



**Heriot-Watt University  
SFC Outcome Agreement 2019/20–  
2021/22**

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# Delivering KEY OUTCOMES in Scotland



## Wider Access Entrants

The number of entrants from SIMD20\* has **increased by 70%** since 2011/12, with plans to grow to **over 200 entrants** per year by 2021/22



At the same time, we have been working to ensure retention of wider access entrants is maintained at similar high levels to our other entrants from Scotland



\* SIMD20 – the most disadvantaged areas identified in the Scottish Index of Multiple Deprivation

## Articulation with Scottish Colleges

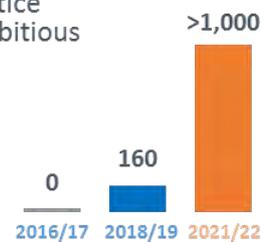
The number of students progressing from Colleges directly to Years 2 or 3 **with full credit** for their College qualification has **tripled** since 2011, and is planned to **reach 240** by 2021\*



\* Includes Associate Students progressing from Partner Colleges

## Graduate Apprentices

Heriot-Watt has one of the largest programmes among Scottish universities of new work-based Graduate Apprentice degrees, with ambitious plans for further rapid growth



## Research Income

Research income has grown by a third since 2011, with ambitious plans for rapid future growth from involvement in **UK industrial strategy** and **global grand challenges**



## Internationalising Student Experience

In 2018, 250 students from our Scottish campuses studied abroad via **Erasmus** and Heriot-Watt's **Go Global** programme of transfers among our Scottish, Dubai and Malaysia campuses, which is expected to at least **double by 2022**

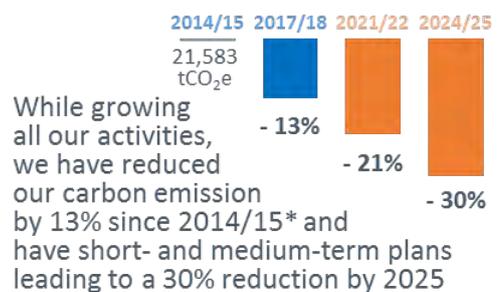


## Knowledge Exchange with Business

Heriot-Watt is a leading player in Knowledge Transfer Partnerships (KTPs) – collaborative projects to implement significant technology and business innovation with partner companies – with **15 active KTPs** in 2018/19 for a value of £3.5m. Five of these are with **Scottish SMEs**.



## Carbon Footprint Reduction



\* agreed base-line year for national emissions monitoring

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## STATEMENT BY THE PRINCIPAL AND VICE-CHANCELLOR

I am pleased to confirm Heriot-Watt University's commitment to this Outcome Agreement between the University and the Scottish Funding Council (SFC) on behalf of the Scottish Government. Our Agreement embodies our response to the Government's call for "intensification" of the Outcome Agreement process, which refers to an increased focus on setting and achieving ambitious targets in particular in relation to widening participation in higher education. I am confident that in our Agreement we set out appropriately ambitious targets coupled with a strong intent and practical plans to deliver significant outcomes. Heriot-Watt's track record in relation to Outcome Agreement objectives bears this out. We continue to build on these achievements and deliver on our commitments. However, it is increasingly difficult to contemplate how the ambition of escalated targets for Scotland is supported by the reality of reducing public funding for universities in Scotland. Continuing real-terms funding reductions are at increasing risk of eroding our capacity to deliver fully for Scotland's success.

Heriot-Watt is an established university operating in Scottish and UK frameworks and looking to the future as a global institution. In addition to our three campuses in Scotland – Edinburgh, Scottish Borders and Orkney – we operate at campuses in Dubai and Malaysia and through our international partners and on-line learning we have substantial numbers of students on every continent of the globe. We remain proud of our strong heritage as a Scottish institution of quality and ambition and are very clearly aware of the funding and support we receive in Scotland. We strive to sustain and enhance the contributions we make to society and the economy in Scotland, in particular to the overriding priority of economic development and growth.

These are the themes of this Agreement – the progress we have already made in opening up access to the high quality professional education we provide, together with our commitment to further advance participation; and the vital contribution our world-leading research makes to innovation and productivity in the economy, coupled with our commitment to enhance and increase the economic impact of our outputs in skills, research and enterprise.

Heriot-Watt University delivers these significant outcomes as a powerful institution in its own right while also recognising the part we play in the complex eco-systems of education, research and innovation nationally and internationally, and seeking to maximise our impact by developing our distinctiveness and playing to our strengths. It is a challenging, changing and in many ways uncertain environment but I believe that Heriot-Watt continues to adapt successfully in order to deliver our new *Strategy 2025, Shaping Tomorrow Together*. This reaffirms our Vision and Mission – to be world-leading in all our areas of specialism, and to create knowledge that benefits society – and sets out our ethos, values-led approach and ambitions for the next period around four themes that align well with the priorities of SFC and the Scottish Government:

**Building Flourishing Communities** – our ambitions for growth of the vibrant, diverse and inclusive community of Heriot-Watt staff, students and alumni, with emphasis on the engagement of the University with the wider community in all our localities, and our commitment to maximise contributions to sustainable and inclusive economic and social development and positive environmental impact;

**Pioneering in Education** – our commitment to continuing innovation, excellence and relevance in learning, teaching and the student experience, with emphasis on increased flexibility, international mobility, work-related and professional skills, all in the context of a digital world and increasing digital delivery;

**Excelling in Research and Enterprise** – our ambitions for major expansion in research capacity and reputation by leveraging our strengths in fundamental research with interdisciplinary approaches, strategic partnerships and focus on key business and industry sectors; coupled with fostering and enabling the culture and eco-system of dynamic enterprise among staff, students and partners;

**A Global, Connected University** – our intent to enhance the effectiveness and efficiency of our organisation through increased collaboration and connectedness, internally and externally.

This Outcome Agreement is focused on the University's activities in Scotland. I hope it helps illuminate the distinctive contributions Heriot-Watt University makes to the economy and society, and the real benefits we offer to students, businesses and the many other partners we work with – in Scotland and beyond. As we navigate through a challenging environment and take forward our renewed strategy for the period to 2025, I am determined we should seek to increase and enhance our engagement and impact still further.

Professor Richard A Williams, OBE, FREng, FTSE, FRSE  
Principal and Vice-Chancellor

March 2019

## **Consultation**

The major university forum consulted on and engaged with the development of this Outcome Agreement is the University Committee for Learning and Teaching, which is a key committee with responsibilities to both the Senate and the University Executive. It is chaired by the Deputy Principal for Learning & Teaching, who engages directly in the Outcome Agreement negotiation with SFC officers, and comprises the Directors of Learning and Teaching of the academic Schools, Deans of the University, members appointed from the elected academic membership of Senate, representatives of the relevant Professional Services, and student members who are elected officers of the Students Union including the President of the Union. The Deputy Principals for Research & Innovation, Enterprise & Business, and External Relations, together with further Professional Services, are also closely involved in relevant sections. In addition to substantive discussion and formal approval of the draft Agreement by both the University Executive and the Court, the document is provided for information to the Combined Joint Negotiating and Consultative Committee, which comprises representatives of all the

recognised staff unions. The Equality Impact Assessment of our Outcome Agreement 2019/20-2021/22 is appended.

## Priority 1: WIDENING ACCESS

**General:** Heriot-Watt is a university which is committed to rigorous selection of students on competitive merit, and is by history and ethos averse to social exclusivity and every other form of discrimination. For a university of our type, and with a recruitment catchment for Scottish students mainly in the southeast of the country, we have already made good progress towards a student profile that is socially inclusive. In particular, over the period 2012-2016 the University achieved step changes – “intensified” its performance – in terms of entrants from SIMD20/40 (the 20% and 40% most disadvantaged neighbourhoods in Scotland as identified by the Scottish Index of Multiple Deprivation) and also in entrants articulating with full credit for Higher National qualifications achieved at Colleges in Scotland.

Our Strategy 2025 re-affirms our commitment to inclusion and wider access. Building on our experience and track record, we will seek over the next three years and beyond to achieve further progress in all aspects of widening access, recognising the long-term aspiration voiced by the First Minister for fully “equal access” and the targets and milestones identified in the report of the Scottish Commission on Widening Access. Our next steps are expected to come through steady sustained progress rather than further step changes. Our principal strategies will continue to be:

- **effective outreach** – to target schools, colleges and communities, to increase aspiration and motivation to access Higher Education, and help applicants make informed choices and support them through the transition to university; this includes significant collaboration with other institutions, which is only likely to increase, as is focus on and relationship-building with those schools and colleges where there is most synergy and mutual benefit;
- **best practice in admissions** – including *contextual admission*, recognising nuances in the achievement of formal qualifications in disadvantaged as compared with relatively advantaged circumstances, and other indicators of potential to excel on an individual basis; implementation in 2019 of *access thresholds*, a clear declaration of ambitiously set minimum entry requirements which provide a *guaranteed offer* of a place to SIMD20 and care-experienced applicants; use of *clearer and more consistent language* in guidance explaining issues around access and admissions including progression from college from university
- **“smart” target-setting** – to help ensure that all opportunities for increased access are taken and that all parts of the academic portfolio play their role;
- **appropriate support for applicants and entrants in target groups** – including expert advice and counselling services, preparatory and bridging activities where required such as summer schools and enhanced induction and mentoring, and practical financial help through targeted bursaries and scholarships, both University-funded and externally financed, including valuable support from the Robertson Trust.

Our strategic commitment is represented by the approval of this Outcome Agreement by the University Court and Executive, following discussion and debate that embeds access as a core issue in the University’s academic planning. Overarching the specific areas of focus on students from Scotland discussed below in response to SFC priorities, Heriot-Watt seeks to be alert and responsive to all aspects of widening access, promoting equality and diversity across its UK and international student body.

**SIMD20/40:** In agreeing specific targets for further increases in access in coming years, we have flagged up to SFC through Outcome Agreement discussions some key planning assumptions, relating in general to the medium-term funding environment and more specifically to additional places becoming available within the overall quota regulated by SFC, to allow for increased access without “displacement” of other well-qualified Scottish students, which we think would be very damaging. In our scenario, the number of places assumed to become available to us over coming years for additional Scottish Domiciled Undergraduate Entrants (SDUE) is at minimum in the range 100-150. This would enable the University to plan a sustained increase in SIMD20 recruitment by at least one percentage point per year on average (10-15 additional SIMD20 entrants per year), increasing SIMD20 towards 15% of SDUE by 2021/22, and thereby increasing SIMD40 towards 30% at the same time. (The other main use of these places would be for increased articulation with Colleges, as discussed below, partly overlapping with increased SIMD20/40 recruitment.) Indicative year on year figures are shown separately in SFC’s pro forma summary of “Actual and Ambition” (target) numbers, with the significant effect of the targets being apparent in a 5-year perspective:

Entrants from:	<u>2011/12</u>	<u>2017/18</u>	<u>2021/22</u>
<b>SIMD20</b>	~90	153	>200 (~15% of SDUE)
<b>SIMD40</b> (incl MD20)	<200	340	~400 (~30% of SDUE)

The benefit gained and the leverage exercised by the University on the (80) additional funded places per year awarded by SFC for increased SIMD20/40 recruitment post-2012 is evident. The targeted growth of intakes from SIMD20 is consistent with the re-allocation of these additional places solely to SIMD20 intakes as required by SFC since 2016.

**SHEP Schools:** The “Schools for Higher Education Programme” identifies around 80 secondary schools in Scotland with significantly lower than average rates of progression to HE. To avoid multiple overlapping or conflicting targets, we do not currently set specific target numbers for recruitment from these schools, but we identify a number of them as priorities for outreach – including in our vicinity Wester Hailes Education Centre, Forrester and Tynecastle High Schools – and exercise contextual admissions to the benefit of applicants from them. In the SFC pro forma referred to above, we include forecasts for a (continuing) rise in numbers from SHEP schools as a factor in the targeted increase in SIMD20 numbers and foresee relations with particular provider schools in our region becoming strengthened.

**Articulation with Scottish Colleges:** Reflecting our technical and professional profile, Heriot-Watt continues to have strong demand from HN-qualified students and strong interest among Colleges in developing articulation, progression and other collaborative opportunities. Over recent years we have more than doubled fully-articulating entrant numbers from Colleges, with further progress in the 2018 intake, and now seek to steadily increase this very positive flow towards 200 over the next 3-5 years. (These numbers are additional to the 60 Associate Student places per year awarded by SFC post-2012 for

enhanced articulation arrangements with partner colleges, which would further boost articulating entrant numbers to over 250 students or ~20% of SDUE).

Articulating entrants from Colleges:	<u>2011/12</u> 60	<u>2017/18</u> 124	<u>2021/22</u> >170 (>13% of SDUE)
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Our provision is aligned with the Scottish Credit and Qualifications Framework (SCQF) and in our admissions processes we seek to promote maximum recognition for credit previously attained where this is the applicant's wish and in their best interest. On this basis, much of the targeted growth should come from fuller articulation where students are currently progressing with only partial credit for HNs, and some from new articulation arrangements. We set this target in the context of a more systematic and coherent development of relations with Colleges in our region – Fife, Forth Valley, West Lothian, Edinburgh and Borders – including new possibilities for collaborative working offered by the Skills strands of the Edinburgh and Southeast Scotland City Region Deal, with a strong emphasis on STEM, awareness of regional skills plans, and potential for closer co-operative engagement also with schools and employers around these agenda. There is significant and increasing overlap and synergy between this target and that for increased SIMD-measured access.

**Graduate Apprentices:** Since 2017, our Scottish student population has been further diversified, and access further widened, by significant numbers of work-based students on new Graduate Apprentice programmes, currently supported by SDS outside SFC-reported numbers (more under Priority 2 below).

