40 entrants to UofG 2007-11 and 2012-16 as % of overall young student intake

	2007-11 entrants	2012-16 entrants
Dentistry	11.8%	19.3%
Law	11.3%	15.1%
Medicine	11.3%	18.1%
Veterinary Medicine	10.4%	12.1%

Table 2: Reach West 90+ target school entrants to UofG 2007-11 and 2012-16 as % of overall young student intake

	2007-11 entrants	2012-16 entrants
Dentistry	15.7%	26.9%
Law	12.4%	17.2%
Medicine	14.6%	27.2%
Veterinary Medicine	15.1%	15.8%

Additional Places for studying Medicine for 2016 entry

The Scottish Government (SG) created 50 additional places for Medicine entry for 2016 entry, awarding 10 places to each Medical School. UoG embraced this initiative and recruited an additional 16 students, all from MD20/40 postcode areas, target Reach West schools or with experience in care. This strong performance has added further depth to our Medical School WP provision. We shall work in partnership with SFC and SG to maintain and increase this level of intake in the future.

Testimonials

Reach West has had a profound impact on the diversity of the student bodies within these high demand professional degree subjects and has brought lasting benefit to both the University and the students involved. The impact on target schools is evident in feedback received:

‘For the first time in living memory, a pupil has progressed from our school to Vet Medicine’ (Contact teacher.)

‘The Reach Programme has helped prepare our young people for the transition to HE, especially with the preparation for interview and the UKCAT/LNAT tests. The staff on the programme are helpful, informative and knowledgeable on their subject’. (Local Authority Education Officer.)

¹United Kingdom Clinical Aptitude Test – used for Admissions to Medicine and Dentist

10 Case Study 3 - Innovation

Stratified Medicine Scotland Innovation Centre (SMS-IC)

The £1bn Queen Elizabeth University Hospital (QEUH), opened in 2015, is now the largest hospital campus in Europe. It covers 52% of the Scottish population, and is located in an area of high chronic disease/co-morbidity and deprivation. As such it provides a significant opportunity to drive innovation in healthcare, to benefit patients and stimulate growth in the local and Scottish economy.

With investment from SFC in the Stratified Medicine Scotland Innovation Centre (SMS-IC), the QEUH has become the Scotland-wide focal point for precision medicine, an emerging approach which enables doctors and researchers to identify and develop treatments that are effective for specific groups of patients. Precision medicine will have a disruptive effect on future healthcare, with significant impact for the NHS, the pharmaceutical industry and the medical technologies supply chain.

To add value to Scotland's investment in SMS-IC and the QEUH, the University of Glasgow has partnered with NHS Greater Glasgow & Clyde to develop world-leading infrastructure for precision medicine within the hospital campus, including a Clinical Innovation Zone with 22,000 sq ft for industry to drive open innovation. The Precision Medicine Catapult Centre of Excellence is now located adjacent to SMS-IC, alongside Aridhia, and companies from Singapore, Germany and the US are in the process of locating there too. In March 2017, the University will open the Imaging Centre of Excellence (ICE), incorporating Scotland's first 7 Tesla MRI scanner, and one of the first in the world for clinical research use. Leveraging funding from Glasgow City Region City Deal, this ultra-high resolution scanner which will be used for precision medicine research into stroke, dementia and neuro-oncology, and the advanced technology is also attracting overseas industry to re-locate as opportunity for further technology development. This will bring skills to Scotland which are currently unavailable, dovetailing with our award-winning, SFC-funded Masters provision in stratified medicine, which also seeks to address a growing industry need for skills in precision medicine.

This 'triple helix' of academic research, industry and the NHS is essential to achieve our vision of becoming a global centre of excellence for precision medicine, attracting international business investment and driving an early competitive advantage to deliver economic benefit for Scotland and the UK. We were recognised by BBSRC as top University for 'Excellence with Impact' in 2016, and the combined economic impact of the University's innovation at the QEUH has been estimated to create up to 800 jobs and over £100m GVA for the Scottish economy over the next 7 years.

Accelerating Scotland's industrial innovation in imaging

QuantIC, the UK Quantum Technology Hub in Quantum Enhanced Imaging is located at the University of Glasgow. It is stimulating the creation of a Scottish Photonics sector through its strategy of strong industrial collaboration and partnership resource funding to commercialise new imaging technologies.

An example where this is already delivering impact is the Hub's partnership with Scottish based company M Squared Lasers, a fast growth, multi-award winning business with offices in the UK, Europe, and the USA. The company has specialists in quantum technology, biophotonics, and chemical sensing, and from its headquarters in Glasgow, the company develops advanced laser platforms.

Collaboration between QuantIC and M Squared Lasers has resulted in two jointly funded projects concerning the development of a low-cost, small-sized, low-power and highly portable remote gas detection system. The joint academic-industrial team will exhibit their prototype system at Photonics West 2017 in San Francisco, the world's leading optical systems conference.

Dr Graeme Malcolm, CEO and Co-Founder of M Squared Lasers said: "Close collaboration with QuantIC has helped M Squared to identify and create lower cost, compact, greatly improved imaging solutions that are suitable for a range of industries. Take the global gas sensing market for example, which is projected to be worth \$2.32 billion by 2018. We identified a gap in the market for a low-cost, low-power and highly-portable remote gas detection system, so we're working with researchers at QuantIC to turn our combined technologies into a new product capable of detecting gas leaks."