

## Research Wales Innovation Fund Strategy 2020/21 – 2022/23

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### Section A: Overview

#### 1. Strategic ambitions

Research, innovation and civic mission are central themes of Cardiff's The Way Forward (TWF) 2018-23 strategy, now recast to ensure Cardiff plays an active part in supporting Wales' revival and renewal from Covid-19, aligned to delivery of the seven goals of the Well-Being of Future Generations (Wales) Act 2015 (see Section 8).

#### Cardiff's Innovation Strategy: Central Principles

The following principles underpin our three-year strategy, aligned to delivering 'Innovation for All', a central theme within Cardiff's TWF 2018-23 strategy:

- Supporting innovation and civic mission aligned to TWF 2018-2023 priorities and the Well-being of Future Generations (2015) Act (as exemplified throughout this document);
- Placing research excellence at the heart of our innovation and civic mission delivery, creating greater alignment and synergy across all three areas;
- Focusing on major strategic knowledge exchange activities, such as Strength in Places Fund applications, of which we have led two successful partnership awards, both of which will deliver significant, long-term benefits to the South Wales and Welsh economy;
- Growing and diversifying our business and strategic partnerships to catalyse inward investment into Wales, including supporting degree apprenticeships, innovative FE-HE training partnerships, and job creation in regional priority sectors;
- Delivering innovative training and support to our staff and students thereby enhancing our community's ability to collaborate effectively with external organisations, complemented by CPD designed to grow skills and widen access to University research expertise of value to the Welsh economy;
- Developing an entrepreneurial and commercial mindset in staff and students via provision of opportunities to deliver novel knowledge exchange and civic mission activities, in collaboration with business partners and local communities;

- Continuing our growth in research awards, specifically via leverage of sizeable million-pound investments designed to sustain and grow innovation activity in South Wales, working with the Welsh Government, Cardiff Capital Region (CCR) City Deal and newly launched Wales Innovation Network, as well as GW4 and the Western Gateway;
- Boosting knowledge exchange capability via supporting start-up, spin-out and SME partners to access University research and development (R&D), investment and commercial opportunities (enabled via our RWIF-funded membership of the renowned [SETsquared Partnership](#)).

Central to the delivery of this ambitious plan has been the recruitment of a ICDF / RWIF-funded **Innovation Strategy Business Manager**, with the remit to coordinate our strategy and activities, working directly to the Pro Vice-Chancellor Research, Innovation and Enterprise and Director of Research and Innovation Services. A new **Impact and Engagement Team**, and investment in **Translational Research Officers**, has grown capacity in Research Commercialisation and Impact, aligned to boosting engagement, training and delivery of high-quality social, economic and commercial initiatives. This has been complemented by our use of RWIF funding to directly support delivery of the strategic ambitions of our major Institutes, especially those that will transition to become our new University Innovation Institutes in 2022 (see section 2). Further key RWIF-funded appointments, aligned to delivery of our strategy, are described throughout.

## 2. Capacity Grant

### Capacity Grant

The Capacity Grant elements of ICDF and RWIF 2020-21 supported Cardiff's new **Major Bid Development Team**, contributed to the establishment of our new **Impact and Engagement Team**, and enhanced capacity in our **Strategic Partnerships Team**.

The **Major Bids Team** facilitates development and delivery of strategic large-scale research and innovation bids (e.g., the successful cross-Welsh HEI £50M Strength in Places, [media.cymru bid](#), complementing our previous £44M Strength in Places [CSConnected](#) bid). Increased capacity in the team has enhanced delivery of major data-focused projects (e.g., £15M Cyber Innovation Hub (currently under consideration at Cardiff Capital Region); the £17.6M Wales Data Nation Accelerator (with Aberystwyth, Bangor and Swansea Universities, currently under consideration at Welsh Government); and our £10M Cardiff Capital Region Challenge Fund, which started in October 2020).

The new **Impact and Engagement Team** is delivering a new, co-ordinated suite of impact, policy and public engagement training, supporting enhanced and more productive collaborations with external partners and streamlining delivery of our UKRI Impact Acceleration Account awards. This work is designed to grow our already strong success with Knowledge Transfer Partnerships, as well as support larger-scale innovation applications to funders, for example, the MRC Developmental Pathway Funding Scheme (DPFS). One of our recent successes with the scheme, with the bid supported by RWIF-funded staff, secured £1.4M of funding to develop technology for measuring field loss in glaucoma. The project is collaborative with two other HEIs. A patent will be filed shortly and the team will be working to develop the technology on the translational pathway towards a commercialisable outcome. The **Strategic Partnerships Team** has been

expanded, and continues to deliver ongoing, dedicated professional support for key partnerships aligned to our major research and innovation strengths (e.g., Office for National Statistics).

### **Innovation Capacity Development Fund (ICDF)**

ICDF investment addressed innovation bottlenecks identified in consultation with our staff, specifically the need for:

- (1) Experienced business support to deliver collaborations and partnerships linked to our research and innovation strengths, including investment in growing our Strategic Partnerships Team.**
- (2) Enhanced monitoring of our innovation, translation and commercialisation activities, including data and economic analyses for large-scale bids with business.**

Funding for three new **Innovation and Enterprise Managers** ensured additional support for Cardiff's new University Innovation Institutes (UIIs), with one individual already recruited (in Crime & Security), and two managers (for Neurosciences & Mental Health, and Data & AI) currently being recruited. The new Institutes align to our commitment to increase and grow Cardiff's innovation and impact at scale, benefiting multiple disciplines across the University, facilitated by RWIF funding and aligned to Welsh Government, UKRI and Horizon Europe priorities. Identified through an external review, they will focus on *Neurosciences & Mental Health*, *Data & AI*, and *Crime & Security*, with additional Institutes likely to focus on a *Climate Change* and *Advanced Manufacturing* (currently under consideration).

Each UII will be assigned a dedicated **Innovation and Enterprise Manager** to generate new collaborative external research partnerships aligned to delivery of major bids, commercialisation opportunities, place-based skills development, student enterprise activities and business-oriented PhD doctoral training entities. The Institutes will be additionally supported by **three new Strategic Partnerships Managers / Officers** (funded through RWIF) and additional investment in **Translational Research Officers** (see below), as well as by our **Major Bid Development Team**. This provides a synergistic and co-ordinated expansion in professional support, aligned to the opportunities these areas provided to enhance the regional economy and Welsh innovation priorities.