**Care experience students, and other protected characteristic groups:** Applicant and entrant numbers identified as care-experienced although still modest are increasing and are recognised as particularly deserving of individual attention and support in the recruitment, application and admission process and in their experience as students. Heriot-Watt delivers this tailored support effectively and is strongly committed to continue to do so. Particular attention is currently being given to overcoming perceived obstacles and possible stigma associated with disclosing “care experience” so that applicants and students can benefit from support, and to educating staff and students on the different backgrounds and types of care experience. The University introduced a corporate parenting plan<sup>1</sup> in June 2018. Progress against the plan will be reviewed in the spring of 2019. Heriot-Watt continues to chair, and be an active member of, CEECEF (the Care Experienced, Estranged, and Carers East Forum) and provides funding and support to the Hub for SUCCESS (Support for University and College for Care Experienced in South-East Scotland). Our Student Wellbeing and Student Recruitment teams provide day-to-day support for care experienced students at all stages of their University journey. Additional support is provided as necessary through mainstream services. Webpages have been developed to ensure open access to our information<sup>2</sup>. The University plans to invite Who Cares? Scotland to lead a training session in the first half of 2019 with senior academic and professional service managers responsible for student recruitment, admission and the student experience.

We are also proactive in support for Student Carers<sup>3</sup>.

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<sup>1</sup> Corporate Parenting Plan: <https://www.hw.ac.uk/documents/corporate-parenting-plan.pdf>

<sup>2</sup> Care Leavers: [www.hw.ac.uk/uk/student-support/care-leavers.htm](http://www.hw.ac.uk/uk/student-support/care-leavers.htm)

<sup>3</sup> Student Carers: [www.hw.ac.uk/services/img/StudentCarers.pdf](http://www.hw.ac.uk/services/img/StudentCarers.pdf)

**Disability:** We believe Heriot-Watt has a good record in facilitating study by disabled students in general, evidenced by the figures in the SFC pro forma referred to earlier, including where required investment in accessible laboratory facilities, and intend this to continue. In particular Heriot-Watt has developed in recent years as a centre of excellence in education and research in British Sign Language, and we seek to demonstrate this expertise in inclusive institutional practice. Our British Sign Language Local Plan is available at <https://www.hw.ac.uk/services/equality-diversity/bsl-local-plan.htm>.

**BME students:** We believe the data show participation by students identifying as Black and Minority Ethnic are relatively strong for Heriot-Watt in the Scottish context.

**Mature students:** We recognise that mature students (21 or more years of age on entry) are relatively under-represented at HWU. We forecast this will gradually improve as a factor of the targeted increase in numbers articulating from Colleges, as shown in Annex 1.

**Veterans:** The University signed up to the Armed Forces Covenant in November 2018<sup>4</sup>.

**Estranged Students:** At present, we do not capture data to record students identifying as “estranged” but will investigate this for the future.

**Applications and Admissions Monitoring:** In accord with Recommendation 5 of the Commission on Widening Access, we monitor application, offer and acceptance rates – as well as entrant numbers – for applicants from SIMD20 and care-experience, to help ensure they are not disadvantaged in the admissions process. Annex 1 provides application, acceptance, and enrolment figures for applicants from these backgrounds for the past two years.

**Retention/Progression** of students from widening access backgrounds and other groups is covered under Priority 2 below.

**Gender balance:** The University is well aware of some gender imbalance in its student population, currently 60/40 M/F, much more pronounced in some subjects, and showing little sign of positive change in recent years. This of course reflects the predominance of STEM subjects in Heriot-Watt, with similar universities in the UK showing a comparable imbalance (eg Imperial, Loughborough). The issues of culture change are being fundamentally addressed through constructive engagement with the Athena SWAN process (see Priority 3) and Gender Action Plan (see Priority 5). Annex 2 shows the gender balance across the University’s subject areas, for undergraduate students, comparing Heriot-Watt with other UK HEIs. This shows Heriot-Watt typically within or around the inter-quartile range of male:female distribution for the majority of our subjects. Positive exceptions are Biology and Psychology where the minority male groups are relatively over-represented. However, negative exceptions are Computer Science where the minority female group is relatively under-represented and Languages where the minority male group is relatively under-represented. Considerable efforts are devoted to attracting and retaining more girls’ interest in STEM subjects through a range of outreach activities from the early secondary school, and before, including the longstanding “Dragonfly” engineering programme for girls in S2, a very popular new initiative in running workshops for coding and Apps building for school girls, joining the Women in Engineering Society, supporting female STEM ambassador roles, and many more. We recognise the need to target some additional effort on non-STEM subjects, notably Languages, and to

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<sup>4</sup> Armed Forces Covenant: <https://www.hw.ac.uk/about/news/internal/2018/heriot-watt-signs-up-to-the-armed-forces.htm>

seek to develop, either collaboratively or independently, similar outreach to promote language learning to boys and young men.

The gender balance in applications, offers and acceptances is closely monitored at the subject level throughout the student recruitment cycle and any anomalies suggesting bias would be closely interrogated.

## Priority 2: HIGH QUALITY LEARNING AND TEACHING

**General:** The “Pioneering in Education” theme in our Strategy 2025 provides a new framework for the University’s continuing commitment to excellence and innovation in learning, teaching and the student experience. This is supported by well-developed organisational themes, a set of key delivery projects and clear performance indicators, which map well to the metrics identified by SFC for this Priority, including significant targets for:

- **Positive Graduate Destinations** (excellent: >95% of 2016/17 graduates in employment or further study. In particular, we prioritise the Highly Skilled/Professional Employment indicator, which has averaged 80% of total employment over the last three years, significantly favourable to benchmark in aggregate and for all student demographics, and consistently in or around the upper decile of UK universities.)
- **Student Satisfaction as measured by NSS** (consistently good up to dip in 2017 and 2018, being addressed by urgent recovery plans in 2018/19)
- **Student Retention / Progression** (see below),

Our participation in the Teaching Excellence Framework (TEF) in 2017, resulted in “TEF Silver”, providing another demonstration and validation of our performance-oriented strategy. Increasingly, we seek to monitor our key indicators across relevant student demographics including wider access and protected characteristic groups, as well as across subjects, the UK and international campuses and at institutional level.

**Quality Report to SFC:** As per SFC guidance, this Outcome Agreement has been informed by the University’s Annual Institutional Report on Quality to the SFC. This updates on our progress towards the objectives of our Learning and Teaching Strategy and other current enhancement activities. In addition, it provides more information on the institution’s response to student surveys including NSS and to issues arising from other forms of annual monitoring and analysis.

**Student Retention/Progression:** Recent performance on the key metric of (Year 1-2) Retention/Progression of (UK) undergraduate entrants at the University’s campuses in Scotland is summarised below.

HWU Entrants in:	<b><u>2013</u></b>	<b><u>2014</u></b>	<b><u>2015</u></b>	<b>(provisional) <u>2016</u></b>	<b>(estimate) <u>2017</u></b>
<b>Aggregate</b>	<b>89.9%</b>	<b>90.4%</b>	<b>91.0%</b>	<b>90.9%</b>	<b>91%</b>
Scottish-domicile	91.5%	91.0%	89.5%	89.3%	89%
from SIMD20	87.5%	85.0%	85.7%	88.7%	87%
from SIMD40	89.8%	86.0%	87.0%	86.9%	86%
Age 21 and over	89.5%	85.5%	85.8%	89.0%	85%

This seems to suggest overall a slow trend of improvement in recent years, with a particularly welcome recovery from relatively adverse figures for 2014 and 2015 for wider access entrants in the ‘provisional’ year (progress of 2016 entrants into 2017/18), broadly maintained in the estimates for the latest year. Wider access entrant retention continues to converge with the overall average. Nevertheless, our continuing under-performance relative to our medium-term target level (93%), including more pronounced retention issues for increased numbers of SIMD20/40 wider access and mature students, remains a

major concern which is directly addressed in our learning and teaching strategy. To focus these efforts, a new Retention Strategy was developed and agreed in 2016 with a number of important early actions already proceeding (and perhaps showing effect in the above figures). These include:

- **Personal Tutoring system:** We have introduced a new Personal Tutoring system (previously academic mentoring) with enhanced guidance, training and support for academic staff undertaking the role and increased consistency of approach across the University. New arrangements are designed to ensure early student engagement with the personal tutor and then provide a minimum set schedule of meetings throughout the academic year.
- **“Thinking of Leaving” service:** This offers guidance and support to students considering leaving the University early. The visibility of the service and student uptake has been greatly increased. 80% of students consulting the service continue at Heriot-Watt.
- **New Student Induction:** A new model of Induction has been developed, drawing on sectoral and institutional best practice, to enhance student integration in the crucial first weeks, and to promote development of a range of student social networks.
- **Student Success Advisors:** Starting in autumn 2018, we have introduced this new role. The team of advisors are all recent Heriot-Watt graduates able to advise from their real knowledge of what it is like to be a student here, to speak from their personal experience, and have an overview of other support services that can also help. The advisors are easily approachable via direct 1-to-1 drop-in sessions or online.

Further developments will be enabled in 2019. Enhancements of our student records information systems will allow more detailed analysis and proactive intervention. Supplementing these approaches, which benefit all students, the Student Induction and Transition Office, established in 2013 to support the growth in wider access numbers, helps sign-post, tailor and personalise services to students from diverse backgrounds. We have also introduced a short Summer School immediately before Freshers Week, offered to entrants from SIMD20/40, SHEP schools, mature students from SWAP, College articulation students, care leavers, carers and others. The Summer School gives a headstart in developing new academic skills and provides an early opportunity for students to find out about available support and resources.

Leading indicators of student retention are monitored quarterly. Our Year 1 to Year 2 retention / progression target remains at least 93% in aggregate and for all student demographics including students from wider access backgrounds.

#### **Development of the curriculum for employment and the economy, focus on STEM:**

Professional relevance, effectiveness and readiness are key qualities of a Heriot-Watt education in all subjects. The majority of our degree programmes are accredited by the relevant professional bodies, and all subject areas and many individual programmes benefit from industry advisory boards which embed engagement between academics and employers deep in ongoing curriculum development. Many Heriot-Watt staff work with industry sector groupings important to Scotland, from Chemical Industries to Financial Services, and closer working in recent years with Colleges in Scotland has brought

increased awareness of and responsiveness to regional economic and skills issues, as formally articulated through the Skills Investment Plans. Development of digital skills is pervasive in STEM and non-STEM alike – for example popular “Power Hours” are offered on a drop-in basis throughout the year by Information Services, covering a range of digital and data skills from elementary to highly advanced – and new specialisms in Data Science are rapidly developing linked to the Data Driven Innovation theme of the City Region Deal.

Major new initiatives in enterprise education are currently being developed (see also Priority 4), one early example being a new MBA focused on entrepreneurship, which provides access to top business leaders, visits to companies, and allocates each student a personal business mentor to help prepare an expert peer-vetted investor-ready business plan. Launched in autumn 2017, the full-time programme runs 10 months in Edinburgh and includes 6 weeks in Dubai. The reciprocal Dubai-based programme including a period in Edinburgh started in autumn 2018.

STEM provision currently accounts for ~55% of our student numbers in Scotland at both undergraduate and taught postgraduate levels (and significantly more for research postgraduates). We expect to maintain this strong focus on STEM for the foreseeable future. A significant new initiative in STEM teacher education is progressing in collaboration with Stirling University, with support from Scottish Government and SFC. From 2016 we have offered two new joint degrees in Chemistry and Physics with Professional Education, integrating teaching of the STEM subjects at Heriot-Watt with teacher education at Stirling, and from 2017 the model extended to two further joint degrees with Professional Education – in Engineering and Technology for secondary school teaching, and in General Science for primary school teaching.

**Engagement with Scottish Government STEM Strategy:** The University contributed to the development of the strategy and continues to engage actively with its delivery. One example is the *RAiSE Programme, Raising Aspirations in STEM Education*, which looks to support enhanced coordination of STEM activities in schools. This is a national pilot programme, led by Education Scotland, to support improvements in primary science and STEM and is one of the initiatives coordinated through the Scottish Government STEM Strategy. Ten local authorities, including City of Edinburgh Council, are involved in the pilot. It is hoped that, following evaluation, this will be extended to all other authorities across Scotland. The RAiSE Programme intends to help pave the way for the implementation of the national strategy by effectively linking in with other programmes such as the Developing Scotland’s Young Workforce regional groups, science centres, science festival activities and so forth. Heriot Watt colleagues are discussing with representatives of the RAiSE project, including the programme coordinator, the ways in which the reach and scale of existing support to schools could be extended in partnership with the local authority. This provides the possibility of engaging with primary schools, a fundamental and imperative factor if we are to raise the awareness of STEM, and engaging school pupils at an age when they are particularly excited about the discoveries they can make in this area. Such engagement will not only impact on raising awareness but also support engagement between school teachers and the FE and HE sectors, as well as contributing to widening participation and promoting girls’ interest in STEM. Possibilities under consideration for increased Heriot-Watt involvement include on-campus training and support events for teachers, linked to our joint programme with Stirling University in Primary Education with STEM. In the current year Heriot-Watt is also taking forward promising discussions with *The Children’s University in Scotland* on engaging together on a STEM-focused initiative in our region.

**Work-related Learning:** Work-related learning through industry-relevant projects and case studies is genuinely pervasive and embedded throughout Heriot-Watt provision. There are also opportunities for high quality work placements and internships as part of programmes, and these opportunities are increasing in number and scale. The GRID (Global Research, Innovation & Discovery) building (<https://www.hw.ac.uk/uk/edinburgh/grid.htm>), opening in 2019, will provide innovative learning environments for STEM education, in particular for project-based student learning with opportunities to tackle real-world problems in collaboration with our business partners, some of whom will maintain a presence in the building. GRID will also be a hub for enterprise education and house our teams supporting new start-up and spin-out businesses.

