



**Heriot-Watt University
SFC Outcome Agreement 2020/21**

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Statement by the Principal and Vice-Chancellor

I am pleased to confirm Heriot-Watt University's commitment to this Interim Outcome Agreement, covering academic year 2020/21, between the University and the Scottish Funding Council (SFC) on behalf of the Scottish Government. Despite the considerable and on-going impact of the Covid-19 pandemic, we have continued to focus on setting and achieving ambitious targets in relation to widening participation in higher education coupled with practical plans to deliver significant outcomes.

We are in a changing and uncertain environment, but I believe that Heriot-Watt continues to be well placed to deliver our *Strategy 2025, Shaping Tomorrow Together*, launched in January 2019. 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 values-led approach and ambitions for the years ahead 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 increasing digital delivery. Growth in diverse entry routes including continued expansion of graduate apprentice pathways remains a priority.
- **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. Providing further international opportunities for students is a key distinctive element of the University and this is especially relevant as we partner with the Scottish Government in the 'Expo2020' hosted by Dubai and rescheduled to October 2021.

This Interim Outcome Agreement is focused on the University's activities in Scotland in 2020/21. It illuminates the distinctive contributions Heriot-Watt continues to make 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. Despite the considerable impacts of the pandemic, we continue to navigate through a challenging environment and take forward our strategy for the period to 2025, and I am confident we will further enhance our engagement and impact.

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

Consultation

There has been broad consultation on this interim Outcome Agreement across Heriot-Watt University.

The Deputy Principals for Education & Student Life, Research & Innovation, and Enterprise & Business, together with leaders of Professional Services, are closely involved in relevant sections. In addition, there has been substantive discussion and formal approval of the draft Agreement by both the University Executive and the Court.

Priority 1: Fair access and transitions

Throughout the Covid-19 pandemic, Heriot-Watt University (HWU) has recognised the importance of prioritising applicants and associate students, due to the time of year and impending UCAS deadlines and internal exams, so a programme of enhanced engagement was developed in conjunction with the Wellbeing team. Examples include:

- the development of a dedicated Sharepoint site for Associate Student Scheme students
- enhanced one-to-one contact with care experienced and estranged students
- group coffee mornings/afternoons for young and adult carers, to encourage engagement and support from peers as well as staff
- provision of enhanced support throughout the SQA results season and subsequent changes.

In addition, we moved our pre-entry transitional workshops for widening participation students online, and were redeveloped to fit into the university-wide programme of enhanced online registration, induction and freshers engagement.

Offer holder days and open days have also been pivoted to online engagement, providing dedicated sessions targeting widening participation groups. We provided individual support for vulnerable groups such as care and estranged students, alongside wider engagement around routes into university and how to transition to university as a college or mature student. We also held individual subject-based sessions aimed at advanced entry applicants in the autumn.

Our Brightest Watts Summer School, aimed at new S5 learners from WP backgrounds has also moved online. Our online offering was well received, and we have expanded this to a year-long programme of events. All our learners are really looking forward to when we will be able to welcome them on campus. This in-person and on-campus engagement is by far the most successful tool we have for raising aspirations and confidence that any learner can thrive in the higher education setting, and is significantly impacted by the pandemic.

Our Widening Participation Manager is also the current chair of the National Widening Participation Managers Forum, and has instigated collaborative engagement at a national level targeting both learners and staff to provide application support online which would more traditionally be provided through face-to-face engagement in individual schools and colleges. It is envisaged that this collaborative effort will continue post-pandemic.

We continue to support all partnership programmes in their efforts to provide additional support, including LEAPS, SWAP, the Hub for Success and the east of Scotland Pathways App. We were encouraged to note that our numbers of SWAP students almost doubled this year, increasing from 12 to 22.

We remain concerned that there are large numbers of students who are not able to engage with either WP teams or their school or college. In particular those younger learners who are at the pre-certificate level at high school. We also remained greatly concerned that existing government measures of disadvantage, such as SIMD, are not robust enough to quickly identify those learners who will become widening access learners due to the pandemic, in particular those who will lose family income and those who may suddenly become carers. Our teams will continue to investigate ways to identify and support these larger groups.

Priority 2: Quality learning and teaching

This section has been informed by two key reviews – the University’s Enhancement-Led Institutional Review (ELIR4), which took place in January, March and November 2020 (the latter being the rescheduled review); and the University’s annual institutional report on quality to the Scottish Funding Council. Additionally, the fundamental impact of the pandemic on the University’s approach to ensuring the quality of learning and teaching has been taken into consideration.

2.1 Enhancement Led Institutional Review (ELIR)

The University’s ELIR review was interrupted by the pandemic, but concluded in November 2020. In light of this, and in addition to the key themes specified for the original Review Visit (eg global Heriot-Watt, supporting student success, student partnership, use of data), the review considered the effectiveness of the University’s response to Covid-19 in terms of learning and teaching and the student learning experience.

The University was delighted with the results of its ELIR4, as communicated in the Draft Early Outcome Report (a draft of the full, detailed Technical Report was submitted to HWU for comment on 20 January 2021). The overall judgement was one of “effective” in terms of arrangements for managing academic standards and the student learning experience. The five commendations were a particular cause for celebration, as they highlight positively the key aspects of all that Heriot-Watt values in terms of learning and teaching and the student learning experience:

- Strategic approach to international and multi-campus provision
- Positive partnership working with Student Representative Bodies (SRBs)
- Global and connected approach to student support draft
- Institutional commitment to enhancing learning and teaching
- Mature and effective Institutional quality framework

The four recommendations were in areas which the University had already recognised as requiring development:

- Implement an institutional approach to the systematic access to and use of data
- Develop a consistent, institution-wide postgraduate research student environment
- Equity of access to Staff development opportunities across all campuses
- Address variation in the implementation of policy and practice across Schools

Once the Technical Report has been finalised, an ELIR Action Plan will be produced, which will be overseen by the University Committee for Learning and Teaching. The Action Plan will highlight the priority tasks for addressing the recommendations, and also include other areas that may merit University consideration, as identified within the Technical Report.