Aligned to a newly agreed programme of work on research and innovation data, performance and metrics, we are currently recruiting for a new **Senior Research Data Advisor** and a **Research Data Officer**. Working with our Cardiff-funded Transformation Lead on Research, they will develop a comprehensive research and innovation performance and reporting dashboard, covering research culture, funding and knowledge exchange. The new dashboard will be used to inform investment decisions, aligned to maximising use of RWIF-funded resources to grow innovation, commercialisation and impact outcomes.

- (3) Additional support to help meet high demand for our student enterprise training and activities.**

**Two Student Enterprise Officers (1.5 FTE)** are providing added capacity to our student enterprise team (see Section 4 for more details), additionally supporting

our new enterprise training programme for students and graduates – Start-up Support Package.

**(4) Additional support for specialised training, business investment and commercialisation, including generation of spin-outs.**

**(5) Support to address bottlenecks in contracts.**

We have now joined the [SETsquared](#) Partnership, which will provide staff and students at the University with access to further training, mentoring and start-up funding opportunities for commercialisation. Recruitment of an **extra Paralegal Officer** into Research and Innovation Services has additionally reduced the high workload of our contracts team, aligned to Cardiff achieving its highest ever level of research awards in 19-20 (an annual total of £150M of research grants and contracts secured), with a further officer to be appointed subsequently using RWIF 21-22 spend.

We have recruited a **Translational Research Officer**, who is being trained in spin-out development, and will work specifically with our new Innovation Institutes, with a further officer being recruited. For example, increased support into translational research will help boost potential commercial outcomes from our recently awarded **£2.7M EPSRC Shared Prosperity Partnership** with bp and Johnson Matthey. Based in our new Translational Research Hub on Cardiff's Innovation Campus, this project will research sustainable catalysts for clean growth, and includes significant cash and in-kind contributions from both companies.

**(6) Additional support for staff and student impact activities, including increased working and partnership with Welsh policymakers, aligned to our new [Social Sciences Research Park \(SPARK\)](#).**

The new University **Impact and Engagement Team** has focused initially on integrating training and funding approaches to supporting impact, policy needs, public engagement and civic mission, providing staff with a clearer and more supportive entry point into delivery of early-stage collaboration with external partners. We believe this will increase our success with Knowledge Transfer Partnerships, as well as larger-scale awards on innovation from funders.

This team will also manage our recently harmonised approach to UKRI / Wellcome Trust Impact Accelerators, additionally supporting more strategic engagement with Welsh and national policymakers (see Section 3). A further goal of this team is to increase submission of Cardiff's impact and knowledge exchange outcomes for major awards and prizes, enhancing the reputation of Cardiff and Wales in impact, civic mission and public engagement. The success of this approach is illustrated by three members of staff recently being shortlisted for ESRC Impact Prizes.

**(7) Additional support for civic mission and public engagement activities to provide oversight for delivery of this component of our Innovation Strategy.**

A new **Civic Mission Officer** has enhanced capacity in the Civic Mission Team, and a **Public Engagement Manager** is providing dedicated training, support and strategic input on public engagement activities across the University. The **Public Engagement Manager** and Civic Mission Team are also overseeing a more strategic approach to investment, as well as improved evaluation of civic mission and public engagement outcomes / KPIs, aligned to growing success in achieving

sustainable funding for these activities. Work on KPIs / metrics in these areas will be further supported by the development of our new research and innovation performance dashboard (see (2) above), which will include public engagement and civic mission data across the University for the first time. ICDF is further supporting continued employment of our **Digital Communications Officer**, who is working with staff / students / external partners to effectively showcase our Civic Mission and Public Engagement contributions.

## Section B: Specific content

### 3. Commercialisation / income generating activity

#### A. Commercialisation

An independent study recently ranked Cardiff University 3<sup>rd</sup> in the UK for commercialising its research via company formation (<https://octopusgroup.com/newsroom/latest-news/research-to-riches-report-highlights-untapped-potential-of-uk-universities/>). There continues to be a strong internal demand for early investment in commercial opportunities. There is significant potential to increase this further via growing staff and student awareness of the value of considering IP protection and commercialisation, and diversifying our engagement in commercial activities (e.g., we have found that male staff are more likely to engage in translational and commercialisation activities compared to female staff). Our three-year ambition focuses on:

- **Ensuring that all staff and students have understanding of, and access to, support for IP protection and commercialisation, including staff typically under-represented in this area;**
- **Continuing to increase our translational research income via investment in supporting areas with high potential to deliver commercial outcomes;**
- **Growing our experience and knowledge via partnership with our GW4 colleagues, enabled via the SETsquared Partnership.**

Our RWIF investments are being used to grow our commercialisation activities as follows:

- 1. *Training and support for impact and translational activities, aligned to greater protection of IP and identification of commercialisation opportunities***

In REF 2014, Cardiff University was ranked 2<sup>nd</sup> for impact, and it has remained a key strategic priority for the Institute to deliver outstanding impact. ICDF / RWIF had funded a new dedicated University **Impact and Engagement Team**, and will also fund an additional **Translational Research Officer** with experience of commercialisation, including spin-outs. This team is working on (a) delivery of new – cross discipline – impact / translational / commercialisation training for staff to broaden their knowledge and understanding of the value of impact, translation and commercialisation, (b) consideration of approaches to equality, diversity and inclusion which promote impact and commercialisation to all staff, and encourage broader involvement across disciplines, and (c) ensuring we identify research that has potential to be commercialised, generating new products and services, as well as laying the foundation for new spin-out companies, through working more closely with staff at early stages of their research. These teams are

also supporting staff make applications for external funding for translational activities, including Knowledge Transfer Partnerships. An example of a recent successful KTP award is with Powerstar, where the University is working with the company to develop a bespoke and customisable digital twins-based Asset Management System (AMS) for Powerstar's VIRTUE products – large-scale battery storage systems (worth approximately £2M each). The creation of the AMS will protect and extend the VIRTUE products' lifetime, increasing the company's income and also reducing the downtime of VIRTUE (which currently costs the company £2000/day).