**Graduate Apprentices:** HWU continues to work closely with Skills Development Scotland in the development of national frameworks for GAs in a number of subjects and in 2018/19 is delivering one of the largest shares of any Scottish university of the GA programmes so far awarded by SDS. In 2018/19, we have some 160 Graduate Apprentices across seven programmes in Engineering, IT, Business, Financial and Built Environment professions, in partnership with over 70 employers, and for 2019/20 SDS has awarded Heriot-Watt over 200 places for the continuation of our existing GA programmes at scale and the initiation of further new GA programmes including Process Engineering and Data Science. Our GA programmes are developing and delivering new models of intensively work-based learning for the student-apprentices and employers. We see fully work-based learning as represented by the GA model as an important extension of our portfolio in itself, which is also providing new thinking, new opportunities and new local employer engagement enabling increased work-related content and experience across the wider curriculum.

**Student Mental Health and Wellbeing and Gender Based Violence:** Heriot-Watt University's approach to student mental health issues and to address gender based violence sits under the University's Wellbeing agenda. The University has implemented a student Partnership Agreement for 2018/19, developed in conjunction with its Student representative bodies, and this sets out the main agreed priorities for working in partnership each academic year and outlines an associated action plan<sup>5</sup>. The Wellbeing agenda is one of the three main themes (the others being Academic and Community) and the main focus is the development of an institutional wellbeing strategy and the promotion of sector-wide initiatives in the areas of mental health and gender-based violence. The University has established a high-level group, chaired by the Deputy Principal for Learning & Teaching and involving key internal stakeholders including senior elected officers of the Student Union, to develop the Wellbeing Strategy and this will be finalised during Academic year 2018/19. The Wellbeing Agenda has a high profile within the institution and progress is being overseen by the University Executive and Court, who will receive detailed briefings and will have the opportunity to contribute to the development of the wellbeing strategy during the spring of 2019.

An emerging theme in the University's Strategy 2025 is a focus on forging a strong student-staff community of equals and in "developing a resilient educational community, with a curriculum that supports the development of personal wellbeing alongside technical expertise"<sup>6</sup>.

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<sup>5</sup> Student Partnership Agreement: <https://www.hw.ac.uk/services/academic-registry/quality/learning-teaching/student-learning-and-teaching-partnership.htm>

<sup>6</sup> University's Strategy 2025: <https://strategy2025.hw.ac.uk/>

**Mental Health and Wellbeing:** The University's Wellbeing strategy will be developed early in 2019. Following an institutional Wellbeing Summit, task-and-finish groups will develop strands of the strategy, with final approval to be secured before the end of academic year 2018/19. The University has a range of policies and guides available online<sup>7</sup>.

We have invested significantly in the areas of student wellbeing and mental health support and this is illustrated by the increase in staff over the past five years from 1.6 FTE accredited counsellors in 2013-14, to a position where the University currently has a complement of 4.8 FTE at the Scottish Campuses (including, since September 2017, a Specialist Mental Health Counsellor).

The University offers a wide range of relevant events, activities, workshops and training throughout the academic year and these are widely publicised to students and staff<sup>8</sup>. These are often offered in conjunction with the Students Union and include wellbeing activities, residence life events aimed at building a sense of community and addressing isolation for the on-campus residential group. Additional activities are hosted by the Residence Life team within the campus accommodation service, the Chaplaincy, Student Union and Oriam. Under the Student Partnership Agreement, all of these parties are also working together to create a shared programme of events to raise Mental Health awareness and challenge stigma. Additionally, the University has also invested in 4 new Student Success Advisor posts at the Scottish Campuses. They are all recent Heriot Watt Graduates who started in their role in August 2018 and are located within the Wellbeing team. They play a key role in supporting and advising students on a wide range of issues around the transition to higher education and in addressing the challenges (academic and non-academic) they may encounter.

The University's Wellbeing Service works in close partnership with agencies to support the transition of students into HE. Agencies include the University's Medical Centre, NHS Mental Health Assessment Service, Edinburgh Crisis Centre, Breathing Space, Healthy in Mind, Big White Wall, and NHS Community Mental Health teams. The impact of counselling support is gauged through the use of clinical assessment tools which are completed by the student pre and post therapy.

**Diet and Healthy Weight:** The Scottish Campuses have achieved the Healthy Living Award<sup>9</sup>.

**Gender Based Violence:** Heriot-Watt University is an integral member of the Fearless Edinburgh initiative and hosted the first joint event in May 2018. This initiative is a response to, and is closely aligned with, the Equally Safe in Higher Education project. The Fearless Edinburgh working group aims to address sexual violence within the Higher Education sector and includes the four Edinburgh-based Universities, the Open University, Scotland's Rural College, Police Scotland, Rape Crisis NHS Lothian and Edinburgh City Council. More detailed action plans will emerge from subsequent meetings. The University is also committed to implementing the Equally Safe toolkit and participating in the planned regional workshops. Key local developments include:

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<sup>7</sup> Mental Health policies and guides: <https://www.hw.ac.uk/students/health-wellbeing/edinburgh/disability/support/mental-health-problems.htm>

<sup>8</sup> Wellbeing activities: <https://www.hw.ac.uk/students/health-wellbeing/edinburgh/activities.htm>

<sup>9</sup> Healthy Living Award: <http://www.healthylivingaward.co.uk/customers/healthy-eating-near-you/edinburgh-and-lothians>

- The University has launched *Report it*, an online tool where staff or students can confidentially highlight cases of harassment, bullying or abuse of any kind<sup>10</sup>.
- The University has invested in SafeZone<sup>11</sup>. This is a free app that allows students or staff to send a location-based alert from their smartphone or tablet to the University's SafeGuarding Services whenever an immediate emergency response, first-aid or any other general assistance is required.
- In July 2018 representatives from the University's Human Resources and Wellbeing teams participated in Bystander Intervention training held by Police Scotland. This training is being rolled-out in partnership with the Student Union during 2019.
- In September 2018, alongside all other Scottish HEIs, Heriot-Watt University issued Gender-based Violence Support Cards to all staff based in its Scottish Campuses.

The outcomes from developments in this area will inform the University's Gender Action Plan<sup>12</sup> (see also Priority 5). The July 2017 Plan will be reviewed in April 2019 and will provide an update on developments in the area of gender based violence. Developments will also inform the review and update of the University's current Student Harassment and Bullying Policy<sup>13</sup>

**Internationalising the student experience:** The Heriot-Watt student experience is also characterised by an international ethos throughout the University. At a third of the population, the proportion of students at the Scottish campuses who are from outside the UK remains among the highest in Scotland and contributes to the experience of studying and living in a vibrant and diverse multi-national and multi-cultural environment. A number of undergraduate programmes in the sciences and business as well as languages include a year abroad at high quality partner universities across N America, Australia, Europe, India and China, typically involving around 150 outwardly mobile students per year. A recent addition to the portfolio is an undergraduate degree in International Business and Management with Chinese Language. This includes student exchanges with Tianjin University of Finance and Economics, our partner in The Scottish Confucius Institute for Business and Communication, which makes available Chinese language learning for students, staff and business clients, in its mission to foster education and research links between Scotland and China in management education and translating and interpreting.

Additionally, from 2015/16, the **Heriot-Watt University "Go Global" programme** has promoted opportunities for our students to move freely among the Heriot-Watt campuses in Scotland, Dubai and Malaysia for a semester, a full year of study, or longer. In 2018/19 approaching 300 students are taking the opportunity, about a third being outwardly mobile from Scotland, with strong indications of still increasing interest and take-up for the future. We see the international multi-campus basis of Heriot-Watt offering perhaps unprecedented opportunities to realise scaled-up international student mobility, making the experience of study abroad a reality for any Heriot-Watt student who wishes it, with obvious benefits for personal development and graduate employability. We are promoting this as a valuable and distinctive feature of studying at Heriot-Watt and are providing additional support including financial assistance to help students take the opportunity, for

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<sup>10</sup> Report-It: <https://heriotwatt.info-exchange.com/ConfidentialReportForm>

<sup>11</sup> SafeZone: <https://www.hw.ac.uk/services/safety-security/safezone.htm>

<sup>12</sup> HWU Gender Action Plan: <https://www.hw.ac.uk/services/docs/290617HWUGP.pdf>

<sup>13</sup> HWU Student Harassment and Bullying Policy: <https://www.hw.ac.uk/documents/anti-harassment.pdf>

example for students from wider access backgrounds. The University's new Strategy 2025 expresses the aspiration for take-up of some form of international mobility to grow to involve over half of all Heriot-Watt students over the life of the strategy, and for all HWU to have some involvement in international working through, for example, collaboration in multi-campus international team projects.

### Priority 3: WORLD-LEADING RESEARCH

As discussed elsewhere in our Outcome Agreement, February 2019 saw the launch of our new Strategic Plan, “Strategy 2025”. To underpin the research component of this we will continue to recruit, retain and develop excellent research leaders within a supportive research culture that provides access to high quality support enabling staff to achieve world-leading research in their areas of specialism. Over the period of the strategy we aim to expand our capacity and strengthen our reputation, building on areas of existing excellence, providing seamless connections to business and industry, and providing real value to society.

**REF2021:** Building on our REF2014 success we are now well into our preparations for REF2021. Recognising the benefits of joint submissions initiated through research pooling, we have engaged in discussions with the University of Edinburgh to continue our strategy of making joint submissions in three units of assessment: General Engineering, Mathematical Sciences and Architecture Built Environment and Planning. Underpinning this strategy is continuing commitment to our Research Intensification through “Strategy 2025”. In particular in the joint submission in General Engineering, which ranked top in the UK for “Research Power” on REF2014, we foresee a further increase in the scale of this large submission while at least maintaining its very high quality. In addition to our preparations through “mock assessments” and the like, including external review, staff are fully engaged with the development of REF2021 Guidance through Panel Membership of discipline panels and the Equality and Diversity Advisory Panel. We are also providing Scotland’s only representative to the cohort of Panel Advisors recruited by the REF team.

**Research Income:** We are currently consolidating previously rapid growth to over £30m research grant and contract income in 2017/18 with a view to resumed growth over the next three years. UK and international business and industry (~25%) and the EU (~10%) are major sources second to UKRI (~50%), where we are making advances in NERC and MRC funding in addition to established strength with EPSRC. Medium/large-scale strategic and often collaborative awards are increasingly important including the renewal of leadership of UKRI/EPSRC Centres for Doctoral Training in Robotics; Photonic Imaging, Sensing and Analysis; and Mathematical Modelling, the latter in partnership with University of Edinburgh – all announced in February 2019. In the EPSRC grand challenge funding for research in Quantum Technologies, Heriot-Watt is a large part in Scotland’s relative success, with Heriot-Watt physicists playing major roles in two of the four UK collaborative hubs, securing some £4 million current research funding. Renewal of EPSRC funding for the International Centre for Mathematical Sciences in collaboration with University of Edinburgh was confirmed in 2018. Several other major current initiatives are referred to individually below.

Continuing uncertainties around Brexit are a major concern for continuity of funding from EU sources in the medium term, however, recently announced initiatives, such as the Global Challenge Research Fund and the Industrial Strategy Challenge Fund provide new opportunities. Given our international footprint the GCRF provides an opportunity that we are actively pursuing with international stakeholders and collaborators.

We anticipate that the Industry Strategy Challenge Fund will form an important component of research income in future years. Our staff are engaged in influencing how this funding will be used in areas of importance to the university including robotics, energy and sustainability, and quantum technologies.

**SFC Research Excellence Grant:** SFC REG of £12.75m in 2018/19, plus £0.6m SFC support in relation to the Global Challenges Research Fund, plays a vital underpinning role in our capacity to win research project funding. A case study of the development of our current strength in quantum technologies including REG-supported internal investment is appended.

**Sir Charles Lyell Centre for Earth and Marine Technology:** Having now completed the building and initial recruitment phase for the Centre, work is proceeding on further phases of academic recruitment in support of the initiative. These phases are targeted at strengthening the growing synergies between the University and the British Geological Survey. Academic staff recruited to date have been highly active in developing research proposals and we remain broadly on track to achieve the ambitious research growth targets we set ourselves. Recently, we have been successful in a number of UKRI and EU funded projects in Geo-energy and Marine Science all of which are joint with the British Geological Survey. To support our aspirations in the increasingly important area of geo-energy, we will be recruiting a Chair in Geo-thermal Energy co-funded by the British Geological Survey in 2019.

**Robotics and Autonomous Systems (RAS) and the Edinburgh and South East Scotland City Region Deal in Data-Driven Innovation (DDI):** Our vision in creating, with Edinburgh University, the Edinburgh Centre for Robotics is proving to be of major benefit with Robotics emerging as a regional strength in the Edinburgh and Southeast Scotland Science and Innovation Audit, a theme in the UK Industrial Strategy, and a major component of the Edinburgh and South East Scotland Region City Deal in Data Driven Innovation. In autumn 2017 we were awarded some £14m from EPSRC to lead the UK hub for Offshore Robotics for Certification of Assets (ORCA), which will over coming years leverage significant further industry funding. At the end of 2018, we reached the stage of final approval by the UK and Scottish Governments of the full business case for a capital investment of some £28m to establish the UK National Robotarium (~£22.5m to Heriot-Watt, ~£5.5m to University of Edinburgh). This will place us – and the Region – at the forefront of developments in RAS internationally. The City Deal represents a region-wide partnership of universities, colleges, local government and industry and will be a major driver of economic growth in the region. As our RAS programmes continue to develop, we are undertaking significant expansion of our academic base in this and related areas through recruitment into Engineering and Computer Science.