2.2 SFC Annual Report on Quality

The SFC annual report on quality provides an update on the University’s progress towards the Learning and Teaching Strategy and other current enhancement activities, as well as summarising the outcomes of key assurance processes such as Annual Monitoring, Periodic Review and external accreditation events. In addition, it outlines the institution’s response to student surveys including NSS and charts progress in strategically important areas such as retention. The 2020 report also featured an overview of the institutional response to the pandemic, both the emergency response for the remainder of the 2019/20 session and planning for 2020/21.

2.3 Learning and Teaching Academy

The Learning and Teaching Academy (LTA), which was launched in September 2019, has had a remarkable first year, and has demonstrated both its impact and value particularly in leading the institutional learning, teaching and assessment responses to the Covid-19 pandemic. New training and support programmes have been introduced, including new pathways to Advance HE Fellowship. Keynote events such as Learning and Teaching Week, Open Doors Day and the Inspiring Learning New Year Lecture have seen ever increasing multi-campus participation. Most importantly, the conversation and everyday practice around learning and teaching have become more vibrant, more confident, and more creative across the University.

The pandemic resulted in the LTA responding rapidly to the changing context, producing toolkits, practical guidance and offering tailored support sessions to enable staff to continue to support students at a distance. The Supporting Student Learning Online initiative, which was an immediate response, was followed by the Responsive Blended Learning framework, which provides the University's approach in 2020/21 to supporting both online and on-campus delivery, enabling a rapid switch between both depending on individual and in-country circumstances. This work continues into 2020/21, where the LTA's focus will remain on enhancing digital education capabilities, supporting creative collaboration across HWU's global community, and ensuring inspiring learning for every student.

2.4 2020/21 Approaches to Quality

The University's key quality processes – Approvals, Annual Monitoring and Periodic Review – will continue in 2020/21 in the format adapted due to the pandemic. These will be streamlined wherever possible, but sufficiently rigorous to maintain quality and academic standards. The effectiveness of the University's Responsive Blended Learning approach, ie the delivery of learning, teaching and assessment in 2020/21, will be a key area for monitoring and review this year. External Examiner and Chief External Examiners will again be asked to comment on the effectiveness of each School's response to mitigating the impact of Covid-19.

In 2020/21, there will be two key external accreditation activities for the Dubai Campus. We will be making a submission to the national Higher Education Classification and Rating Framework (HECRF), with the objective of retaining the maximum five-star (Outstanding) rating for the third year (HWU was only one of two institutions to retain this top award for a second year). The Dubai Campus will also begin the process of applying for UAE federal government accreditation by the Commission of Academic Accreditation (CAA)

2.5 Strategic Priorities: Pioneering in Education

The University continues to progress its Pioneering in Education strategic theme as part of Strategy 2025. A major refresh of the institutional taught portfolio is well underway, ensuring that global provision remains attractive to potential students and relevant to employers. A review of the academic architecture, which was postponed due to the pandemic, will ensure that the institutional framework provides flexibility, choice and pathways more suited to the individual learner.

Learning and teaching performance continues to be evaluated at the institutional, School and discipline level, focusing on data at undergraduate provision as follows: entry scores; retention/progression; attainment; widening participation; graduate first destinations (employability); student satisfaction (National Student Survey). The indicators are benchmarked nationally (UK) and incorporate previous years' performance for comparison purposes.

The ELIR recommendation on implementing a more systematic use of, and access to, data will guide further development in this area in order to help improve decision making, enhance the student learning experience and support student attainment. As per the ELIR recommendation, the University will, in the short term, prioritise the development of a more systematic approach to identifying students who may be disengaging from their studies.

In terms of strategic priorities, retention continues to be a key area, with a particular focus on a holistic approach to supporting student success, as outlined in the University's Retention Strategy. There was a modest improvement in retention (Y1 to YG UG progression) to 89.7% in 2018/19, with evidence of further, more significant improvements in the two subsequent years; internal monitoring indicates improvement to 92.5% and 95% respectively in 2019/20 and 2020/21.

The global Student Successor Advisors (SSAs), a three-year pilot to provide support to students at risk of leaving, have had a significant role in this improvement in retention. In 2018/19 – the first year of offering this type of direct support from the SSAs – 71% of students who were supported by the SSAs (having been referred by Personal Tutors) were no longer considered to be at risk of leaving the University. The SSAs were commended in the University's ELIR as evidence of positive steps to strengthen the global coherence and integration of student support services.

Priority 3: Learning with impact

As highlighted in HWU's Outcome Agreement 2019/20-21/22, professional relevance, effectiveness and readiness are key qualities of a Heriot-Watt education in all subjects. The majority of degrees 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. STEM provision currently accounts for ~55% of student numbers in Scotland at both undergraduate and taught postgraduate levels.

3.1 Graduate Apprenticeships

Heriot-Watt delivers a substantial share of the Scottish sector's Graduate Apprenticeship programmes. Around 500 apprentices have been recruited since 2017: 27 (2017), 163 (2018), 174 (2019), 140 (2020). HWU now offers eight Graduate Apprenticeship Frameworks:

- Engineering: Design and Manufacture
- Software Development for Business
- IT Management for Business
- Civil Engineering
- Construction: Built Environment
- Data Science
- Business Management
- Instrumentation, Measurement and Control

Since 2018, around 80 employers have engaged with these programmes annually, and across the four cohorts at total of 176 companies are now supporting Graduate Apprentices at Heriot-Watt. In 20/21, in response to the pandemic, a January intake has been introduced to give flexibility to employers who were impeded from participating in the traditional September starts, and campus attendance was shifted to online delivery. For the future, recruitment is expected to continue, as a minimum, at around 200 GAs per year on the existing Frameworks, subject to funding. Indeed, student numbers could increase if additional Frameworks aligned with HWU's portfolio become available.