## ***2. Early stage proof-of-concept investment in impactful and translational research***

Via RWIF funding, we created a new **Innovation for All** (IfA) funding Programme, designed to facilitate delivery of exciting projects from individual researchers or teams, specifically around translation, impact, civic mission and public engagement. Project grant holders will be brought together into a cohort, additionally benefiting from a bespoke training programme, including peer-to-peer support and mentoring. They will also be expected to mentor other researchers within their Schools to disseminate and share best practice.

The programme encompasses four funding schemes, with projects being funded from the start of the 21-22 academic term (we did not fund projects in 20-21 due to Covid-19, instead moving that funding into the next academic year). One is the **Impact Fund**, which is supporting potential impact arising from excellent research, jointly working with external organisations, designed to support post Covid-19 recovery in Wales. Dedicated support during development and delivery will be provided from our Impact Team, including a focus on future sustainable funding opportunities. The second fund is the **Translational Fund**, which is available to researchers wishing to develop an idea / technology to a point at which it can attract the interest of businesses / third sector. All applicants to this scheme – whether successful or not – are given dedicated support from our new Translational Research Officers and wider Research Commercialisation Team, with the aim of developing their ideas / outcomes effectively and generating more sustainable external funding. The two other funds are for new Public Engagement, and Civic Mission initiatives, with the aim of diversifying Cardiff's portfolio, as well as collaboration with other Welsh HEIs (see section 5).

## ***3. Rapid sign-off on contracts, and detailed consideration of commercial / IP activities***

Cardiff has seen a steep upwards trajectory in research awards in recent years, including many with complex contractual and IP requirements, aligned to collaboration with multiple businesses / partners. Our plans to grow these types of Innovation-focused awards will create pressure in the delivery of our day-to-day funding portfolio, slowing up sign-off of contracts and affecting research income generation. **ICDF is funding a new Paralegal Officer to address this bottleneck**; they focus on delivery of straightforward grants and create additional capacity which allows us to bid for procurement / tender opportunities from business / public sector seeking skills and training programmes. This additional capacity will be further augmented by appointment of an additional Paralegal Officer, thereby maintaining capacity and quick contract sign-off as Cardiff's research awards grow accordingly.

## ***4. SETsquared Partnership***

SETsquared is an enterprise partnership between Bath, Bristol, Exeter, Southampton and Surrey universities, ranked as the global no. 1 business incubator. **ICDF** has enabled funding of **Cardiff's membership of this partnership**, and we are working with SETsquared to identify opportunities for Cardiff to benefit from inclusion in this vital regional partnership. By harnessing the brand capital of SETsquared, we intend to demonstrate Cardiff's commitment to accelerating economic and social prosperity within its region and via partnership across the UK, while providing unique training and support to staff and students engaging in enterprise and entrepreneurial activities.

## **B. Income Generating Activity**

UK Government is focused on delivery of a successful place-based research and innovation investment plan (e.g., see the new UKRI Innovation Strategy). In this regard, Cardiff has major research and innovation strengths in: (a) Neuroscience and Mental Health; (b) Environment and Climate; (c) Compound Semiconductors; (d) Creative Economy; (e) Civic and Social Society; (f) Crime and Cybersecurity and (g) Data and AI.

The last two years have seen significant investment into these areas, including: (a) the £9M South Wales AHRC [Clwstwr Creadigol](#) cluster, now augmented by the recently awarded £50M media.cymru Strength in Places bid; (b) our £4M collaboration with Takeda into new drug development approaches for mental health and neurological disorders, which has the potential to be further developed into a major innovation hub, working with Cardiff Capital Region; and (c) £43.7M success for a new South Wales compound semiconductor cluster (CSConnected), of which £25M is a grant award to Cardiff University.

Our three-year ambition focuses on:

- **Ensuring our research and innovation agenda is focused on developing excellence, where we are nationally and globally leading, with strong potential for income generation into, and economic benefit for, Wales (training, job creation and new commercial outcomes);**
- **Developing research and innovation bids aligned to the priorities of Welsh Government, the CCR, GW4 and the Western Gateway, ensuring a cohesive and co-ordinated approach across the South West and Wales;**
- **Investing in partnership programmes with business where we can diversify our current innovation portfolio (e.g., growing the supply chain linked to major investments), but also supporting those who are in the early stages of undertaking impact, enterprise and commercialisation activities;**
- **Taking a more ambitious approach to working with other HEIs in Wales and the South West, business, funders and government, ensuring Wales presents a co-ordinated innovation ask, with real potential to lever additional inward investment (enhanced by the launch of the Wales Innovation Network).**

We will grow income as follows:

### **1. Large-scale bids contributing to our collaborative research income**

Delivery of the following large-scale investments will be enabled by (a) appointment of experienced professional staff to support partnership and bid activities and (b) direct

investment to deliver business workshops, new innovation activities and financial and economic analyses evidencing needs and outcomes:

**Funded since last submission:**

1. **£10M Cardiff Capital Region (CCR) Challenge Fund**, aims to re-build local wealth by inviting public sector bodies to identify urgent societal challenges and work with businesses and other organisations to create innovative solutions to these problems. There are three priority areas: accelerating decarbonisation, improving health and wellbeing, and supporting, enhancing and transforming communities. The programme, funded by CCR City Deal, provided Cardiff University with £1.2M to undertake research, leadership and programme delivery activities.
2. **£50M media.cymru**, a Cardiff University-led consortium, funded through Strength in Places, will develop a world-leading cluster for media innovation in the Cardiff Capital Region. The involvement of the University of South Wales and Cardiff Metropolitan University as core collaborators in the cluster will support the delivery of a major outcome of benefit to South Wales and beyond, likely to be further strengthened by the Wales Innovation Network.
3. **£2.7M EPSRC Shared Prosperity Partnership** with bp, Johnson Matthey and the University of Manchester to research sustainable catalysts for clean growth. This will enable Wales to lead on developing new catalyst technologies necessary to deliver clean growth in the petrochemicals and fuels sectors.