**Resilient infrastructure:** A further initiative aligned with the proposed Industry Strategy Challenge Fund is our plan to grow capability in resilient infrastructure research, where we have discussions underway with potential industry partners to co-invest in this initiative.

**Demonstrating Sustainable Island Futures:** We have been successful in partnering to bring major research develop funds to Orkney. The £31M *Innovate UK* Virtual Power Plant project, announced in late-2018, will utilise the islands distributed energy resources and maximise local consumption of renewable generation through aggregating wind, solar and marine renewable generation with demand-side flexibility including distributed battery storage, Electric Vehicles charging (EVs and electric buses), flexible heating, hydrogen generation and storage. In addition to the Industrial Strategy Challenge Fund-sponsored project, the Energy Revolution Research Consortium (EnergyREVSystem) will utilise Orkney as a case study for research on the scaling-up of smart local energy systems.

**Global Challenge Research:** Building on our international positioning in Dubai (UAE) and Putrajaya (Malaysia), we are deploying our SFC Formula GCRF funding to develop a new

challenge-led interdisciplinary research programme aligned to three global research themes – Sustainable Energy, Digital Transition and Resilient Communities. These themes have been chosen to contribute to the delivery of the United Nations Sustainable Development Goals and to build on our research strengths in energy, photonics, laser manufacturing, mathematics, water management and social policy. The initiative will also be supported by development of new strategic relationships with other like-minded universities – we are in discussions with potential partners in the Middle East, South East Asia and Australia.

**Blue Economy:** We are proactively promoting and seeking to set the agenda on the economic development opportunities for Scotland and the UK to take a leading role in the emerging concept of the “blue economy” – the growing international focus on innovative strategies for sustainable development and use of the resources of the world’s oceans and seas. This builds on our expertise in: marine science and conservation, supported by the world-leading aquarium facilities located in the Lyell Centre; aquaculture and sustainable fisheries based in Orkney; subsea engineering and subsea robotics; and deep sea mining in collaboration with BGS. Early success in this area is evidenced by our work on the Dornoch Environmental Enhancement Project (DEEP) to reinstate a European Oyster reef in the Dornoch Firth in partnership with Glenmorangie whisky distillers and Marine Conservation (Scotland). The oysters act in tandem with Glenmorangie distillery’s new anaerobic digestion plant, to further purify water discharges and also absorb CO2 emissions. The project won a number of awards recently, including the Hydro Nation award for innovative work in water treatment.

**Postgraduate research students:** Research student numbers have grown substantially over recent years, thanks to investments including James Watt Scholarships and more recently to outstanding success in securing participation and often leadership in EPSRC, NERC and ESRC Doctoral training centres. This is indicative of the high quality environment Heriot-Watt provides for research training in our areas of world-leading research strength. We now have a vibrant community of some 800 doctoral students and envisage slower growth or consolidation to sustain this critical mass as earlier years’ increases in student numbers feed through to increases in doctoral output.

**Researcher Development: *Crucible*** is a professional and personal leadership and development programme, spanning all academic disciplines, designed to enable early career academics (and equivalents in research institutes and SMEs) to come together to explore and develop their creative capacity and problem-solving potential. Scottish Crucible is led and managed by Heriot-Watt with financial support from SFC, Scottish Government and the host HEIs. Since 2009 the alumni network of >150 individuals have created over 30 interdisciplinary / cross-institutional research endeavours, with Scottish Government supporting additional 'Projects for Scotland'. In 2018 we submitted our case for renewal of our **HR Excellence in Research** award, which represents best practice in development of research careers and in particular gives effect to the Concordat for Postdoctoral Research Assistants, through promoting awareness of and engagement with development opportunities for PDRAs and research supervisor development for all levels.

**Women in STEM Subjects / Athena-SWAN:** Heriot-Watt is strongly engaged with the Athena SWAN Charter process, which recognises and encourages commitment to combating the under-representation and advancing the careers of women in both STEM and Arts, Humanities, Social Science and Law (AHSSL) research and academia. HWU was a founder member of the Athena SWAN Charter and holds the Athena-SWAN Bronze Award for the University overall, with renewal achieved in Spring 2017, and our three

STEM-based schools, comprising 80% of our academics, also have the Bronze Award. Two of the STEM-based Schools submitted for Silver Awards in November 2018, and the third will do so in April 2019 as will our large School of Social Sciences. The Silver Award submissions are intended to demonstrate action and impact – i.e. actions taken to address gender inequalities and resulting positive changes.

The case for renewal of our Athena-SWAN award established that since the base-line in 2013, there had been a 21% increase in female academics. Among specific supporting actions now in place are improved support for maternity returners; job adverts are checked for gendered language; a new mothers' room for breastfeeding has been opened; paid time-off is available for fathers to accompany partners to antenatal appointments; career planning including reference to equality and diversity issues is included in the PDR process for all staff and promotion briefing sessions, also including equality and diversity issues, are held for both academic and professional services staff. Further information on developments in Equality and Diversity is included under Priority 5.

**Research Integrity Concordat:** Recent UK-wide investigations into the implementation of Research Integrity policies in UK Universities showed no recent case of misconduct at Heriot-Watt. Nevertheless the University is implementing from 2019 a revised procedure for investigating allegations of research misconduct. In addition, we will implement the revised Research Ethics Procedures including articulation with effective data management in relation to GDPR regulations. This has involved investing in new systems to support more effective scrutiny of ethical implication of research (and other) activities. We will also seek membership of networks and bodies to further demonstrate our commitment in this area (such as UKRIO). In 2019, investments made by the University to provide additional resource into this area will come on line. A new Policy, Strategy and Impact division of our research office (*Research Engagement*) focuses existing and additional resource to support the effective development and monitoring of ethical, integrity and related research policies.

**Concordat on Open Research Data:** We are fully committed to ensuring the widest possible access to our research outputs, having had a Research Publications Policy in place since 2012, and a Research Data Management Policy since 2015. Both policies underpin our commitment to ensuring that the outputs created by our research are as widely available as possible. A Research Data Management Working Group oversees the provision of a research data management policy and procedures. Compliance with the REF2021 Open Access Policy is monitored using our Research Information System (Pure) and compliance is (December 2018) at 90%. Compliance with UKRI Open Access Policy in 2017/2018 was 94%, with over 75% of journals and conference proceedings from 2014 onwards are open access. We are in the process of procuring a dedicated research data repository, and are working on a preservation strategy for research data. Currently, Pure is used to store and share datasets, with over 120 datasets publically available. With the planned creation of a research data management service in 2019, we aim to increase the deposit of research data in institutional or third-party repositories. Active research data can be stored and shared via an institutional Dropbox account (hosted in the EU) or for sensitive data in a dedicated Research drive.

We support open access journals by providing an open journal service (in collaboration with the University of Edinburgh) for academic staff to set up and run open journals. Currently one journal is hosted.

**Public and Cultural Engagement** is important to our mission to create and exchange knowledge for the benefit of society. We are a signatory to the *Concordat for Engaging the Public with Research*. In addition, we successfully secured a RCUK *Strategic Support to Expedite Embedding Public Engagement with Research* award, which was extended at the end of 2018. We will adopt an evidence-led approach to influence the culture change in our university that we seek, and we aspire to help drive this cultural shift across the sector. One of the outcomes of this will be a 'good practice checklist' based on 2-way consultation, keeping our public involved throughout.

*Heriot-Watt Engage* promotes, stimulates and supports engagement activities by our research community. Examples of activities include the wide-ranging programme of our outstandingly successful “Year of the Sea 2018”, which involved 134 academic staff and 516 students running 41 events engaging with 30 schools, 1,500 school pupils, 19,000 members of the public and 21 MSPs and peers. In 2018, we also collaborated with the Edinburgh International Science Festival to bring a major International Science Festival event out of the city centre onto our campus. This was an outstanding success with >5,200 people from diverse backgrounds, many of whom were engaging with our research for the first time. We worked collaboratively with partners to ensure access from our local communities in areas of multiple deprivation. We will enter our fourth Themed Year in 2019 (Year of Health<sup>14</sup>) keeping public engagement prominent in the agendas of colleagues and senior leadership, as well as keeping our science visible for our publics.

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<sup>14</sup> Year of Health 2019: <https://www.hw.ac.uk/research/year-of-health-2019.htm>

## **Priority 4: EFFECTIVE KNOWLEDGE EXCHANGE INCLUDING EXCELLENT COLLABORATION WITH BUSINESS & INDUSTRY, ENTERPRISE AND INNOVATION**

**General:** Effective knowledge exchange and innovation, including excellent collaboration with industry, is strongly reflected in the University's new "Strategy 2025", particularly in the strand "*Excelling in Research and Enterprise*". Embodying our knowledge exchange and innovation activities within the institutional strategy, with specific initiatives and KPIs, will drive future success.

Central to Heriot Watt's heritage is our ability to tackle problems of real significance to society through the quality of our fundamental research coupled with our interdisciplinary approach and close collaboration with the sectors of industry and business with which we engage, providing a seamless evolution from fundamental research through to innovation and enterprise. Our strategy builds on this heritage. Our approach and action plans in this area are based on three interlinked strategic themes:

- Cultivating Partnerships
- Creative Spaces
- Global Pioneers.

These themes are informed by the Government's economic strategy for *Inclusive Growth*, align with the plans set out in our *University Innovation Fund* plan, and address a number of the issues raised in the *Innovation Scotland Forum action plan*.

**Cultivating Partnerships:** We will directly encourage more business innovation through developing a new model for working in partnership with business that will grow our reputation and increase our business development opportunities in teaching, enterprise and research. We will work to develop a reputation of "partner of choice" through our values, behaviours and the quality of our work, and the added value that we bring to the partnership. Building on our distinctive footprint we will support organisations to grow internationally and build partnerships to address global innovation challenges through utilising our campus locations as hubs to international markets. Our partnership implementation will be built around creating global networks and clusters, using successful techniques such as the "spiral innovation" approach to accelerate innovation through partnerships which was developed in conjunction with industry partners in our ORCA Innovation Hub.

The EPSRC/industry ORCA Hub (Offshore Robotics for Certification of Assets) is the largest *Industrial Strategy Challenge Fund (ISCF)* programme led from Scotland. Led by the Edinburgh Centre for Robotics, a partnership between Heriot-Watt University and the University of Edinburgh, the ORCA Hub brings together internationally leading experts in eight UK universities with over 30 industry partners to create a multi-disciplinary consortium in an ambitious £36M programme aimed at addressing the offshore energy industry's vision for a completely autonomous offshore energy field.

We will build on this success and work in partnership with other Scottish HEIs to target further UK research and development funding from the Industry Strategy Challenge Fund and other sources including the *Strength in Places* Fund.

We will further add value to the innovation landscape through partnerships with the Scottish Innovation Centres including:

- Continuing as administration hub for Oil & Gas Innovation Centre (OGIC) as it develops a new business plan for Phase 2
- Supporting co-located IBiolC staff within the FLEXBIO facility at Heriot-Watt
- Aligning our business development managers to each of the Scottish Innovation Centres, to act as primary points of contact for all collaborations / industry contacts
- Supporting Innovation Centre events across Scotland and host at least one Innovation Centre event at a Heriot-Watt campus

Success will be measured by the number of new partnerships created and the economic growth of our partners. In developing these partnership we will continue to leverage Interface Innovation Vouchers and UK Innovate Knowledge Transfer Partnerships (KTP) funding to catalyse new relationships. During AY2017/18 HWU secured 13 SFC Innovation Vouchers with Scottish SMEs and 6 new KTP project awards, 5 with Scottish SMEs and 1 large Scottish company – total value of £1,392,995.

**Creative spaces:** Building on the collaborative principles embodied within our new Global Research and Innovation Building, the GRID, we will provide creative spaces on our campus to support collaboration. The flagship GRID building will provide a highly visible focal point for businesses in Scotland to engage with the University and to access a wide range of innovation to improve their competitiveness, productivity and growth. Furthermore, the unrivalled digital framework connecting the GRID will enable organisations to collaborate with our international partners.

The National ROBOTARIUM, a £28 million joint venture between Heriot-Watt University and the University of Edinburgh, will build on the Edinburgh Centre for Robotics partnership. A particular feature of the new building at Heriot-Watt will be “living laboratories” – new co-operative workspaces to facilitate engagement and collaboration with partners, for example for product development and demonstration, for existing companies and public agencies, and for entrepreneurs to form and scale-up new high value businesses. The National Robotarium is of course a key project of *the Data Driven Innovation* strand of the *Edinburgh and South East Scotland City Region Deal* in which Heriot-Watt University is a core partner together with the region’s other universities, colleges and local authorities.

Through providing digitally connected creative spaces at all of our campus locations in Scotland – Edinburgh, Orkney and Galashiels – we will be a powerful contributor to driving and anchoring place-based growth in our local communities.

Furthermore, building on our Research Park, which currently hosts over 35 businesses and 1,000 employees, we will continue to support business scale-up and grow the number of businesses co-located on our campus.

**Global Pioneers:** In alignment with the *Enterprise and Skills Review*, we are active in growing the entrepreneurial culture in Scotland, focusing on the full spectrum of enterprise/entrepreneurship support from developing enterprising mind-sets right up to business growth and scale-up (see *Creative Spaces* theme). We will achieve this through developing a global enterprise and innovation programme to create a culture of institutional entrepreneurialism that maximises the economic benefit of our research through the creation of intellectual property, start-ups, and spin-outs. We will continue to work in partnership with other HEI’s to share best practice. Furthermore we will host the Converge Challenge team within our flagship GRID building and continue to provide world class facilities and creative spaces to support entrepreneurial activities.