3.2 Skills and Employability

The Learning and Teaching Strategy 2018-2025 confirms the institutional commitment to "employability", with the aim that by 2025, the HWU Curriculum will be *Globally and Locally*

Applicable; Research-Informed' Professionally and Practically Relevant. The HWU Graduate Attributes (*Professional, Specialist, Creative, Global*) will be core to delivering this strategy. In addition, the University's seven-year strategic plan, *Strategy 2025*, highlights the institution's commitment to develop resilient, emotionally intelligent and future ready graduates who are highly sought after by employers.

The Careers and Graduate Futures division is transforming the provision of a professional, high quality careers guidance and information service and is collaborating with academic staff on curriculum design. Service Level Agreements (SLA) have been established with each School to support the development of careers and employability throughout the student journey at HWU, with the aim of engaging our students to develop the skills so that they develop self-efficacy and can compete to secure a graduate job and contribute to society.

For 2020/21, Careers and Graduate Futures will build on the work undertaken with the School SLAs to develop a more equitable offer to students which spans their entire period of study. A nine-month project has been developed to support early career graduates (up to two years after graduation) by providing these early graduates with access to 1:1 support and tailored workshops to help them navigate the current employment market which has been impacted by the pandemic. After the project completion date, the intention is to develop a sustainable model for supporting early graduates in the job market.

Careers and Graduate Futures, Development and Alumni and academic staff will continue to collaborate in providing programmes which develop personal and professional skills alongside knowledge and technical skills and which help students to understand how they acquire these skills, apply them and finally articulate these.

Heriot-Watt continues to perform strongly in terms of graduate first destinations for UK-based undergraduate students. In 2016/17, 95.5% of our full-time, first degree graduates were in employment or further study (placing HWU at 12th in our UK benchmark group, and 6th in Scotland), with 79.3% of those who are in employment being in graduate level employment (up from 76.3% in 2015/16, placing HWU as 2nd in Scotland). With the change to the Graduate Outcomes Survey, HWU's forecast figures for 2018/19 leavers (Scottish-domiciled) are 97% in a positive destination, with 72% in professional employment. Heriot-Watt was named best in Scotland (and 17th in the UK) in the *Times and Sunday Times Good University Guide 2019*, for graduate salaries six-months after graduation. The University's key Strategic Performance Indicator within Strategy 2025 is to be in the top decile for Graduate Outcomes.

Priority 4: Student participation and engagement

Heriot-Watt University has a long and proud tradition of student engagement and in working in partnership with its three Student Representative Bodies in Scotland, Dubai and Malaysia. Representative structures have continued to evolve in all campus locations, with the three Student Presidents providing the inter-connections between them.

4.1 Student Partnership

The University's positive partnership working with its Student Representative Bodies (SRBs) was commended in the recent ELIR Review; indeed, HWU has been commended in all four ELIRs for its partnership with students and the engagement of students in institutional decision-making.

The University effectively engages with its SRBs, involving them in active consultation and decision-making processes. They have built, over a period of time, open and collegial relationships between senior management and student officers which demonstrate mutual respect, leading to increasing effective student representation and in turn effective enhancement of the student learning experience.

The single, global Student Partnership Agreement (SPA) provides the focal point for collaboration between the three SRBs and the University. The 2020/21 SPA, which retains the structure of the two preceding versions of Academic, Wellbeing and Community, includes the following key initiatives:

- Continue the “Big Feedback Conversation” (an initiative undertaken in collaboration with the Learning and Teaching Academy), with emphasis on Responsive Blended Learning and its effects on the feedback culture within the institution;
- Develop a Global Postgraduate Taught Representative Structure;
- Enhance the monitoring of ethnicity attainment across global HWU;
- Embed sustainability into the curriculum;
- Introduce a series of Enhancement Lectures, comprising extra-curricular lectures or webinars on topical or societal issues, drawing on institutional research and knowledge, or with a focus on professional development and becoming a rounded graduate, eg Black Lives Matter movement, fast fashion, enterprise, blue circular economy, financial wellbeing;
- Introduce a Global Virtual Conference open to all HWU staff and students as part of Wellbeing Week/Global Mental Health Awareness Day.

4.2 Internal Student Engagement Surveys

Student surveys continue to be an important mechanism in gaining the views of the wider community on their educational and general experiences. In response to the pandemic, HWU changed its approach. We cancelled our two internal surveys scheduled for spring 2020: Annual Survey, covering all student groups except NSS), and semester 2 Course Feedback Survey (module level), and withdrew our participation in PTES 2020. In preference to these, and in common with many other HEIs, HWU ran its own “Staying Well, Studying Remotely” global survey (covering all foundation, UG and PGT students across all modes and locations) to gain an insight into student wellbeing during lockdown as well as the student experience of learning, teaching and assessment at distance.

An adapted survey process is continuing in 2020/21: a Student Survey Framework has been endorsed by the University Committee for Learning and Teaching, which introduces more frequent surveys throughout the semester (after week 1, mid-semester). This has been developed in collaboration with the three SRBs, and enables action to be taken quickly and to benefit the current cohort of students. The end of semester survey has been retained, but in a wholly revised format and with much higher engagement (the semester one survey response rate of c29% is over twice the average rate achieved historically). The internal Annual Survey, which was due for a major review, will again not be run in 2021 and the University will not participate in PTES 2021; both have been replaced by the more pertinent and agile internal pulse surveys.