**Under consideration or in development:**

4. **Wales Data Nation Accelerator** proposal (**£17.6M**) (with Aberystwyth, Bangor and Swansea), currently under consideration at Welsh Government, an example of a strong collaboration across Welsh Universities, aligned to the principles of WIN.
5. The development of a new **£15M Cardiff Cyber Innovation Hub** with Airbus, Thales and CCR, building on a recent South West and Wales Cybersecurity Strength in Places bid
6. **South West Aerospace and Aviation Cluster** (in collaboration with GW4 Universities and Bristol Airport)
7. **Neuroscience Innovation Lab**, in alignment with potential developments linked to a Life Sciences Park (in collaboration with CCR / NHS Wales).
2. ***Diversification resulting in increased income from collaborative research, consultancy, contract research, exploitation of IP and CPD***

Cardiff is making substantial investment in an Innovation Campus, which houses many of the major strengths noted above. A key need for us is to diversify disciplinary engagement in our investments generating further funding opportunities with new businesses. RWIF funding will be used in 21-22 to diversify our R&D along investment supply chains, supported by our **new £500K R&D Strategic Investment fund**. Due to Covid-19, we did not spend from this fund last year, but in 21-22 it will be directly aligned to the strategic activities of our new University Innovation Institutes, and each Institute will be further supported by its dedicated Innovation & Enterprise Manager to develop an action plan for

delivery of new R&D activity using the Fund. This will be reported in subsequent RWIF strategies.

### **3. Growing capability and capacity in staff and students**

Balancing the strategic approach at scale outlined above, and aligned to our commitment in our Innovation for All Programme, RWIF is supporting broader training, knowledge and understanding of impact, innovation and commercialisation, thereby growing staff and student confidence in the delivery of innovation in partnership with business, from early stage to commercialisation. For example, our **Translational scheme**, which has been previously piloted to great success in the College of Biomedical and Life Sciences has been expanded across the University supporting early-stage innovation. Similarly, our **University Impact and Engagement Team** is supporting all staff to develop their impact projects, ensuring that outcomes from a broader set of disciplines are now being considered for commercialisation, and protection of IP. In 2021-22, we will conduct a survey to benchmark understanding of impact, public engagement, and civic mission amongst staff to provide a baseline for reporting of benefits of our training and development programme, as well as inform further refinement of that to maximise outcomes.

### **4. Continuing Professional Development (CPD) / Collaboration with FE**

Cardiff's CPD team focuses on translating the University's expertise into practical, focused training solutions. A recent decline in CPD income was caused by transfer of the Wales Centre for Pharmacy Professional Education (WCPPE) and Postgraduate Medical and Dental Education (PGMDE) CPD activities into the NHS, as part of establishing Health Education and Improvement Wales; this has been off-set by healthy CPD in a number of other areas, including Business, Medicine and Healthcare.

In 20-21, the CPD Unit adjusted its working in light of the changing strategic landscape, both internally and externally. There is now a greater emphasis on CPD delivered aligned to the University's priority research areas, which addresses the identified needs of businesses and organisations working on those sectors. Enhanced knowledge and understanding of the strategic partnership pipeline also enabled a greater emphasis on CPD delivered to our strategic partners (e.g., the CPD Business Development Manager for the College of Physical Sciences and Engineering, has been seconded to support the skill-agenda of the UKRI Strength in Places-funded CSConnected cluster). The CPD Unit is currently planning its move into the University's new innovative sbarc | spark building, where it will be co-located alongside research units and local businesses. This will facilitate closer collaborations with key organisations and teams across the University, aligned to our wish to grow CPD opportunities as we in turn grow the scale of our external collaborations with local, national and international businesses.

#### **3.1 Provide details of your institution's strategic KPIs for commercialisation and income generating activity:**

Over the RWIF 20-23 we will deliver:

1. 10% per annum increase in our collaborative research income (both cash and in-kind). This KPI will be achieved through data capture improvements (particularly for in-kind contributions). New activity will be driven by the new Innovation and Business Engagement posts, major bid development activities/staff and a focus on priority research and innovation themes.

2019/20 value is £16.2M  
2020/21 forecast based on 9-month data is £15.9M

Target for 2021/22 is £17.5M  
Target for 2022/23 is £19.3M

2. 25% increase in the number of disclosures and patents filed by or on behalf of the University. The baseline number of disclosures is 80, and we will seek to increase this to 96 by 2023. Similarly, for patents we will aim to increase from 8 currently by 25% per annum to 16 by 2023.
3. 3% increase per annum in the number of individual licences entered into, starting with 362 as the baseline for 2020-21. This KPI has been changed from reporting batched new licences for patent families to individual licences in order to provide a more accurate reflection of activities.
4. 20% increase in our IP income. The baseline is currently £2.5m. Via progression of more projects along the translational pathway it is anticipated that this will rise to £3M by 2023.
5. Raise £5M per annum of external investment via spin-outs.
6. Submit 5 collaborative innovation bids involving other Welsh Universities by 2023, aligned to the Wales Innovation Network KPIs to contribute to the £30M overall Wales Innovation Network target.
7. Train 600 new staff in effective delivery of Impact, Public Engagement and Civic Mission activities

**3.2 How will your strategic approach in this area align with HEFCW's [Research and Innovation: the Vision for Wales](#)? Select the pillars supported:**

- Excellence
- Place
- Innovation
- Collaboration

**3.3 How do your strategic ambitions for commercialisation and income generating activity support the Vision's goals, milestones and ambitions?**

**Excellence** – Our strategic ambition is to grow investment into our research and innovation strengths, including Neurosciences and Mental Health, Compound Semiconductor research, the Creative Economy, the Environment and Climate and Data Science and AI, aligned to the statement: **‘Wales to be recognised as an international leader in identified areas of strength’**.

**Place** – Our priority areas align strongly to the goals of the Well-being of Future Generations Act (Wales) 2015, as well as the ambitions of the CCR and Western Gateway. Via joint working with Welsh Government, CCR, Western Gateway and UK Government, we can ensure an aligned vision, designed to develop South Wales, and the broader South West region, into an exciting investment proposition.

**Innovation** – Cardiff is an effective driver of R&D expenditure in Wales; increased professional and funding support via RWIF, aligned to opportunities to deliver large-scale growth and investment plans, will help ensure that **‘Wales will make a vital contribution to the delivery of the UK Government’s target of 2.4% of GDP expenditure on research and development by 2027’**.