The Global Pioneer programme will build on our Entrepreneurial Communities project in partnership with Santander Universities. These activities will attract new relationships and partnerships from organisations seeking both technology and talent to prepare them for a highly disruptive future world of work. A multidisciplinary and multi-stranded approach, with foundations based on leadership and organisational management, will enable HWU to excel in the creation of entrepreneurs and intrapreneurs, gaining a reputation for addressing productivity and scale-up.

We will continue to support company growth through leveraging the Scottish Enterprise High Growth Spin-out Programme (HGSP). Two of our previous HGSP projects / Converge Alumni secured >£2M venture funds in 2017 and we shared the success of our spinout process through the Scottish spinout support group. We welcome the opportunity to demonstrate best practices and work with university partners, enterprise agencies and others to further develop our entrepreneurial activity.

We continue to restructure in support of Enterprise with the creation of a new Enterprise team focused specifically on supporting students and staff in start-ups, spin-outs and business scale-up. This includes funding a number of new strategic positions (an Enterprise Executive, Commercial Manager and Innovation Manager), in addition to our recently appointed Chief Entrepreneurial Executive, who will be directly responsible for implementing the University Enterprise Strategy.

Our unique international approach to enterprise and skills support will contribute to the Scottish Government's ambition of Scotland ranking among the top quartile of OECD countries in terms of productivity, equality, wellbeing and sustainability.

This links directly to our Universities Innovation Fund (UIF) submission where Heriot-Watt leads in the area of "Internationalisation". Heriot-Watt University remains the only HEI to lead on 2 priority action areas– "Internationalisation" and "Diversity & Equality" – and remains committed to deliver on these areas both individually and collaboratively.

In relation to the Innovation Scotland Action plan, Heriot-Watt will also:

- continue as chair of [www.universitytechnology.com](http://www.universitytechnology.com) (UT) steering group,
- continue to promote easy-access IPR initiatives through UT web portal;
- actively contribute to ensuring that contracts with Scottish SMEs are delivered through standardised template agreements.

Our Universities Innovation Fund (UIF) Plan is available at appended.

## Priority 5: HIGH PERFORMING INSTITUTION

**Governance:** The University operates in compliance with the Scottish Code of Higher Education Governance and aims to achieve best practice in all aspects of its governance. A full Corporate Governance Statement is to be found in the University's latest Reports and Financial Statements<sup>15</sup>. Significant developments in the University's governance in 2018 have included:

- the active involvement of Court and Court committee members throughout each of the different phases of development of the University's new strategic plan: Strategy 2025;
- the initiation of processes towards the appointments of a new Chancellor of the University and Pro-Chancellors in 2019 and a new Chair of Court in 2020;
- an externally commissioned governance Effectiveness Review of the Court and the Senate. The review included interviews with a range of internal and external stakeholders, evidence gathered via Court, Senate and committee work processes, and compliance testing. The final report of the combined review was finalised at the end of 2018 and an action plan was under consideration by the relevant bodies (Court, Senate and the University Executive) in the early part of 2019;
- conclusion of work on a major review of the University's Charter and Statutes and the development of key supporting Ordinances. The revisions were necessary to meet the requirements of the Higher Education Governance (Scotland) Act 2016, while opportunities were taken also through the review to introduce greater clarity, consistency and cohesion. It is intended that the new Charter, Statutes and Ordinances will be enacted in the early part of 2019;
- implementation of a new academic governance structure and processes supporting the work of the Senate in accordance with the outcomes of a major review of the effectiveness of the Senate undertaken in 2017. This has included implementation of a new committee/reporting structure, clarification of delegated powers, and a wide range of enhanced governance processes and procedures;
- an inaugural Annual Stakeholder Meeting held in May 2018. The Court, the Principal and other members of the senior executive team presided at this meeting which attracted a wide range of external stakeholders, alumni, students and staff members. Those who attended the event had the opportunity to learn more about the work and achievements of the University, including both staff and student achievements, and to ask questions;
- a meeting of the Court and the Senate held jointly for the purpose of engaging in strategic discussion about the University's mission and vision. It is intended that joint meetings of the Court and the Senate should continue to form part of the future annual schedule of meetings, to strengthen members' understanding of the respective roles of those bodies, and to support the development of a shared vision for academic governance and the delivery of the strategic objectives of the University; and

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<sup>15</sup>Reports and Financial Statements: <https://www.hw.ac.uk/services/management-accounts.htm>

- the introduction of a new annual process of equality and diversity reporting to the Court on the membership of Court and Court committees. In December 2018 the Court approved an Equality and Diversity Statement which confirms the commitment that the Court shall make in relation to the achievement of equality and diversity within the membership of the Court and Court committees. The University has taken particular steps when advertising independent lay member vacancies on Court, or when publicising forthcoming vacancies in elected member categories, especially to encourage applications or nominations from female candidates and those from diverse backgrounds.

At the beginning of the 2018/19 session 5 out of 13 appointed independent members of the Court were female – one female appointee having had to defer taking up her place until 2019/20, while 4 out of 9 elected places have been taken up by female members.

Of the 13 members of the University Executive in the UK, as at December 2018 there are six female members.

**Value for money and impact for public investment received:** In addition to our own strong focus on achieving value for money and increasing efficiency, Heriot-Watt is a willing partner in relevant collaborative initiatives that advance efficiency and effectiveness in the HE (and FE) sector in Scotland. Significant new and established academic collaborations in teaching and research with Scottish institutions are referred to throughout this document. A number of service collaborations are in operation or currently being explored and developed, in particular in the ICT arena in areas such as disaster recovery and cyber security.

At 21.5% in 2016/17 falling to 20.7% in 2017/18, SFC grant funding to Heriot-Watt as a proportion of the University's total income is one the smallest proportions among the universities in Scotland. Expressed in terms of total funding from the Scottish "public purse", ie SFC grant funding plus tuition fees paid by SAAS, the figure for Heriot-Watt is around 25%. Thus the University demonstrably generates a high degree of leverage on the public funding received.

In 2017 we published an interim refresh of the major Economic Impact Assessment of the University's operations undertaken in 2012 which indicated the scale and nature of Heriot-Watt's economic impact on the nation and region including generating £278m Gross Value Added for the Scottish economy and supporting 6,254 jobs.

**Equality and Diversity:** Heriot-Watt University is cognisant of and strongly committed to fulfilling the duties of the Equality Act 2010, in summary requiring public bodies to give due regard to:

- eliminating unlawful discrimination,
- advancing equality of opportunity, and
- fostering good relations on the basis of protected characteristics.

In the context of preparing our Equality Outcomes 2017-21, the University reviewed the substantial progress achieved through our Equality Outcomes 2014-17, "A Culture of Inclusion for All". Areas of notable progress include improved systematic information gathering and publication, the embedding of Equality Impact Assessment, and capacity building to advance inclusion, as well as a number of specific interventions including flexible working and learning and increasing diversity of participation in many aspects of

University life. Equality and Diversity considerations are now explicitly addressed in the Terms of Reference of all University Committees. We have agreed significant new Equality Outcomes 2017-21, developed through the Equality and Diversity Advisory Group (EDAG) with staff and student representation and extensive consultation. By giving shape and cohesion to our equality and diversity activities and embedding them throughout the life and work of the University, this “Mainstreaming Report<sup>16</sup>” underpins our next steps in delivery of the Public Sector Equality Duty. One key commitment is the production and publication of an Equal Pay Statement. In addition to our legal obligations in the continuing development of our policies and ongoing enhancement to disclosure, recording and reporting, a number of interventions ongoing in 2017/18 and 2018/19 include increased use of sign language, provision of more disabled car parking, development of staff LGBT, BAME and Disability networks and support for student Liberation Groups related to Protected Characteristics.

The University published a Gender Action Plan in 2017<sup>17</sup>. Our engagement with the Athena SWAN Charter to combat the under-representation of women and advance the career opportunities of women in STEM research and academia is described under Priority 3 above, and the fundamental importance of the Athena SWAN process for Heriot-Watt to harness positive engagement for culture change affecting the staff and student communities is referred to under Priority 1. In summary, the University first joined the Athena SWAN scheme in 2005 and currently holds an institutional Bronze Award, while our three STEM-based Schools also hold Bronze Awards (all awards are subject to renewal every four years). Two Schools submitted for Silver Awards in November 2018 and two further Schools are preparing submissions for Silver Awards in spring 2019. The Silver Award submissions are intended to demonstrate action and impact – i.e. actions taken to address gender inequalities and resulting positive changes.

**Living Wage:** While we have not yet sought formal accreditation as a Living Wage Employer, the University continues to keep its paycales and practices aligned with the expectations of the Living Wage Foundation, and intends to consult on seeking formal accreditation during 2019/20.

**Cyber Security:** The University been awarded *Cyber Essentials Plus* accreditation in information security following an audit by a Scottish Government approved assessment body, ID Cyber Solutions. The UK government scheme, which is specifically designed for public sector organisations in the UK, is a globally recognised certification that serves as a kite mark for industries around the world. The certification covers the entire range of IT services provided within the University.

**Brexit:** A “Brexit Group” convened by the University Secretary with wide representation across staff and students was established in the aftermath of the 2016 referendum and continues to meet to help identify and co-ordinate actions to address aspects of the University’s operations affected by the prospect of Brexit, including the concerns of many EU27 staff and students. Ongoing actions include provision of advice and support for staff in the process of application for UK settled status, and re-assurance of continuing support for students involved in study placements in EU27 for the duration of their studies. More recently, contingency planning for a “no-deal Brexit” is proceeding in accord with sector guidance, including development of detailed risk registers and mitigating actions. The University’s scenario for replacement of undergraduate funded places currently taken up by EU-27 students is alluded to under Priority 1.

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<sup>16</sup> Inclusion for All: Mainstreaming Equality: <https://www.hw.ac.uk/services/docs/Mainstreaming.pdf>

<sup>17</sup> Gender Action Plan: <https://www.hw.ac.uk/services/docs/290617HWUGP.pdf>

## Leadership in Environmental and Social Sustainability

*Governance and Embedding of Sustainability:* The UN Sustainable Development Goals (SDGs) provide a reference framework for the University's new overarching Sustainability Policy, for which development work has commenced and will complete in 2019. The University will also consider a possible corporate commitment under the SDG Accord, the sector's collective response to the SDGs, and alignment with other metrics and frameworks including the EAUC/AUDE Sustainability Leadership Scorecard.

Specific action plans and initiatives which are currently underway include the finalisation of the Travel & Transport Strategy for the Edinburgh Campus, designed to encourage modal shift towards the most sustainable forms of transport and build on current good practice and achievements including Cycling Scotland's "Cycle Friendly Campus" award. In preparation for the planned introduction of a national Deposit Return System (DRS) for drink containers, the University is relaunching the reverse-vending system in operation at the Edinburgh Campus, with an ambition to be one of the first UK sites to operate an electronic (paperless) deposit return system.

*Climate Change Action:* The table below summarises the University's greenhouse gas emission baseline and reduction targets, as defined in the Carbon Management Plan 2015/16-2019/20<sup>18</sup> alongside emission performance as reported annually within the University's Public Bodies Climate Change Duties (PBCCD) submission. The emission reduction target is set in absolute (non-normalised) terms and includes emissions associated with the operation of new buildings added to the University's estate after the 2014/15 baseline year. For the years 2020/21 and 2021/22, which fall outside the period of the current Carbon Management Plan, the target emissions are based on projection forward towards an emission reduction target of 30% between 2014/15 and 2024/25, which is likely to feature in the University's Strategy 2025. All emission figures relate to Scope 1, 2 and 3 emissions associated with energy use, waste, water and business travel.

<b>Year</b>	<b>(baseline)</b>							
	<b><u>14/15</u></b>	<b><u>15/16</u></b>	<b><u>16/17</u></b>	<b><u>17/18</u></b>	<b><u>18/19</u></b>	<b><u>19/20</u></b>	<b><u>20/21</u></b>	<b><u>21/22</u></b>
Target emissions (tCO <sub>2</sub> e)	21,583	20,936	20,288	19,641	18,993	18,346	17,699	17,051
Actual emissions (tCO <sub>2</sub> e)	21,583	20,414	20,059	18,789	-	-	-	-
Target reduction (%)	-	3.0	6.0	9.0	12.0	15.0	18.0	21.0
Actual reduction (%)	-	5.4	7.1	12.9	-	-	-	-

The University's PBCCD reports have each year included increasing detail within the "Wider Influence" section, summarising partnership working, communication and capacity building, including relevant research and teaching activity. Future PBCCD submissions will continue to develop detail within this section. The most recent emission reductions have resulted from lower national electricity emission factors (electricity decarbonisation), specific emission reduction projects and the impact of energy efficiency improvements implemented during the refurbishment of buildings within the University's estate. Initiatives

<sup>18</sup> Carbon Management Plan: <https://www.hw.ac.uk/documents/carbon-management-plan.pdf>

completed in 2017/18 and underway in 2018/19 include numerous LED lighting projects, building fabric and building services efficiency improvements and a programme to reduce water leakage (and associated Scope 3 emissions) at the Edinburgh Campus by replacing original cast iron water pipes.

The University has engaged with recent SFC carbon reduction funding programmes including the University Carbon Reduction Fund (UCRF) and the University Financial Transactions Programme (UFTP). Zero interest funding under the UCRF has permitted the replacement of inefficient boiler plant serving three halls of residence in 2018, with the same programme potentially supporting a 1.5 MW ground mount solar PV array planned for the Edinburgh Campus if grid connection issues can be resolved. An application for grid connection approval is currently with the distribution network operator (DNO). Projects identified for possible funding under the UFTP include works to extend the coverage of double-glazing in older academic buildings and the replacement of old high voltage transformers with modern super low-loss units. These projects will make a substantial further contribution to the attainment of the University's emission reduction targets.