4.3 External Student Engagement Surveys

NSS 2020 was already in progress when the UK lockdown occurred in March 2020, and the University will continue to participate in NSS 2021. The University’s improved position in NSS 2019 was broadly maintained in NSS 2020, amid an overall decline in scores across the sector for both overall satisfaction and average % agree. Key figures in relation to our institutional performance are as follows:

- Average % Agree score (across 27 questions): 76.5%, ranking us 86th in the UK (marginally down from 76.9% and 83rd in NSS 2019).
- Overall Satisfaction: 84.4%, ranking us 45th in UK (down from 85.5% and 35th in NSS 2019)

The two lowest scoring questions in NSS 2020 were Assessment and Feedback (65.7%) and Student Voice (72.8%). The University Committee agreed, in September 2020, that these would be the two key areas of focus for the institution in 2020/21, rather than the previous approach of trying to progress six to ten different action areas. This approach recognises the ongoing impact of Covid-19 and the need to continue to adapt and respond.

The University participated in the 2020 Postgraduate Research Experience Survey (PRES). In contrast to 2019's PRES participation rates of 107 HEIs, in 2020, only 45 UK HEIs participated in the 2020 survey and results were returned for only 38 of those. We saw a significant increase in participation in 2020, with 366 HWU PGR students completing the survey (34% response rate), up from 209 in 2019.

The University was delighted with the improved performance in PRES 2020, reflecting the extent to which the Research Degrees Committee has focused systematically on enhancing the PGR student learning experience. The key findings from PRES 2020 are as follows:

- Overall satisfaction score of 76.2% (up 5.35% from 2019)
- The results from every section of PRES 2020 saw an increase on our 2019 results
- Four sections returned highest ever results since HWU first participated in PRES in 2013: Supervision, Research Skills, Professional Development and Progression and Assessment (the latter being HWU's lowest scoring area in PRES 2019)
- The highest areas of satisfaction were: Supervision; Research Skills; Professional Development
- Supervision had the largest improvement compared to 2019 results, rising up 9.6%

The Research Degrees Committee, which has responsibility for PRES and actions taken in response, has introduced an action planning process similar to that used for taught surveys by the University Committee for Learning and Teaching. PGR representation was strengthened at all five HWU campuses in 2019/20, with a specific focus in the remit of the Student President at the Scottish Campuses from 2020/21.

4.4 Wellbeing and Support

Wellbeing and support have been highlighted as particular areas of concern in the pandemic-related student surveys. As a consequence, the Personal Tutoring system has been substantially revised for 2020/21 and is supported by a new Personal Tutoring and Supporting Students SharePoint site, which is designed for both staff and student users. All students now have a minimum of three "contact points" per semester, which can be held in a variety of different ways, including using MS Teams to have either one-on-one consultations or group discussions. The pilot of the aforementioned Student Success Advisors was extended for a third year into 2020/21. The SSAs have provided critical support to students during Covid-19 and have had key roles in 2020/21 preparations, particularly induction arrangements, but also in enhancing online support and advice.

Priority 5: Equalities and inclusion

The Covid-19 pandemic has created an environment where equality, diversity and inclusion (EDI) has been front and centre to our work. Most starkly it has highlighted where we have lacked capacity to address EDI as part of our core work. We know that the work we have taken forward to create Responsive Blended Learning puts EDI at the centre of provision and we know that we want to make sure we retain that EDI primacy in our student offering as we go forward, as part of our work to support the wider Equality Outcomes and Mainstreaming Report.

5.1 Action to tackle inequalities

We are in the process of developing new Equality Outcomes for April 2021 alongside our Mainstreaming Report, publishing staff and student data and pay gap information covering gender, disability and ethnicity. Alongside these Equality Act requirements we are working work refresh our approach to the British Sign Language Local Plan. As we develop these areas we will look to address our Gender Action Plan (GAPs) commitments and refresh in line with the SFC position. While the deadline for the GAPs has been extended indefinitely there is learning from the approach that can inform our next steps.

These areas form the basis for our approach EDI, supported by the development of a Global EDI Strategy that articulates the University's Strategy 2025 through an EDI prism. These structural mechanisms support improved approaches to embedding EDI throughout HWU into functions and service areas that support the student experience. We work closely with our student community to be responsive to need and expect to introduce an annual EDI Student Summit from 2021.

In operational areas, the University is:

- an active partner in the Fearless Edinburgh Partnership, which supports a partnership approach to addressing Gender Based-Violence (GBV) and has provided a template model for similar partnerships across Scotland
- committed to adapting the Equally Safe in Higher Education Toolkit and have part-funded a pan-Edinburgh rape crisis post
- a Steering Group member of the SFC funding Race Project, taking part in pilot senior manager training that will support roll-out from March 2021
- taking a visible and active role in supporting initiatives to address GBV and racial harassment, a key feature of our work programme coming under the responsibility of the Equally Safe in Higher Education Working Group
- ensuring access to information and support through a variety of platforms, supporting diversity of need and access.

5.2 Publication of Equality Impact Assessments

The University provides a range of online support for conducting Equality and Privacy Impact Assessments (EPIA) with a requirement for new and refreshed policies and procedures to have been through an EPIA before formal approval. We are developing a process for publishing policies with EPIAs, including ensuring their accessibility.

5.3 Improving Management Information

The University regularly publishes information on our student intake linked to protected characteristics and collects detailed information in-house. As part of our Global EDI Strategy development, the University is working to improve management information in this area.