**Collaboration** – Aligned to the statement, **‘researchers in Wales will tackle grand challenges through collaborations with universities, key anchor companies, SMEs and public and third sectors’**, we recognise the critical importance of partnership and collaboration. Our Wales AI Hwb, which focuses on supporting SMEs and other businesses to implement AI innovations, is being developed in partnership with business, Welsh Government and three Welsh HEIs. CSConnected is a further example of effective partnership with Welsh Government, CCR, business and other HEIs, and Clwstwr Creadigol involves collaboration with over 100 small and large organisations, as well as all Cardiff-based Universities. Our international collaborations through the EC’s Horizon 2020 programme for research and innovation (2014-2020) encompassed over 750 partner organisations across 123 distinct projects and generated >€50M additional research income into Wales.

#### 4. New business growth and skills support

Section 4 is the critical foundation for delivering new business growth and skills. We will take an increased strategic focus, aligned to an ambitious plan for large-scale investment into identified research and innovation strengths, while working with large business, as well as SMEs (which form over 70% of the businesses in Wales). We will:

- **Create innovation hotspots which act as attractors for new strategic business partnerships and collaborations, and facilitate entrepreneurial activities in the public and private sectors;**
- **Provide the high-quality R&D expertise vital for developing business competitiveness, including provision of incubator support for new spin-outs;**
- **Align the University’s investment approach, where relevant, to priorities of CCR, working in partnership to encourage new Welsh business and supporting delivery of a talent and skills pipeline in the region;**
- **Engage strongly in place-based funding opportunities, designed to generate clusters of activity which provide skilled jobs, boost economic productivity and diversify business opportunities along key supply chains.**
- **Growing entrepreneurial staff and students**
- ***SETsquared Partnership***

**Membership of SETsquared** will provide access to support programmes, across the lifecycle of a business venture, aligned to our aim to create a more entrepreneurial approach to new business generation, arising from our research endeavours. This will be complemented by investments in the **Impact and Engagement Team**, and the

**Translational Research Officers**, growing our internal support for staff looking to develop their own businesses (see Section 3).

- ***Increasing student enterprise activities***

Established Cardiff graduate start-ups (lasting 3 years or more) increased by 38% in the two years prior to the RWIF strategy, demonstrating the high-quality support provided by our student enterprise and start-up team, and facilitated by the £200K Youth Entrepreneurship Scheme. Complemented by engagement with SETsquared, ICDF/RWIF is supporting **two additional Student Enterprise Officers** (0.5FTE recruited already, 1.0FTE to be recruited late 2021, augmenting our current 3.5 FTEs). The team will deliver:

- The [Ymlaen scheme](#), created to place student entrepreneurs and freelancers in co-working hubs (e.g., Tramshed Tech, Rabble). The entire scheme switched to be remote/digital during the pandemic. Since re-launching in June 2020, 40 students have completed the scheme. As well as working well, the remote version has been logistically more scalable. For that reason, the scheme has been extended to include expert mentoring from the local business community, exceeding the capacity of Cardiff University's internal Business Mentor. After December 2021 we will evolve the scheme, developing a financially sustainable model linked to our Social Sciences Research Park (sbarc / spark) Innovation Incubator, providing the ideal environment for fostering social entrepreneurship.
- A new pilot programme to replace the Syniad Scheme to engage students with generating and validating ideas which address societal issues. The pilot programme will run in November 2021, in collaboration with Child Friendly Cardiff.

The new **Student Enterprise Officers** will additionally focus on new activities including:

- Embedding enterprise training more effectively into degree programmes, with initial consideration of how we may do this, in alignment with our innovation priorities. This training is known to give students the confidence to excel whether through their own start-up or in their future work in the private, public or voluntary sector. This will be a key element of our long-term strategy to enable all students to engage with employment rich activities during their studies.
- Launch of a new pilot scheme aimed at giving students and recent graduates experience of real-life innovation projects that align to our vision of fostering economic growth and social and cultural progress in Wales, reinforcing our civic responsibility and commitment to enacting the Wellbeing of Future Generations Act. The scheme, provisionally named Cardiff University Innovation Development Scheme (CIDS) will offer paid placements allowing participants to work on university innovation and enterprise projects, with research leaders and business. The scheme will be open to all areas of our research and innovation, although alignment to our strategic priorities, via collaboration with our UIIs for example, will be encouraged. A selection of students will receive a cash prize and a business mentor to support further development of their business idea.

- ***Support for collation and evidenced based use of performance metrics***

Using ICDF funding we are in the process of recruiting a new **Senior Research Data Advisor** and a **Research Data Officer** to lead on the development of a research and

innovation performance dashboard, aligned to research culture, funding and knowledge exchange. The implementation of the dashboard will enable the University to better fulfil its obligations to the Knowledge Exchange Concordat, through an enhanced understanding of the effect of research and innovation initiatives, enabling subsequent improvement to delivery, as required.

- **Support for the generation of spin-outs**
- ***Translational Research Officer to support spin-outs***

Cardiff is in the top half of the Russell Group for spin-outs, with 32 still active after 3 or more years. For example, Medaphor (now [Intelligent Ultrasound plc](#)) was established in 2005 with £60K from Cardiff's proof of concept fund. The product is currently being used to help clinicians scan lungs to understand Covid-19. With high demand for dedicated spin-out expertise, our new **Translational Research Officer** is being trained to support the generation of new spin-outs, looking to drive opportunities in areas with considerable future commercialisation potential (e.g., Institute for Compound Semiconductors, and our Neuroscience Innovation Lab). Access to support from **SETsquared** will additionally complement this investment in-house, and support both staff and students in developing new spin-outs (see Section 3).

- ***Incubator space and support for spin-outs***

Key to the success of Cardiff's spin-outs is our incubator space on the Heath Park Campus. [Medicentre](#) provides a nurturing environment for new companies and is hugely important in supporting new initiatives. Via our £300M Innovation Campus, we will open a new Innovation Incubator in 2021-22, co-located with sbarc / spark; this will provide an attractive new facility, close to many of our major research and innovation strengths, aligned to our ambition to increase the number of spin-outs being generated via Cardiff research as well as nurturing our social entrepreneurs. Comprising 17,5000 sq. ft of dedicated space across four floors, Cardiff Innovations@sbarc will be equipped with lettable office space, formal and informal meeting areas, wet lab space and joint exhibition / presentation areas including a high-end conference space for up to 200 people. sbarc / spark will also house RemakerSpace – a first-of-its-kind facility that supports and promotes re-manufacturing and the circular economy in Wales by providing businesses with the skills, equipment and awareness to rethink the design of products and business models and engage with the local community.