Investment in establishing low-carbon heat systems remains a key opportunity for emission reduction at the Edinburgh Campus, while a significant proportion of heating requirements at the Scottish Borders Campus are already met by a wastewater heat recovery system. Feasibility work has continued in 2017/18 towards the identification of an optimal solution for the Edinburgh Campus, including feasibility studies assessing opportunities for deep geothermal heat, with next-stage discussions pending with potential partners. Further early stage feasibility exercises have investigated opportunities for heating based on wastewater source heat extracted from an adjacent town sewer, while biomass (or biomass CHP) appears less feasible given possible issues surrounding local air quality and long-term supply chain sustainability.

The University liaises regularly with the Sustainable Development team at City of Edinburgh Council in relation to partnership opportunities, including discussions surrounding possible heat networks in the west of the city that could incorporate the Edinburgh Campus. Membership of the Edinburgh Community Planning Partnership has allowed the University to participate in the City's "Switched on Fleets" programme to gain grant funding for additional electric vehicles in 2018/19.

## Annex 1 – Widening Access Applications and Admissions Monitoring

### 2017/18 Scottish Applications

For entry into September 2017 (includes applications received during previous UCAS cycles for deferred entry)

		Scottish Total	SIMD 21-100		SIMD 1-20		Care-experienced		SIMD 21-100	SIMD 20	Care-experienced
		no.	no.	% of apps	no.	% of apps	no.	% of apps	%	%	%
<b>Applications</b>	<b>Total</b>	6,457	5,815		642		28		90%	9.9%	0.43%
<b>Offers</b>	<b>Total</b>	<b>5,093</b>	<b>4,568</b>	<b>79%</b>	<b>525</b>	<b>82%</b>	<b>21</b>	<b>75%</b>	<b>90%</b>	<b>10.3%</b>	<b>0.41%</b>
	U	2,192	2,022	35%	170	26%	5	18%	92%	7.8%	0.23%
	C	2,901	2,546	44%	355	55%	16	57%	88%	12.2%	0.55%
<b>Acceptances</b>	<b>Total</b>	<b>1,498</b>	<b>1,348</b>	<b>23%</b>	<b>150</b>	<b>23%</b>	<b>12</b>	<b>43%</b>	<b>90%</b>	<b>10.0%</b>	<b>0.80%</b>
	UF	662	605	10%	57	9%	4	14%	91%	8.6%	0.60%
	CF	836	743	13%	93	14%	8	29%	89%	11.1%	0.96%
<b>Clearing</b>	App	19	16		3		-		84%	15.8%	0.00%
	Acc	13	11		2		-		85%	15.4%	0.00%
<b>Entrants via UCAS</b>		1,292	1,159	20%	133	21%	11	39%	90%	10.3%	0.85%
<b>Entrants actual</b>		<b>1,334</b>	<b>1,202</b>	<b>21%</b>	<b>132</b>	<b>20%</b>	<b>11</b>	<b>39%</b>	<b>90%</b>	<b>9.9%</b>	<b>0.82%</b>

### 2018/19 Scottish Applications

For entry into September 2018 (includes applications received during previous UCAS cycles for deferred entry)

		Scottish Total	SIMD 21-100		SIMD 1-20		Care-experienced		SIMD 21-100	SIMD 20	Care-experienced
		no.	no.	% of apps	no.	% of apps	no.	% of apps	%	%	%
<b>Applications</b>	<b>Total</b>	6,206	5,589		617		21		90%	9.9%	0.34%
<b>Offers</b>	<b>Total</b>	<b>4,613</b>	<b>4,135</b>	<b>74%</b>	<b>478</b>	<b>77%</b>	<b>16</b>	<b>76%</b>	<b>90%</b>	<b>10.4%</b>	<b>0.35%</b>
	U	1,960	1,836	33%	124	20%	5	24%	94%	6.3%	0.26%
	C	2,653	2,299	41%	354	57%	11	52%	87%	13.3%	0.41%
<b>Acceptances</b>	<b>Total</b>	<b>1,327</b>	<b>1,201</b>	<b>21%</b>	<b>126</b>	<b>20%</b>	<b>4</b>	<b>19%</b>	<b>91%</b>	<b>9.5%</b>	<b>0.30%</b>
	UF	546	504	9%	42	7%	4	19%	92%	7.7%	0.73%
	CF	781	697	12%	84	14%	-	0%	89%	10.8%	0.00%
<b>Clearing</b>	App	53	33		20		-		62%	37.7%	0.00%
	Acc	43	24		19		-		56%	44.2%	0.00%
<b>Entrants via UCAS</b>		1,292	1,166	19%	124	19%	4	19%	89%	10.6%	10.6%
<b>Entrants actual</b>		<b>1,334</b>	<b>1,176</b>	<b>19%</b>	<b>124</b>	<b>19%</b>	<b>4</b>	<b>19%</b>	<b>89%</b>	<b>10.5%</b>	<b>10.5%</b>

#### Notes:

Figures are provided for Scottish-domiciled, Scottish-fee applicants to all undergraduate programmes apart from Associate Student and Graduate Apprentice programmes.

The rows "Applications," "Offers" and "Acceptances" refer to the main UCAS cycle only – clearing applications (app) and acceptances (acc) are displayed separately.

Offers and acceptances are captured at mid-July of the relevant year, i.e. before confirmation.

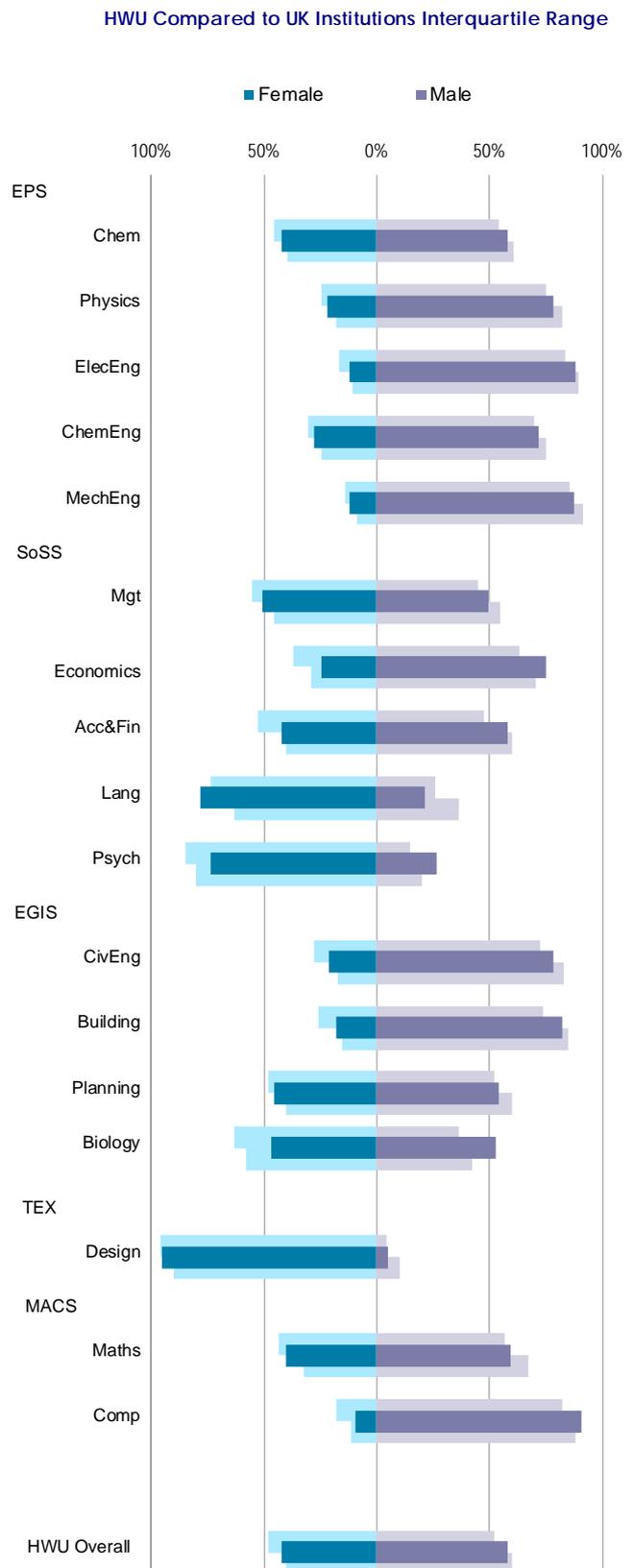
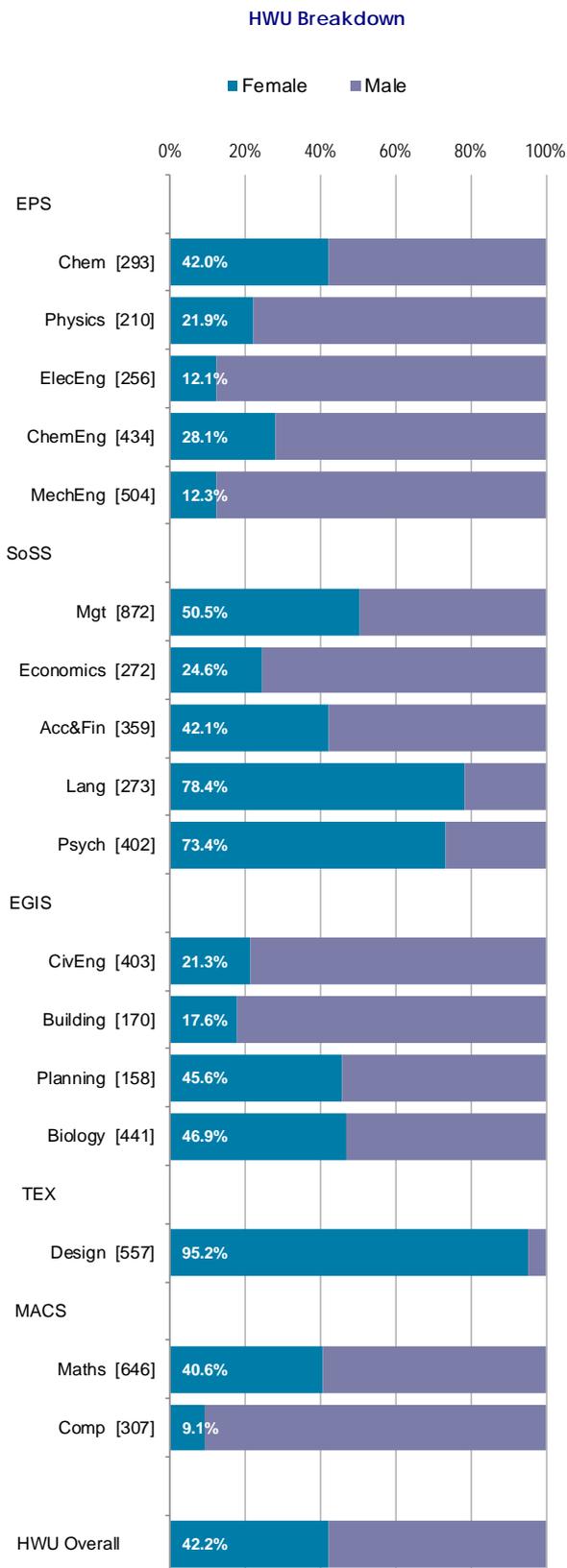
Entrants are counted only if the student remains enrolled at 1st December of their admission year.

SIMD21-100 numbers have been obtained by subtraction of SIMD1-20 numbers from Scottish total. This will therefore contain a small number of Scottish-fee applicants without a Scottish postcode on entry.

# Annex 2 – Gender Balance of HWU UG Students

## Gender

source: HESA Student Return 2016/17



## HERIOT-WATT UNIVERSITY – UNIVERSITY INNOVATION FUND PLAN 2019-20

**Dr Gillian Murray, Deputy Principal - Enterprise & Business**  
**Dr Alicia Greated, Director – Research & Enterprise**

**General:** Following the recent launch of our new “Strategy 2025”, in preparation for implementation of the strategy on a global basis across the University’s five campuses, we are restructuring our research, business development, student and staff enterprise and public engagement resources. Part of the drive for this change is to respond to and influence funding opportunities, including the UK Industrial Strategy. UIF funding will be critical in supporting this work.

*During 2019 we will create a new “Futures Team” to focus specifically on the development of large scale Industrial Strategy opportunities, working closely with our industrial partners and leveraging our Research Park assets to drive success in locally focused programmes such as “Strength in Places”.*

Within the UIF, we will continue our collaboration with and support to other organisations and our engagement with those stakeholders where we can make a significant contribution to the Scottish business landscape. In Academic Year 2018-19 (AY18/19), we are the only Scottish University to lead two UIF Priority Actions (PAs) - PA 5, Internationalisation and PA 7, Diversity and Equality. We have held UIF workshops with other Scottish HEIs and collaborated to deliver the following outcomes:

- Investigation of the feasibility of a shared database of International research & KE activity from Scottish Universities that could promote Scottish Innovations at the global level;
- Establishment of a Research & Commercialisation Directors group sub-group to review best practices in Diversity & Equality within the Scottish Innovation community and those groups impacted on by Innovation activities.

**Priority Action 1 (PA1), Demand Stimulation:** HWU has a strong reputation for industry-relevant research and teaching activity; develops successful projects with Scottish SMEs through Interface and Innovation Centres (15 in 2016); and is placed 2nd in Scotland for KTP activity with 15 active projects in 2018/19 (11 in 2016). We continue to leverage our networks (such as NCUB, KTN and GlobalScot) to identify and develop industry partners. The alignment of our business engagement resource to key sectors secured a 33% increase from 2016/17 to 2017/18 in collaborative (contract) research with SMEs whilst winning 2 categories in the Scottish Knowledge Exchange Awards (the awards for Multi-party Collaboration and Sustained Partnership).