5.4 Exploring how protected characteristics impact on core measures

We are conscious that we need to do more to understand how protected characteristics impact on student experience and outcomes, and we are addressing this as part of the development of our Equality Outcomes.

Priority 6: High quality research and innovation

The University's research and enterprise strategy has been designed to place Heriot-Watt at the forefront of academic endeavour that aims to make an outstanding impact on society. We continue to address crucial world issues through our interdisciplinary approach and close collaboration with business and industry.

6.1 HWU Research & Enterprise Strategy 2025 Priorities

- Launching our Recovery Prospectus and engaging with key stakeholders to create bold and ambitious new integrated interventions that will position the University at the forefront of global economic regeneration through solving global challenges, e.g. Decarbonisation.
- Identifying areas of research strengths from across all schools and creating a framework for transdisciplinary collaboration through the creation of new research support structures (Global Research Institutes) to provide the foundations for growth in research income.
- Building new strategic partnerships with key stakeholders. Raise the reputation of the University and generate new opportunities to support multi stranded collaborations supporting, talent development, research and innovation.

6.2 2020/21 Progress on Priorities

The University's Recovery Prospectus¹ was launched in September 2020, directly building on our Strategy 2025 which places research excellence, partnership and accelerated commercialisation at the heart of our approach, drawing on our research strengths and supporting our students, researchers, businesses and communities to recover and prosper. The Recovery Prospectus catalysed a new integrated approach to drive transformational change.

Maximising the value of our research excellence is at the core of our Strategy 2025 and our stated intention to reimagining recovery. Through our research initiatives we continued to deliver global impact in 2020/21.

The University has focused our research strengths and commercialisation activities on enabling sustainable economic growth and supporting the green recovery. Our Global Research Institutes and Frontier Research Areas were shaped to support the creation of new high-growth, knowledge-driven economic sectors – creating the products and solutions of the future. Areas of focus include earth and marine sciences (Lyell), robotics and automation (National Robotarium), health technologies (Centre for Regulated Bio-Manufacture), decarbonisation (in development) and energy transition (in development).

The University has submitted a £20M grant proposal to host the UK national centre for industrial decarbonisation, which will place Scotland at the forefront of a green recovery. Building on this we will create a Global Research Institute (GRI) in **NetZero** undertaking world-leading research to enable society to achieve NetZero Carbon emissions. This alignment of our GRI strengths will enable us to realise our ambition to pioneer a sector leading global approach to environmental sustainability.

For the **National Robotarium**, we secured an extension grant to our Offshore Robotics for Certification of Assets Hub and leadership of a new research hub in Trustworthy Robotics.

In **Medical Technology**, HWU secured £3.7M from the Advanced Manufacturing Challenge Fund to create the Medical Device Manufacturing Centre and submitted a £34.5M bid in November 2020 to construct a Centre for Regulated Bio-Manufacture (CRBM) on our Science Park.

¹ <https://www.hw.ac.uk/documents/recovery-prospectus.pdf>

Forging new collaborative partnerships with industry, public sector organisations and other universities was at the heart all these funding bids. In 2020/21 we have secured a new strategic business partner in the DAR Group. Recently eight new partnerships were agreed as part of the CRBM proposal.

Partnership in Action Case Study: CRBM

Industry engagement at senior executive level was a priority for the CRBM. The proposal has the support of major organisations, including IQVIA (Scotland's largest employer in Life Sciences) closely followed by Millipore (Merck UK), Catalent, Hyaltech Zeiss, Charles River Labs, SNBTS, BioCity, SAS, and CompliancePath (relocating to HW). These industry partners committed to a contribution of more than £4.3m to support the success of the centre in turn addressing their barriers to growth, primarily lack of talent and the need for digitisation/automation.

SAS agreed to £2m of support through their world-leading analytics system and expert personnel to improve processes and actions of the CRBM and speed the time to delivering regulatory compliant innovations that can scale to deliver genuine new value and approaches.

Aligned to the research themes described above, and despite the Covid-19 pandemic, we created two spin-outs in 2020/21. Through our Enterprise engagement activity, we have a pipeline of over 30 potential spin-out and start-ups.

Spin-out Profile: IntelliPalp Dx

IntelliPalp Dx aims to revolutionise prostate cancer screening by providing more accurate testing at an early stage, leading to reduced patient anxiety and more efficient diagnosis.

During initial trials with patients, it has accurately detected areas of the prostate with clinically significant cancer. Surveys conducted during the device's trials have also found patients prefer the use of ProstaPalp™ over existing testing methods.

The Team have recently secured a Royal Academy of Engineering Fellowship, featured as a Converge finalist and secured grants from CENSIS and Scottish Edge. A licence was recently agreed under challenging circumstances involving multiple parties.

Spin-out Profile: Alana AI

Alana AI is a conversational AI company, the technology and expertise of the team allows functionality beyond a simple voice assistant, providing companionship, showing understanding and allows exploration and discovery of new information. While existing task-oriented AI assistants can participate in a question-answer dynamic, they can't perform any of these other vital functions.

The team created Alana to help build Conversational AI systems for business, medical and home care applications. £565k has been raised from high-net-worth investors in London at £6m pre-money valuation.

Despite the disruption caused by the pandemic, most of our research activities have continued. As noted in our report to SFC on utilisation of our grant, we have continued to support our research through the ongoing provision of additional administrative support. This has paid a dividend in our ability to continue to secure research grants.

In the calendar year 2020, we have been successful in winning £57M in new research grants, the largest proportion of which was in Engineering and Physical Sciences. This is the highest ever 12-month total for the university.