- **Developing regional, thematic and strategic partnerships**

Cardiff has the ambition to develop ten new strategic partnerships by 2023, with the expectation that all of our major research and innovation priorities have strategic partnerships able to support new R&D, graduate opportunities, skills and business development. We see these strategic partnerships, alongside other business collaborations, as vital to our ambition to deliver a place-based industrial strategy, alongside mechanisms to support the skills development needed for strong job creation.

- ***Strategic Partnerships***

We signed our first strategic partnership agreement with the Office for National Statistics (ONS) in July 2019. This is supporting collaborative research projects, joint PhD studentships and jointly appointed staff; it forms a major strand of our plans to establish the Wales Data Nation Accelerator, which also involves Swansea, Bangor and

Aberystwyth Universities. The development of a new MSc Data Analytics for Government is a key strand of the ONS partnership. All public sector employees are eligible to study the MSc and the first cohort of 250 students started in 2020-21. The four core modules from the MSc are also available to study on a standalone basis for continuing professional development (CPD), starting from September 2021.

The University is also in the advanced stages of developing a further formal strategic partnership, aligned to our interest in boosting collaboration and enterprise in the area of Environment & Climate, as well as creating further opportunities for potential secondment and knowledge exchange opportunities for staff, students and researchers from both organisations.

We are working with three other companies on strategic partnerships, with the aim of signing those in the next year. All provide strong opportunities to deliver business collaboration, skills and training, provide new CPD and grow large-scale investment, aligned to our focus on Innovation Institutes. Maximising opportunities from these partnerships requires ongoing, experienced and dedicated professional support, now provided by RWIF's funding of **Strategic Partnerships** support.

- ***KTPs and SMART Partnerships***

Knowledge Transfer Partnerships (KTPs) and SMART Partnerships are an excellent, low risk first step supporting early-stage collaborations. Cardiff has a strong track record in winning KTP grants, currently holding 19 awards (an increase of 1 since 2019-20). We will continue to utilise these schemes to increase business collaboration across all our research strengths, seeding new partnerships which can be nurtured along the pipeline to major strategic partnerships. A further advantage of KTPs is the outstanding opportunity they provide for graduates to work directly with industry, contributing to **A Prosperous Wales**: we anticipate that these provide a potential next step for graduates who take part in our new (CIDS) enterprise training scheme.

- **Skills needs for business**

Central to the delivery of team-focused skills at Levels 7 and above are our [National Software Academy](#) (NSA) and [Data Science Academy](#) (DSA). These deliver undergraduate, postgraduate degree and CPD programmes with a focus on industry-led teaching and project-based learning in partnership with external organisations. The innovative teaching of these programmes aims to ensure that graduates are work-ready by the time they leave the University.

Expansion of this approach is integral to our plans for the Wales Data Nation Accelerator, both in South Wales but also across Wales. Our CSCConnected award focuses on delivery of skills at Levels 4 and below, enabled via the Compound Semiconductor Education group set up with representation from South East Wales FE and HE, members of the [CS Cluster](#), the [CSA Catapult](#) and Swansea University. We intend to use the development work from this pilot as a model for future skills training at this level, including how that might be expanded to other sectors where there is a regional need for skills development. This plan will be developed and expanded over the RWIF 3-year period, aligned to strategic revision of our CPD delivery.

#### **4.1 Provide details of your institution's strategic KPIs for new business growth and skills support**

Over the RWIF period, 20-23, we will:

1. Increase the generation of new spin-outs with high-growth potential by 50%, from 0.8 pa currently to 1.2pa by 2023. This will place Cardiff in the top half of the Russell Group for numbers of spin-outs generated based on current HE-BCI figures.
2. Increase the total number of HEP-owned and formal spin-outs (not HEP-owned) lasting more than 3 years from 33 to 35.
3. Develop enough new KTP projects to maintain our current level of 18 plus gain an extra 4 so that we have 22 live projects by 2023. This will mean gaining an average of 7 new projects each year. We are currently 6<sup>th</sup> in the Russell Group for numbers of live KTP projects and will aim to reach top 5 by 2023.
4. Increase the numbers of new student/graduate start-ups as reported via HE-BCI from 25 in 2018/19 to 50 in 2023.
5. Increase the numbers of students known to have received start-up advice, guidance or support through a combination of improved data collection and new activity. Numbers will increase by 1000 students each year, reaching 10,000 students by 2023 (from approximately 6,000 in 2018/19).
6. Increase the number of students entering a validated business idea through a new pilot programme encouraging business ideas addressing social issues, from a baseline of 15 (via the previous Syniad competition) in 2020/21 to 20 in 2021/22, and 30 in 2022/21.

**4.2 How will your strategic approach in this area align with HEFCW's [Research and Innovation: the Vision for Wales](#)? Select the pillars supported:**

- Excellence
- Place
- Innovation
- Collaboration

**4.3 How do your strategic ambitions for new business growth and skills support the Vision's goals, milestones and ambitions?**

**Excellence** – Our strategic approach to our RWIF investment, as well as our partnership working with the CCR, strategic partners, and plans to grow and collaborate with local and global businesses aligns to: **Wales will support a more systematic approach to exploiting the multiple pathways between research and the economy**'.

**Place** – Cardiff is strongly committed to developing new strategic partnerships of significant benefit to the Welsh economy, aligned with the Vision's aim that **'there should be a clear focus on partnerships and clusters'**. A good example is our proposed Wales AI Hwb, involving collaboration with ONS, as well as many other businesses.

**Innovation** – Cardiff’s The Way Forward strategy strongly aligns to the Vision’s ambition for **‘Wales to be recognised as a leader in innovation, enterprise and entrepreneurship and skills development’**. In the last 10 years Cardiff University has raised over £75M in venture funding and four of its spin-out companies have listed on the Alternative Investment Market (AIM) creating high-value, high tech jobs in the Cardiff-city region. Our ambition over the next 3 years is to increase our number of spin-out companies, creating valuable employment for highly trained graduates.

**Collaboration** – The Vision’s ambition is for **‘the Welsh research community to be collaborative, outward looking and global in perspective’**. Our ambitions are to expand our collaborative activities using RWIF funding, not just in Wales but across the UK and internationally, something that will be greatly enhanced through our membership of SETSquared, and continued partnership working in Wales and the South West.