During 2018 we continued our work with Enterprise Agencies (EAs), Interface, Chambers of Commerce, University partners and the Scottish KTP centres to instigate a series of industry days that build on the success of our “Year of Robotics” and showcase cross-cutting research and its application to Industry partners. We led on the “Heriot-Watt Year of The Seas” programme, aligned with key economic priorities in Scotland (eg Aquaculture, Blue Economy/ Energy) and aspects of the UK Industrial Strategy, working with Orkney Council, Highlands & Islands Enterprise and others to leverage financial support for long-term collaboration through a “Strength in Places” funding bid.

*During 2019, we are implementing the “Heriot-Watt Year of Health” that includes Scottish Business, Innovation Centres and Third Sector organisations. We will strengthen our commitment to support collaboration with the other Edinburgh HEIs in Public Engagement with Research through a refreshed collaborative framework for the Edinburgh Beltane for Public Engagement.*

**PA2, Simplified Commercialisation:** During UIF 2017 we implemented the standard template agreements with Scottish companies and we contributed to the KTP template agreements. Aligning staff to Scottish Innovation centres (ICs) has seen Heriot-Watt secure a total of 18 collaborative OGIC-funded projects with Scottish businesses in the Oil & Gas sector. Our success rests on a broad range of long-standing, multi-sectoral alliances with UK and international business that underpin significant research and knowledge exchange activity across the University.

*During 2019-20 we will continue to implement our enhanced strategic partnership strategy to realise new Strategic Partnerships at all levels to develop a culture of demand-led innovation. Heriot-Watt remains as chair of universitytechnology.com, continues its Easy-IP scheme whilst implementing the outcomes of an external review of its own IPR procedure and policy. A continued action is ensuring www.universitytechnology.com web portal remains relevant and functional as a one-stop shop for business. We will develop and submit a proposal for the extension of universitytechnology.com as a showcase for Scottish HEI research capability at the global level.*

**PA3, Greater Innovation:** The Heriot-Watt Global Innovation and Discovery (GRID) building opening in mid-2019, will provide innovative digitally-enabled learning environments for project-based student learning with opportunities to tackle real-world problems in collaboration with our business partners, some of whom will maintain a presence in the building. GRID will also be a hub for enterprise education and house our teams supporting new start-up and spin-out businesses.

*We will use the GRID as a hub facility to build new partnerships with local SMEs, providing a focal point for a range of skills and innovation activities. This will increase the number of companies engaging with the University and drive business investment in R&D collaborations.*

*We will further consider our regional engagement, undertaking a review of our business engagement strategy in the Scottish Borders region. As the only University in the Scottish Borders region, Heriot-Watt is well positioned to support the activity of the new South of Scotland Enterprise Agency, the work South of Scotland Economic Partnership (SoSEP) and the College network, to support economic growth, skills development and export.*

**PA4, Entrepreneurialism:** We continue to develop our Enterprise Ecosystem across our campuses and to host the highly successful CONVERGE Challenge programme, providing back-office support to the programme on behalf of Scottish HEIs. Recognising the long-term ambition for CONVERGE and its sustainability, we supported recruitment of new posts in 2017 - an outreach manager, a marketing manager, and the deputy director who has now succeeded as Director of the programme, all embedded within our enterprise office and informing our best practices.

We secured further support from the Scottish Enterprise High Growth Spin-out Programme (HGSP) for two new in 2018 projects - both female entrepreneurs having taken part in CONVERGE Challenge, two of our previous HGSP projects / Converge Alumni having secured >£2M venture funds in 2017. We share the success of our spinout process through the Scottish Spinout Support Group (SSOSG), actively participating in the development of, and adhering to the principles laid out within the “common statement on formation of spinout companies” agreed by SSOSG and Universities Scotland.

We welcome the opportunity to demonstrate best practices and work with HEI partners, Enterprise Agencies and others to further develop our entrepreneurial activity. We continue investment into our enterprise ecosystem, capitalising on our “Student Enterprise Zone” Launched in 2017 and branded as “The Enterprise Journey”, we can report a step-change in the level of Student (and staff) engagement with our Enterprise activity across the 5 campus locations.

UIF AY2016/17	Supporting SIE, Enterprise Campus & Crucible events only; 1 student startup – Turtlepack Ltd.
UIF AY2017/18 (at January 2018)	3 Bootcamps held in UK - ~50 students engaging in our Enterprise Journey. 13 student startups developing.
Our Ambition for UIF AY2018/19	We will hold enterprise boot camps across all HWU campuses to engage >750 students globally and support >20 startups in Scotland.

We are globalising the Watt Ventures Student Competition as part of the year round Enterprise Journey and promoting cross-working between STEM and HASS students to support Enterprise & Entrepreneurism skills development. We continue the development of further “MSc / MBA with Enterprise” in collaboration with our Business School.

*Further funding for 2018/2019 is enabling us to invest in a second Enterprise Executive, and will expand our Staff and Student “Enterprise Journey”, enabling us to hold company creation boot-camps, masterclasses and entrepreneur events across all campuses. Heriot-Watt continues to take an active part in the “PA4 Entrepreneurialism” collaborative working group.*

**PA 5, Internationalisation:** In support of this action we continue to:

- Seek and secure funding for our Ideas to Export Programme (I2E) which supports use our international reach and campus locations in Dubai and Malaysia as gateways to international markets for Scottish companies, in particular SME’s.
- Leverage our investment with Scottish Development International in Dubai to deliver benefit to Scotland through a 2-year business development programme supporting Scottish businesses.
- Continue our liaison with Scottish Government, SFC and Royal Society of Edinburgh (RSE) with the ambition to showcase Scottish HEIs partners’ enterprise and entrepreneurship at selected Innovation and Investment Hubs.
- Build on the success of a multi-university a “trade mission” to Boston region (in October 2017) to promote Scottish research and technology in the USA; we continue our support of the “University Technology from Scotland” initiative, pursuing further opportunities in Dubai, India, Malaysia and elsewhere where opportunities are identified for collaborative R&D with Scottish Businesses.

*In 2018/19 we have further developed our international focus, in particular in support of the “Solar Decathlon/ SDME2020 research partnership” with Scottish Businesses, Scottish Government, Scottish Enterprise, Scottish Development International, Construction Scotland Innovation Centre (CS-IC), Sensing Innovation Centre (CENSIS) and our Dubai Campus to leverage benefit for Scotland at EXPO2020 in Dubai.*

**PA6, Inclusive Growth & Societal Impact:** Building on the success of our 2017 and 2018 Year of ...” programmes (Robotics in 2017 and The Sea in 2018), which engaged >13,000 people, >100 Schools / 1,400 pupils in >50 events, our public engagement is supporting the Year of Health in 2019.

As regards training for inclusive growth, we have developed a leading position in Graduate Apprentice provision in Scotland over the last two years, with 160 GAs on course in 2018/19 working in over 70 employers, many Scottish SMEs. We expect to extend this position further with a target for over 200 GA starts in autumn 2019.

**PA7, Equality & Diversity** - During AY18/19 we continue our support for “Female Focussed” enterprise initiatives, while further developing the outcomes of our collaborative UIF workshop on this theme, contributing to embedding identified best practices across our STEM and HASS research and in teaching and the student experience. We have extended our Watt Ventures programme to include our International campuses including the AcclearateHer Entrepreneurship programme between our Edinburgh Business School, our Dubai Campus and Women’s Enterprise Scotland (WES).

*We will continue our collaborative dialogue with Scottish HEI partners on all seven PAs and formalise our engagement with each theme with a dedicated Business Development lead for each.*

Final update: 11/04/2019

# Heriot-Watt University: Research Excellence Grant Utilisation

## Quantum Technology Case Study

Many of the technologies we use today, from computers to household appliances – Global Positioning Systems, atomic clocks and lasers- take advantage of quantum physics. Just as classical physics pulled civilisation from the pre-industrial age into the Industrial Revolution in the 18<sup>th</sup> and 19<sup>th</sup> centuries, quantum mechanics spurred the Information Age, completely transforming the way we work, interact and communicate. This has revolutionised the availability and use of digital equipment in recent years, however, quantum physics has even more to offer. Today's leading technologies are not yet taking full advantage of quantum physics' most remarkable properties - superposition and entanglement - but a second 'quantum revolution' will. Indeed, quantum optics- the study of phenomena involving light, or photons and their interactions with matter at sub-microscopic levels is central to this revolution and will lead to the development of new technologies that exploit the bizarre behaviour of quantum particles.

This exciting area of world-leading research is one of the many that our Research Excellence Grant supports. Our portfolio for Quantum Technology funding is one of the largest in Scotland. We have significant critical mass in the number of staff that we employ, with a research community of 95 individuals, comprising 16 academics, 30 Research Associates and 49 full-time doctoral students. They have published over 400 outputs and have a grant portfolio of £35M. A third of the papers are in the top 10% most-cited articles in the world (normalised by year and for discipline). The articles published by the group are 145% more cited compared to the world average and 20% of the papers appear in the top 5% of the most cited articles in the world.

The quality of this research has also been recognised by significant personal awards to group members. Gerald Buller, Alessandro Fedrizzi, and Mehul Malik have all received EPSRC QT Fellowships which is the second highest number of awards to a single institution in the UK; Cristian Bonato was awarded an EPSRC Early Career Fellowship; Ross Donaldson has recently been awarded a Royal Academy of Engineering Fellowship; and Brian Gerardot has been awarded a prestigious five-year fellowship through a Royal Society Wolfson Research Merit Award and more recently a five-year Royal Academy of Engineering Chair in Emerging Technologies.

To support the activities of this group we provide significant laboratory space with over 1000 m<sup>2</sup> of experimental labs, including a newly refurbished clean room and a shared Quantum-Technologies Innovation space. These are equipped with state of the art equipment, ranging from laser-based holographic mask fabrication, flip-chip integration of quantum components, to cryogenically cooled, high efficiency superconducting detector arrays.

As a consequence of these research skills and facilities the group's research activities offer a unique blend of high quality research and real world application.

We are leading an ambitious international project to develop a new generation of quantum computers capable of making their own decisions. The Neuromorphic Quantum Computing (Quomorphic) Project aims to build a computer processor that transfers data in the same way neurons work in the human brain. The project is being led by Professor Michael Hartmann who is working alongside researchers and scientists from ETH Zurich (Switzerland), Technical University Delft (Netherlands), University of the Basque Country (Spain), IBM Zurich (Switzerland) and the Volkswagen Group (Germany). Between them, the group aims to create radical new computer

quantum devices, capable of running a huge number of artificial intelligence (AI) tasks at the same time, vastly exceeding limitations of existing technology. For example, where existing AI techniques can be trained to recognise human faces with a single photograph at a time, the quantum neural networks will be capable of analysing thousands or even millions of pictures at once.

The receivers used in photonic technology in future will be more compact, lightweight and affordable than existing versions enabling commercialisation and their widespread utilisation. These technologies have the potential to open up the use of encrypted quantum communication in space, which is of particular relevance for companies and organisations sending sensitive data, including high value financial and government communications across international networks. In recent years, quantum information research has led to the discovery of a number of remarkable new paradigms for information processing and communication. These developments include quantum cryptography schemes that offer unconditionally secure communications guaranteed by quantum- mechanical laws and quantum computers that if realised could make today’s public-key based data security systems obsolete.

The next revolution in imaging will almost certainly be spearheaded by the use of quantum-enhanced imaging approaches for example sparse single photon and ultimately approaches that use the effects of quantum entanglement. Such a revolution will necessarily require fast detection of single photons. By linking imaging using single photons with fast detectors it is possible to create depth and intensify images even if the image consists of less than one photon per pixel, on average. This means that it is possible to create accurate three dimensional images using less than 1000 photons. By comparison a typical smartphone currently in use requires well in excess of a billion photons to produce a high resolution two-dimensional image. This gives the potential of quantum-enhanced imaging approaches yielding fast and accurate 3D imaging in extreme conditions of low light or high scatter such as those found underwater or in low visibility environmental conditions.

The impact of these projects and others like them is evidenced through symbiotic relationships with a range of leading-edge companies such as Leonardo, Thales, DSTL, Renishaw, M Squared Lasers, Photon Force, Helia Photonics, BT, Sonardyne, Holoxica and Trakm8. These innovation partnerships have enabled the rapid development of ideas and accelerated commercialisation, for example single photon lidar, mosaic filters, quantum communications and Holographic displays.

In addition to these partnership activities the group has support the spinning out of multiple companies, including:

<b><i>Company</i></b>	<b><i>Specialism</i></b>	<b><i>Employees</i></b>
<b>Helia Photonics Ltd</b>	Thin film technology	20
<b>Optoscribe Ltd</b>	Laser-written optical components for lasers, sensors, & telecommunications devices	20
<b>Chromacity Ltd</b>	Tunable ultrafast laser sources	7
<b>PowerPhotonic Ltd</b>	Phase masks for laser diode beam shaping	30
<b>Optoscribe</b>	3D Photonic Intergrated Circuits	6

Collectively these have created 83 new jobs and are making a significant contribution to enterprise activities in Scotland.