Priority 7: Meeting future skills needs

With support from the SFC, we delivered a new Skills Scotland Scholarship programme to more than 250 working professionals living in Scotland. We offered fully funded courses specifically developed to help businesses improve their productivity through the upskilling and reskilling of key employees. During lockdown, employees studied online and were provided with full access to our state-of-the-art online learning platform. The scholarship offered masters-level courses from our MBA programme, across a range of key disciplines including:

- Delivering Successful Projects
- Leadership, Theory and Practice
- Financial Decision Making
- People, Work and Organisations
- Strategic Marketing

Another key lever for supporting this priority is our successful Graduate Apprenticeship programme, supporting over 500 students across a wide range of Scottish businesses since 2017. This underlines HWU's ability to support Scottish business and the wider economy, with ongoing importance during the pandemic and the future economic recovery.

Allan Colquhoun, University Liaison & Emerging Technologies Manager, Leonardo:

Leonardo has worked with Heriot-Watt on their Software Graduate Apprenticeship programme since its inception in 2017, helping our staff to gain work-based degrees in Software Engineering. This will expand to cover Business and Engineering degrees from 2020. Our collaboration with Heriot-Watt has also utilised the 'Upskilling Scotland' micro-masters, which provides valuable upskilling and reskilling to our employees in this time of dramatic change.

We look forward to exploring new avenues of collaboration with Heriot-Watt University, as they continue to pioneer learning provisions that directly support our business needs.

In addition, and in response to the pandemic, the University launched our 'Future Made for Success' programme, which gave postgraduate students access to virtual placements, scholarships and bespoke careers support.

Priority 8: Responding to the climate emergency

8.1 Strategy development

To lead the development and implementation of sustainability objectives from Strategy 2025, in 2020 the University established a new Global Environmental Sustainability Group (GESG), chaired by the Associate Principal for Global Sustainability and reporting directly to the University Executive. In 2020/21, the GESG is delivering a pioneering new Global Environmental Sustainability Strategy (GESS), focussed not only on management of the University's operational sustainability impacts but on optimising and enhancing the institution's broader society-level environmental sustainability outcomes, achieved via its roles across research, teaching and global advocacy.

The University's contribution to addressing the climate emergency will feature prominently within the new GESS, with supporting delivery mechanisms including a Net Zero Plan which will fully define the University's ambitions and targets in relation to achieving net zero across its global operations.

8.2 Emission reduction progress

The table below presents the University's greenhouse gas emission baseline data and emission reduction performance for our Scottish campuses, as reported within annual Public Bodies Climate Change Duties (PBCCD) submissions. The data relates to the Scotland campuses, following the existing reporting boundary defined within the Carbon Management Plan (CMP) 2015/16-2019/20, and includes emissions associated with the operation of University buildings, business travel, management of wastes and water consumption. The Net Zero Plan will extend the University's reporting boundary to include emissions associated with the operation of the Dubai and Malaysia campuses.

	(Baseline) 2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Target emissions (tCO ₂ e)	21,583	20,936	20,288	19,641	18,993	18,346
Actual emissions (tCO ₂ e)	21,583	20,414	20,059	18,789	17,474	14,092
CMP target reduction (%)	–	3.0	6.0	9.0	12.0	15.0
Actual reduction (%)	–	5.4	7.1	12.9	19.0	34.7

Annual emission performance – Scotland campuses

In addition to the impact of University carbon reduction projects, attainment of the CMP target has been greatly assisted by the decarbonisation of UK grid electricity in recent years, while 2019/20 saw additional significant reductions in emissions resulting from the Covid-19 pandemic, chiefly from reduced building energy consumption and business travel.

8.3 Priorities in 2020/21

The University's priorities in 2020/21 include the finalisation and launch of the Global Environmental Sustainability Strategy and associated delivery plans and programmes. Our Net Zero Plan is under development in 2021 and will succeed the CMP, bringing further focus to global climate change action and new targets commensurate with the attainment of Paris Agreement and national emission reduction objectives. We are investigating the scope for partnership working in support of key decarbonisation opportunities, for example by engaging with local and regional partners in relation to the potential for local zero carbon energy masterplans / zero carbon heat.

The GESS will serve as a framework for the implementation of new programmes across other fundamental areas of sustainability performance, including biodiversity, sustainable travel and circular economy / resource use, where initiatives will in many cases bring additional emission reductions. In parallel with the implementation of these programmes, the University is developing new sustainability performance monitoring and reporting mechanisms aligning with the UN Sustainable Development Goals.