## 5. Civic Mission and Public Engagement

Our Civic Mission will focus on Welsh needs, specifically post Covid-19 renewal and revival, as well as activities that support the ambitions of the Well-being of Future Generations (Wales) Act. We will utilise our membership of the new Universities Wales-led Civic Mission Network to contribute to a coherent approach to civic mission across Wales, as well as sharing of best practice. Proposed activities include:

- **Focus on high-value initiatives with strong potential to contribute to Welsh revival and renewal from Covid-19;**
- **Ensure our staff and students are trained and supported to become effective ambassadors for civic mission and public engagement within our region;**
- **Deliver high-quality early stage projects in partnership with local communities, highlighting the vital economic and societal benefits of research and innovation and laying the foundation for sustainable future investment in civic mission activities;**
- **Deliver greater alignment between our research, innovation and civic mission activities, ensuring that investments in our Innovation ecosystem form the backbone for our Civic Mission initiatives**

We have highlighted activities aligned to our Civic Mission aims earlier, including (a) how we work with FE partners and businesses to increase skills, (b) our strong collaboration and alignment with CCR / Western Gateway priorities (e.g., as evidenced by Cardiff’s contribution to the CCR’s State of the Region reports) and (c) support for our staff and students to undertake enterprise activities and grow new businesses supporting the local economy.

The focus here is on our work with local communities:

### 1. Delivery of our civic mission and public engagement activities

**We used ICDF to recruit a new Civic Mission Officer and a Public Engagement Manager**, bringing additional expertise and resource to support staff delivery high-quality initiatives, in alignment with our strategy. This has also enhanced collaboration between

the Civic Mission team (in our Communications Division) and Impact Team (in Research and Innovation Services) further enabled by continued **employment (via ICDF) of our Digital Communications Officer**. The latter member of staff is responsible for development of an effective communications strategy for Civic Mission, and supporting staff and students to showcase our Civic Mission and Public Engagement contributions externally.

## 2. Flagship Civic Mission Initiatives (£200K)

In 20-21, we continued to support two flagship Civic Mission activities for the University, aligned to building cohesive, resilient and equal communities and schools, with the aim to evolve our approach to flagship activities over the subsequent two years of RWIF funding (21-23).

Our **School Governors Project** (RWIF £50K) was designed to increase the number of serving staff school governors as well as develop a new school governors programme. The project has had success in just one year with an additional 17 staff governors being added to the University Staff Governor Network, on top of the existing 51 school governors in the network at the start of the project. The governors programme also included online knowledge exchange sessions for existing and potential governors, as well as additional online and offline support and resources. We launched the first alumni school governor programme in Wales in collaboration with Governors for Schools and the Alumni department. This resulted in five Cardiff alumni being recruited as school governors. We also launched a Welsh language governors' campaign in collaboration with Cardiff Council aimed at increasing the number of Welsh speaking staff joining Welsh language school governing bodies. As some of the programme's activities were delayed due to Covid-19 school closures, the project will continue into 2021-22 to complete activities already in progress. These include a new bilingual eLearning module to support recently-placed school governors across Wales, and a new website (based on Cardiff University research) to facilitate knowledge transfer and best-practice sharing among school governors.

Our **Community Gateway Project** (RWIF £50K) aims to make Grangetown (a socially and economically disadvantaged area in Cardiff), a better place to live. Recent funding (including £200K from the National Lottery and £56K of HEFCW funding) helped convert a vacant bowls pavilion into a community venue, completed in summer 2020. Prior to RWIF funding, the project delivered 48 university-community projects, including the Grangetown Youth Forum, a Grangetown business forum, which led to Grangetown's first world street market, a social running group, an annual mental health event, and arts therapy programmes. Via continued engagement with the Gateway project in the first year of RWIF, we designed and distributed activity packs to primary schools in Grangetown including a Grangetown Safe Play Lanes activity pack. This was delivered as part of a child-friendly city project in partnership with Cardiff Council to improve the built environment in lanes in Grangetown. The Youth Forum has continued, and a Grangetown Enterprise Club was launched by Forum members. The RWIF funding is also being used to provide small bursaries for the young people in the Club to develop their ideas and launch them at the Grangetown World Market by the end of 2021. Involvement of student ambassadors as part of the Community Gateway Project helped reach minority communities (e.g., a Cardiff University Business School intern worked closely with Forum members to shape the Enterprise Club and World Market). We are considering how this successful community collaboration could be expanded to other disadvantaged groups in Cardiff, especially where inequalities have been created via Covid-19. For example, through the Grangetown Safe Play Lanes project and the Butetown Mile we are working

with Cadwyn Housing Association to support Cadwyn's tenants via projects which identify and address inequalities they are experiencing.

The launch of our refreshed Civic Mission sub-strategy in 2021 provides a clear framework for us to evolve our approach to strategic activities in the next two years of the RWIF strategy. Our three areas of focus have been identified as: 1) Catalysing Wales' green recovery, 2) Building Wales' skills for the future, and 3) Embracing community engagement.

Linked to the first and third areas, we looking to:

- Expand work on (green) social prescribing in the Valleys (a small pilot is currently being funded through the WEFO-supported ACCELERATE programme). This will enable local primary care professionals to refer people to a range of non-clinical services which can improve mental health and physical wellbeing.
- Work with Cardiff Council to explore the development of our involvement in Cardiff's Children's University, specifically for disadvantaged schoolchildren, aligned to providing opportunities for them to acquire knowledge and skills in research and innovation themes likely to be of strategic importance for future skills and employment opportunities.

### **3. Enhanced training and support for staff in civic mission and public engagement**

Via Wellcome Trust funding we piloted an innovative sector-leading public engagement training programme in the College of Biomedical and Life Sciences, alongside provision of dedicated professional support for the development of public engagement activities and evaluation of outcomes for recipients. This was complemented by a College Public Engagement Network to drive co-ordinated public engagement initiatives across Schools, including consideration of widening participation, co-production with under-represented public groups and communities, and patient involvement in research and innovation.

Using RWIF / ICDF funding, specifically investment in our new **Public Engagement Manager**, we are extending this approach across the University, including provision of new training, and early stage funding schemes designed to support pilot activities (see below, and description of our Innovation for All funding programme). Enhanced support is now also in place for the development of successful external funding bids.