Heriot-Watt University: Equality and Privacy Impact Assessment Form							
School		Area	Planning	Person responsible for the assessment	Richard McGookin Director of Planning	Date of EIA	11 April 2019
Name of the Policy/Process to be assessed.			HWU-SFC Outcome Agreement 2019/20-2021/22	Is this a new or existing policy? (please circle)		<u>EXISTING</u>	Does the policy impact on people? <u>Yes</u>
1. Briefly describe the aims, objectives and purpose of the policy.			This fulfils the requirement for the University to conclude an annual Outcome Agreement (OA) with the Scottish Funding Council, which sets out how the University plans to deliver a range of outcomes related to Higher Education policy priorities of the Scottish Government.				
2. Are there any associated objectives of the policy, please explain.			<p>The SFC and Scottish Government priorities addressed in the OA relate directly to equality and diversity goals focussing particularly on the student community.</p> <p>Our OA outlines how HWU places those with a range of personal circumstances at the centre of our provision of learning, teaching and support services. Our connection with the student journey begins with outreach to schools and continues beyond graduation. Investing in individual relationships enhances our impact on wider society supporting our reach and reputation.</p> <p>Our OA specifically demonstrates the opportunities and challenges we face and supports our ability to diagnose and address issues across the student population, particularly Fair Access, supporting our Gender Action Plan, Equality Outcomes and Athena SWAN activities.</p> <p>The OA helps us to take forward actions that specifically impact on culture in addressing Gender Based Violence, Wellbeing and proactive support of BSL all of which support sustainable culture change with the associated benefit of supporting our recently approved the University's Strategy 2025 and refreshed values.</p>				

<p><b>3. Who is intended to benefit from the policy and in what way?</b></p>	<p>The parties to the Agreement are the University Court and the Board of the SFC. Conclusion of a satisfactory Agreement enables SFC to pay and the University to receive grant funding from SFC. Pursuing the activities described in the Agreement is intended to support Scottish public policies as referred to in 1 above, with particular benefit to the students referred to in 2 above. Our OA locates the part HWU plays in meeting the Scottish Government’s Economic Strategy.</p>
<p><b>4. Is any data available about the policy, e.g. feedback from users?</b></p>	<p>The current document has been approved with commendation by the University Court (meeting on 22 March 2019). Drafts previously submitted to SFC are understood to have been well-received and the final document is expected to be approved by SFC.</p> <p>Development of the OA included a range of stakeholders as outlined in Q12.</p>
<p><b>5. What outcomes are wanted from this policy?</b></p>	<p>The Agreement inter alia sets out a range of specific target values the University is aiming to achieve over the next three years in the policy areas referred to in 2 above.</p> <p>That HWU is able to continue to make progress across all areas of the OA, impactful on the Scottish national agenda.</p>
<p><b>6. What factors/forces could contribute/detract from the outcomes?</b></p>	<p>The purpose of the plans described in the Agreement is to align resources, effort and strategic direction with the targeted outcomes to maximise opportunities for achievement informed by a clear understanding of relevant challenges and risks.</p>

7. The Equality Act 2010 includes a requirement to give 'due regard' to the public sector equality duty (PSED) in all functions. There is a specific duty to assess the impact of proposed new or revised policies and practices against three needs of the general duty. Use this section to outline relevant issues.

**SPECIFIC DUTIES OF THE EQUALITY ACT 2010**

<b>Eliminate unlawful discrimination, harassment and victimisation</b>	<b>Advance equality of opportunity between people of different groups</b>	<b>Foster good relations between people of different groups</b>
<p>Eliminating unlawful discrimination, harassment and victimisation are an integral part of the policies and procedures that operate across the student journey. The OA allows us to target efforts toward particular groups whilst ensuring the integrity of such processes. Throughout the student journey we have policies and processes to enable students to raise any issues which are addressed without prejudice.</p>	<p>This is the central theme of a substantial part of the Outcome Agreement. The document is an important platform for the University to set out its general commitment to equality and diversity, and its ongoing work programme in support of this, in conjunction with a number of current priorities in relation to student access from socio-economic disadvantaged and protected characteristic groups, and similarly current priorities in relation to staff equalities including the Gender Action Plan. Our approach allow us to place 'difference' at the centre of our work and taking steps where appropriate to open opportunities to those who are underrepresented.</p>	<p>The Agreement also describes the University's general approach to sustaining a diverse and inclusive community of students and staff, and highlights a number of new interventions to provide enhanced support for this objective as access to the University is widened.</p> <p>Diversifying the student population helps to create a diverse community.</p>

<p>8. Do you have any concerns that the policy <b>could</b> have a differential impact on any of the Protected Characteristic groups*? Detail any relevant information.</p>	<p>The OA seeks to address issues raised through SFC and Scottish Government priorities, therefore acknowledging that there may be differential impact. However, this impact is not at the expense of another group instead is about recognising that some groups may need more support to access opportunities open to them.</p> <p>It remains possible that HWU may have some difficulties in opening those opportunities to particular groups linked to resourcing issues.</p>
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<p><b>9.</b> What are the risks associated with the policy in relation to differential impact?</p>	<p>As highlighted in our OA, we are seeking to maximise a range of routes into HE for those groups who are underrepresented and are a particular focus for SFC/Scottish Government prioritises. This should not be at the expense of other potential or existing students.</p>		
<p><b>10.</b> Could the differential impact identified in 6-11 amount to there being the potential for adverse impact in this policy? If no, outline why and go to question 12.</p>		<p><b><u>NO</u></b></p>	<p>Please Explain</p> <p>Throughout the student journey we have policies and processes to enable students to raise any issues which are addressed without prejudice. Our work may target some activity toward specific groups however this is not at the expense of others. We are seeking to address imbalances through increasing numbers and therefore representation from target groups, not to reduce numbers of other groups.</p>
<p><b>11.</b> Can this adverse impact be justified on the grounds of promoting equality of opportunity for one group? Or any other reason.</p>		<p>Please Explain</p>	<p>As outlined above our targeted activity seeks to positively influence the number of students from different backgrounds without adverse impact on the dominant population.</p>
<p><b>12.</b> Demonstrate how you have involved stakeholders in the EIA.</p>	<p>Representatives from across the University community have supported the development of the OA. In addition, throughout the development of our OA a range of stakeholders have been involved. Consultation has taken place with the following groups:</p> <p>University Committee for Learning and Teaching (include student representation)</p> <p>Senate (supports academic engagement)</p> <p>University Executive</p> <p>Combined Joint Negotiating and Consultative Committee (includes trades unions)</p> <p>The University Court</p>		
<p><b>13.</b> Date EIA Completed.</p>	<p>April 2019</p>	<p><b>14.</b> Date for future review of policy/function.</p>	<p>During development of next annual OA</p>

\* It may be beneficial to give particular consideration to the Protected Characteristic groups in your impact assessment. The Protected Characteristics covered by the Equality Act 2010 are: Age, Disability, Race, Religion and Belief (including no belief), Sex, Sexual Orientation, Pregnancy and Maternity, Gender Reassignment, Marriage and Civil Partnership

**Privacy Impact Assessment**

**14.** Does implementation of the policy or procedure *necessitate* processing information about people who can be identified from that information or in combination with other information

**NO**  
**(No PIA required)**

Please summarise the categories, if not listed in 15, below

**15.** Does implementation of the policy or procedure *necessitate* processing sensitive or otherwise confidential personal data? Please highlight any affected categories

**Physical or mental health**

**Political opinions or membership of a trade union**

**Sexual life**

**Proven or alleged offences**

**Other – please Specify below**

**Race or ethnic origin**

**Religion and belief (including lack of belief)**

**Gender Reassignment**

**Information that could be used to commit identity fraud**

**N/A**

Please summarise any other information processed that would cause significant damage or distress to people if disclosed without their consent

We use a range of data across protected characteristic groups to inform our OA - as required by the SFC and Scottish Government. This helps us to create evidence based and realistic commitments. We also require this information to track change over time. This information is used for high level monitoring purposes only.

**16.** Have you agreed actions with the Head of Heritage and Information Governance to manage the data securely? If yes, please indicate the actions agreed

**Yes**

**Data minimisation**

**Staff training**

**Secure communication**

**Disclosure/data sharing protocols**

**No: to be agreed on [date]**

**Physical security controls**

**IT security**

**Retention policy**

**Secure destruction**

**17.** Date PIA Completed

**18.** Date for future review of policy/function

## Annex A: SFC Outcome Agreement Targets for 2019-20 to 2021-22

- \* denotes priority measure  
 \*\* denotes retention figures where the underlying proportion is likely less than 50, meaning projections are subject to greater change

	2017-18 baseline	2019-20 Projection	2020-21 Projection	2021-22 Projection	
<b>Scottish Government strategic priority: Access to education for people from the widest range of backgrounds, including implementation of the recommendations of the CoWA and addressing gender balance</b>					
<b>Measure 1: Articulation - The number and proportion of Scotland-domiciled learners articulating from college to degree level courses with advanced standing</b>					
Proportion of Scotland-domiciled HN entrants articulating with Advanced Standing	38.1%	46.3%	50.0%	51.4%	*
<b>Measure 2: Deprivation - The proportion of Scotland-domiciled undergraduate entrants from the 20% and 40% most deprived postcodes</b>					
2a: Proportion of SDUEs from 20% most deprived postcodes	11.1%	12.6%	13.7%	14.8%	*
2b: Proportion of SDUEs from 40% most deprived postcode	24.8%	27.4%	28.5%	29.6%	
2c: <b>Additional CoWA target:</b> proportion of <b>full-time first degree</b> SDUEs entrants from the 20% most deprived data zones	11.2%	12.6%	13.7%	14.8%	
<b>Measure 3: SHEP Schools - The proportion of Scotland-domiciled undergraduate entrants from the SHEP schools (i.e. schools with consistently low rates of progression to higher education)</b>					
Proportion of SDUE from SHEP Schools	6.1%	6.3%	6.7%	7.0%	
<b>Measure 4: Protected Characteristics - The proportion of Scotland-domiciled undergraduate entrants by different protected characteristic groups and care leavers</b>					
Male Proportion	57.1%	56.9%	55.8%	54.8%	
Female Proportion	42.9%	43.0%	44.0%	45.0%	
Under 21 Proportion	81.3%	80.0%	79.0%	78.0%	
21 and over Proportion	18.7%	20.0%	21.0%	22.0%	
Proportion – BME	11.9%	13.0%	13.0%	13.0%	
Proportion – Disability	14.3%	14.0%	14.0%	14.0%	
Proportion - Care Experience	0.7%	1.3%	1.6%	1.9%	*
<b>Measure 5: Retention by Protected Characteristics - The proportion of full-time first year Scotland-domiciled entrants from different characteristic groups returning to study in year two</b>					
Proportion MD20 retained	86.2%	89.2%	90.4%	91.2%	*
Proportion MD20/40 retained	88.6%	89.5%	90.6%	91.0%	
Proportion of Males retained	91.1%	91.9%	92.5%	93.0%	
Proportion of Females retained	93.7%	92.1%	92.6%	92.9%	
Proportion of Under 21s retained	93.5%	92.0%	92.5%	93.0%	
Proportion of 21 and over retained	86.5%	90.0%	90.7%	91.1%	
Proportion retained – BME	93.5%	92.1%	92.3%	92.9%	
Proportion retained – Disability	91.8%	92.4%	92.8%	92.8%	
Proportion retained - Care Experience	75.0%	90.0%	94.4%	90.9%	*

<b>Scottish Government strategic priority: High quality learning in a learning system which is seamlessly connected for the learner, including learning which prepares people well for the world of work, prioritising provision that meets known skills gaps in the economy</b>				
<b>Measure 6: Retention - The proportion of full-time first year Scotland-domiciled undergraduate entrants returning to study in year two</b>				
Proportion retained	92.2%	92.0%	92.5%	93.0%
<b>Measure 7: Satisfaction - students satisfied with the overall quality of their course of study in the National Student Survey</b>				
% Satisfaction	81%	85.0%	86.0%	86.0%
<b>Measure 8: STEM - The proportion of Scotland-domiciled undergraduate entrants to STEM courses</b>				
Proportion of SDUE to STEM courses	53.6%	55.0%	55.0%	55.0%
<b>Measure 9a: Graduate Destinations - The proportion of Scotland-domiciled graduates entering positive destinations</b>				
Proportion of graduates in positive destinations	N/A	N/A	N/A	N/A
<b>Measure 9b: Graduate Destinations - The proportion of Scotland-domiciled full-time first degree respondents entering professional occupations</b>				
Proportion of FT first degree respondents in professional occupations	N/A	N/A	N/A	N/A
<b>Scottish government priority: internationally competitive and impactful research</b>				
<b>Measure 10: The number of research postgraduate students</b>				
RPG students	725	800	800	800
<b>Measure 11: Total income from the UK Research Councils</b>				
RCUK income	£13,208,000	£17,945,000	£18,915,000	£19,885,000
<b>Measure 12: Total research income from all sources</b>				
Research income	£31,424,000	£37,000,000	£39,000,000	£41,000,000
<b>Scottish Government priority: effective knowledge exchange and innovation including excellent collaboration between universities and industry</b>				
<b>Measure 13: IVs - The number of SFC innovation Vouchers (IVs), Follow-on IVs</b>				
Innovation Vouchers (IVs)	9	10	10	10
Follow-on IVs	0			
<b>Scottish Government priority: ensuring provision of quality learning in Scottish higher education institutions, i.e. HE strategic futures, Quality Assurance and HE governance</b>				
<b>Measure 14: Carbon - Gross carbon footprint</b>				
Tonnes CO2e	18,789.0	18,346.0	17,100.0	17,050.0

\*



## Outcome Agreement between Heriot-Watt University and the Scottish Funding Council for AY 2019-20

### On behalf of Heriot-Watt University:

Signed:

Print name: PROFESSOR RICHARD A. WILLIAMS

Position: Principal and Vice-Chancellor

Date: 30/7/2019

Signed:

Print name: FRANCES CAIRNCROSS

Position: Chair

Date: 5/8/19.

### On behalf of the Scottish Funding Council:

Signed:

Print name: Karen Watt

Position: Chief Executive

Date: 29 July 2019