University Outcome Agreement Impact Framework: Supporting Data

Note: EB / JC / SFC = data to follow from Planning Team or SFC

Measure	From SFC (unless flagged)					Actual	Forecast
	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
A Number of Scottish-domiciled Undergraduate Entrants	1,175	1,217	1,372	1,425	1,426	1,446	1,241
B Total number of Scottish-domiciled HN entrants from Scottish colleges to undergraduate programmes	282	306	330	294	288	315	316
Number of Scottish-domiciled HN entrants from Scottish colleges to undergraduate programmes with Advanced Standing	113	133	143	112	137	136	137
Proportion of Scottish-domiciled HN entrants from Scottish colleges to undergraduate programmes with Advanced Standing	40.1%	43.5%	43.3%	38.1%	47.6%	43.2%	43.3%
C COWA measure: Total number of Scottish-domiciled full-time first degree entrants	1,153	1,209	1,349	1,371	1,416	1,446	
COWA measure: Number of Scottish-domiciled full-time first degree entrants from the 20% most deprived areas	125	119	114	153	154	164	
COWA measure: Proportion of Scottish-domiciled full-time first degree entrants from the 20% most deprived areas	10.8%	9.8%	8.5%	11.2%	10.9%	11.3%	14.4%
D Number of Scottish-domiciled undergraduate entrants with care experience	1	1	5	10	13	16	15
Proportion of Scottish-domiciled undergraduate entrants with care experience	0.1%	0.1%	0.4%	0.7%	0.9%	1.0%	1.2%
E Number of Scottish-domiciled full-time first year entrants	1,371	1,142	1,200	1,333	1,407	SFC	
Number of Scottish-domiciled full-time first year entrants returning to study in year 2	1,254	1,039	1,078	1,229	1,266	SFC	
Proportion of Scottish-domiciled full-time first year entrants returning to study in year 2	91.5%	91.0%	89.8%	92.2%	90.0%	SFC	EB
F The difference (+/-) from the individual institution benchmark figure for students satisfied with the overall quality of their course of study in the National Student Survey	4	4	-2	-3	+ 2.1	+ 1.8	+ 2.0
G1 The number of Scottish-domiciled undergraduate qualifiers responding to the Graduate Outcomes survey				523			
The number of Scottish-domiciled undergraduate qualifiers responding to the Graduate Outcomes survey in a positive destination				505			
The proportion of Scottish-domiciled undergraduate qualifiers responding to the Graduate Outcomes survey in a positive destination				96.6%	Forecast: <97% *		
G2 The number of Scottish-domiciled full-time first degree qualifiers responding to the Graduate Outcomes survey in employment				450			
The number of Scottish-domiciled full-time first degree qualifiers responding to the Graduate Outcomes survey in employment in professional employment				321			
The proportion of Scottish-domiciled full-time first degree qualifiers responding to the Graduate Outcomes survey in employment in professional employment				71.3%	Forecast: <72% *		
H Number of Scottish-domiciled Undergraduate Qualifiers	885	989	1,139	1,059	1,061	1,133	1,100

See below for 19/20 and 20/21 Estimates

* 18/19 Grads are being surveyed now - impact of Covid is unknown (but likely to be lower than previous year)

Internal Retention Data

FT ScoDom UG Entrants	1,221	1,352	1,410	1,757	1,495
Number Returning	1,053	1,188	1,164	1,536	1,348
% Returning	86.2%	87.9%	82.6%	87.4%	90.2%

SFC Figures (from above)

FT ScoDom UG Entrants	1,200	1,333	1,407
Number Returning	1,078	1,229	1,266
% Returning	89.8%	92.2%	90.0%

Difference in % Returning + 3.6% + 4.3% + 7.4%

EB Estimated SFC % Returning for 19/20 and 20/21:	92.5%	95.0%
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Heriot-Watt University – University Innovation Fund Plan Update:

In 2020 the University consolidated its business support activities through our 'Prospectus for Recovery and Future Growth' to take a proactive approach to stimulating demand (**PA1**). The Prospectus for Recovery and Future Growth sets out our commitment to inclusive and sustainable recovery in all of our locations and articulates how we will work to maximise opportunities for innovation, develop impactful solutions, and deliver socio-economic benefits, integrating and aligning many of the objectives set out in our UIF plan in an outward facing and business friendly approach.

The Prospectus was shaped by four primary commitments which:

- **Aligning our research to inclusive economic growth and green recovery,**
- **Focusing on the skills and expertise we need for the future,**
- **Inspiring our young people to be ambitious, resilient, and enterprising; and**
- **Engaging our global networks, to drive transformative recovery**

Within the UIF, we have continued 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. Heriot-Watt has continued to support the pan Scotland theme of Blue Economy, supporting the Highlands and Islands Strength in Places Fund (MAXIMAR) and also the Islands for Net Zero within the Island Deal.

Case Study: Celestia

Through Interface, working with SE/SDI, Heriot-Watt University was introduced to Celestia Technologies who subsequently identified collaboration and co-location opportunities with Heriot-Watt. Celestia UK¹, which specialises in the advancement of antenna systems used for tracking satellites, is now making Heriot-Watt University's Research Park its permanent base in Scotland. The decision follows a five month residency at the University's Global Research Innovation and Discovery (GRID) facility. Celestia Technologies Group UK Ltd (Celestia UK) will establish an innovative project to develop a fully electronic scanning antenna for use with satellite-based aircraft Wi-Fi applications after it received a £2.5m R&D award from Scotland's national economic development agency. A total of 18 jobs will be created in Antenna technologies, Software Defined Radio, Radio Frequency Engineering and System Design.

Throughout 2020 we have continued to simplify the commercialisation process (**PA2**) with a new IP Policy completed and approved by Executive and Court. The policy sets out a revised policy with more flexibility and is accompanied by a set of procedures and handy guides.

Post pandemic we have further focused our, innovation and commercialisation activities on enabling sustainable economic growth and supporting the green recovery (Greater Innovation, **PA 3**) through alignment to our Global Research Institutes and other areas of research excellence. This will support the creation of new high-growth, knowledge-driven economic sectors – creating the products and solutions of the future. These span topics such as earth and marine sciences (Lyell), robotics and automation (National Robotarium), medical technologies (Centre for Regulated Biomanufacture), decarbonisation (Industrial Decarbonisation Research Innovation Centre) and energy transition (in development). In each of these topics we have currently secured or are pursuing significant business partnership and funding opportunities.

Jointly with business we submitted a £20M bid to host the UK national centre for industrial decarbonisation under consideration. Building on this we will create a Global Research Institute in **Net Zero** undertaking world-leading research to enable society to achieve Net Zero Carbon emissions. This alignment of our GRI strengths will enable us to realise our ambition to pioneer a sector leading global approach to environmental sustainability. Linked to our GRI in Net Zero Carbon we have the ambition to further drive change through creating an enterprise accelerator programme to support start-up companies with radical approaches to carbon innovation.

In **Medical Technology** we recently submitted a £34.5M bid in November 2020 to construct a Centre for Regulated Bio-Manufacturing on the Science Park.

Forging new collaborative partnerships with industry, public sector organisations and other universities sits at the heart all of these funding bid. In the current funding regime partnership with business is critical to their success.

Partnership in Action Case Study: CRBM

Industry engagement at senior executive level was a priority for the CRBM. The proposal has the support of major organisations, including IQVIA (Scotland's largest employer in Life Sciences) closely followed by Millipore (Merck UK), Catalent, Hyaltech Zeiss, Charles River Labs, SNBTS, BioCity, SAS, and CompliancePath (relocating to HW). These industry partners committed to a contribution of more than £4.3m to support the centre in addressing their barriers to growth, primarily lack of talent and the need for digitisation/automation.

SAS agreed to £2m of support through their world-leading analytics system and expert personnel to improve processes and actions of the CRBM and speedup the time to delivering regulatory compliant innovations that can scale to deliver genuine new value.

The Business Incubator at Edinburgh Business School within Heriot-Watt University expanded further supporting a total number of resident start-ups to 14 (Entrepreneurialism, **PA 4**). Following a competitive application process, businesses ranging from specialists in sensor technologies and food waste recovery to student bedding providers were offered a safe harbour to work on their business plans and develop their products. We continue the development of further "MSc / MBA with Enterprise" in collaboration with our Business School and are developing our online programmes.

The Innovation Challenge, internal funding competition, is designed to support ideas with the potential to make transformational change. The Challenge is supported by both Santander Universities, the ambitious strategic initiative, run by Santander UK, which focuses on entrepreneurship, employability, and education, plus the Innovation Impact Fund established by former Chancellor Bob Buchan, to support student and recent graduate start-up businesses with the most innovative and commercially viable ideas.

In total, there are 151 staff and students engaged in entrepreneurial activity. Innovation Challenge attracted submissions from 21 prospective student start-up companies and 7 potential staff spin-outs. 4 projects, involving students and senior academics are progressing through the Lean Launch Programme and 2 projects are progressing through the Scottish Enterprise High Growth Spin-out Programme.

The University currently generated 4 spin-outs:

- IntelliPalp Dx, which has developed a device to provide more accurate early stage testing for prostate cancer, aimed at delivering improvements in diagnosis techniques. Initial trials suggest the technology reduces patient anxiety about prostate examinations.
- Clean-tech company Kenoteq – which launched a building brick made from 90% recycled construction and demolition waste. The K-Briq produces just a tenth of the CO2 emissions of a traditional fired brick, uses less than a tenth of the energy in its manufacture and can be made in any colour.
- Alana AI, has developed pioneering artificial intelligence (AI) software that that can understand and respond to the human voice.
- Solariskit which has developed a low-cost, flat-packable solar thermal collector capable of converting sunlight directly into heat in the form of hot water. It has significant potential to improve the lives of millions of people in the developing world by providing clean, affordable energy while reducing carbon emissions.

Phase 2 of Future Made for Success, designed to support our graduates as we progress from the present crisis to a period of recovery, has engaged approximately 47 Masters/PhD students in Entrepreneurial activities. In collaboration with Industry, through this 6 week programme, solutions are examined in the context of customers, competitors, markets, and commercial feasibility alongside developing an understanding of multiple areas of business – ultimately allowing the students to develop valuable entrepreneurial skills for their future careers.

We are the only Scottish University to lead two UIF Priority Actions (PAs) - **PA 5, Internationalisation** and **PA 7, Diversity and Equality**. Work on the UIF International theme (**PA 5**)

has been significantly hindered due to Covid-19. Although there is limited progress on specific initiatives to report we have had some good engagement with Scottish Government, SDI and US to explore greater engagement and partnership working around Connected Scotland's activity. We discussed opportunities to work with Connected Scotland on increasing Research and Knowledge exchange (UIF activity) and specifically supporting the British Council conference. We also engaged with Scottish Government in relation to holding an Arctic conference in Edinburgh in September 2020. However, many of these events that we planned to participate in over the last year have not taken place.

Heriot-Watt University has continued to maintain and expand its international research collaborations throughout the pandemic with 34 new GCRF projects in 17 developing countries and supporting 75 new international partnerships.

Inclusive Growth & Societal Impact (PA 6): Our public engagement activities have continued to grow. In line with our vision to inspire and understand the mutual needs of our global – local communities and provide measurable pathways to global impact through our pioneering research, we are currently supporting our academics to drive culture change and mainstream dialogue between all our communities through media activity and news releases, of which 120 have been published, alongside 35 REF case studies and research publications and outputs, of which there are 1,781. Coverage of releases have achieved 598k reads in The Conversation - an online platform offering informed commentary and debate on the issues affecting our world, encompassing technology, science, health and supporting the development of public understanding of our research impacts.

In 2020 we held 18 events via the Festival of Research and Enterprise and added to the 258 conferences held by the University, further developing our institutional culture, and embedding the importance of public engagement.

As UIF lead on Diversity and Equality (**PA 7**) in collaboration with Strathclyde and Dundee Universities a Diversity on Boards pilot was developed where delegates learned to recognise diverse opinions and understand how to achieve more diversity amongst non-exec directors.

Case Study : Diversity on Boards pilot

Attendees learned to recognise diverse opinions and understand how to achieve more diversity amongst non-exec directors. The session was delivered jointly by Converge Challenge and Women on Boards with Networking event afterwards which led to engagement with women Non-Executive Directors expressing interest in spinout opportunities. Heriot-Watt spin-out Intellipalp DX participated in a parallel stream for spinout companies.

Delivery of the pilot this was delayed by COVID while it was converted to an online version. We plan to roll this out more widely across all Scottish UIF HEIs in 2021.