### **4. Civic Mission Covid-19 Recovery Catalyst Fund.**

As part of our Innovation for All Programme, a new Civic Mission Fund has been launched to support novel Civic Mission initiatives from staff, aligned to addressing Covid-19 challenges. Funding will be provided from 21-22 for ideas that align to, and build on, our research and innovation strengths, and which have potential to make a significant difference to communities.

### **5. Public Engagement Proof-of-Concept Fund.**

The fourth fund in our Innovation for All Programme is the Public Engagement Proof-of-Concept Fund, based on our successful Wellcome Trust Public Engagement Fund. The Wellcome Trust scheme helped staff get hands-on experience of public engagement, while delivering novel approaches to work with under-represented communities. The

Innovation for All Public Engagement Fund expands this across the University, developing skills and capacity in public engagement in our staff (particularly early career researchers), and funding (with direct input and support from our Public Engagement Manager) proof-of-concept events for a wide variety of stakeholders, to be developed in collaboration with communities and other organisations. Our [Wellcome Trust scheme](#) has acted as a magnet for collaboration on public engagement with other funding bodies (e.g., NERC's Public Engagement Showcase), and organisations ([Techniquet](#), where we are collaborating on new exhibits), as well enabling evidence to support strong public engagement funding applications at scale.

### 5.1 Provide details of your institution's strategic KPIs for civic mission and public engagement

Over the RWIF period, 20-23, we will:

1. Run 6 knowledge transfer events for the School Governor network with the aim of supporting leadership and management in schools, alongside 6 information sessions for potential new staff School Governors with the aim of increasing the number of School Governors to 80
2. Develop a co-produced programme of professional learning and resources with School Governors, school leaders and teachers which address issues facing schools post-Covid-19, alongside 6 research-led engagement activities or exhibits for school-aged pupils which support understanding and development of solutions to challenges they face
3. Hold 3 Grangetown Schools Advisory Panels, bringing together heads and deputy heads from all primary, secondary and colleges servicing the Grangetown catchment area to identify School needs, and raise awareness of opportunities for engagement with Cardiff University and the School Governors' Project
4. Hold Youth Forum sessions at Grange Pavilion and/or online and develop a programme of Youth-Forum-led ideas for activities focussing on enterprise and engagement, involving Cardiff University staff and students in supporting generation of new business ideas
5. Hold a Community Asset Transfer symposium in Grange Pavilion to share the findings and best practice of the University-Community partnership, aligned with expansion and delivery of 2-3 new projects focused on other disadvantaged groups in Cardiff, especially where inequalities have been (or will be) created via Covid-19
6. Establish three Public Engagement College Networks at Cardiff University, supporting delivery of a co-ordinated approach to Public Engagement, and identification of Civic Mission and Public Engagement initiatives
7. Fund 50 new proof-of-concept Civic Mission and Public Engagement activities in support of Covid-19 revival and renewal, across all Colleges
8. 5 Civic Mission / Public Engagement projects involving Welsh Universities aligned to the Wales Innovation Network KPIs by 2023

5.2 How will your strategic approach in this area align with HEFCW's [Research and Innovation: the Vision for Wales](#)? Select the pillars supported:

- Excellence
- Place
- Innovation
- Collaboration

### 5.3 How do your strategic ambitions for civic mission and public engagement support the Vision's goals, milestones and ambitions?

**Excellence** – Our Civic Mission activities will ensure that staff and students deliver excellent high-quality initiatives to our local communities, aligned to the Vision's statement that, **'university research will contribute to increased productivity in the industrial base and increased wellbeing for the people of Wales, ultimately raising the economic and social prosperity of Wales.'**

**Place** – The Vision states that universities **'will articulate and embrace their civic mission and role, engaging actively within their local communities and involving the public in their research activity'**. Our Civic Mission Strategy has a strong sense of place, with the School Governors and Community Gateway Projects helping deliver **A More Equal Wales** and **A Wales of Cohesive Communities**. This theme will be boosted between 20-23 via our new Civic Mission and Public Engagement Funds.

**Innovation** – Our approach to Civic Mission aligns to the ambition for **'Wales to be recognised as a leader in innovation, enterprise and entrepreneurship and skills development'**, including ensuring our communities develop the skills and confidence to become innovators in their own rights, driving our place-based commitment to a strong, resilient civic society.

**Collaboration** – Our civic mission and public engagement activities will be co-created with local communities and other stakeholders to ensure we develop meaningful change aligned to the needs of our partners, aligned to the Vision statement: **'Collaboration and partnership working is key to delivering increased productivity, building trust and delivering success. It is fundamental to the Welsh Government's ambitions set out in the Well-being of Future Generations Act 2015'**.

## Section C: Alignment to policy and priorities

### 6. Wales and UK Policy

We outlined in Section 1 the seven principles that underpin our Innovation Strategy, and which drive our proposed request for funding from ICDF / RWIF. With regard to Wales and UK Policy, specifically:

1. The **WG's [Prosperity for All: Economic Action Plan](#)**, which at its heart aims to **grow the economy while reducing inequality**, aligns to our plans to (a) leverage multi-million pound investments into Wales in collaboration with Welsh, UK and international companies, (b) support effective Civic Mission and Public Engagement projects aimed at a more equal and resilient Wales and (c) contribute to skills development via working with businesses and strategic partnerships. This

ensures that we are, and will continue to, make significant contributions to this critical Action Plan.

2. The [UK Industrial Strategy](#) is designed to ‘**boost productivity by backing businesses to create good jobs and increase the earning power of people throughout the UK with investment in skills, industries and infrastructure**’. Embedded within our Innovation Strategy is a focus on growth in skills, industries and infrastructure, aligned to boosting economic productivity in our region. Our proposed Wales AI Hwb and CSConnected are excellent examples of this approach in practice, as are the other priority areas mentioned throughout this document; all underpin our future ambitions for inward investment to drive R&D in our region. Cardiff has research strengths in each of the Industrial Strategy’s four [Grand Challenge areas](#) and via strengthened external partnerships with industry enabled through RWIF 20-23 funding, we will be in a stronger position to leverage investment into Wales and bring further economic benefit.
3. The **Cardiff Capital Region** has an ambitious Industrial and [Economic Plan](#) focused on ‘regional priorities to boost economic productivity and accelerate inclusive growth, including: (a) Compound Semiconductors, its supply chain and applications; (b) FinTech; (c) Cyber Security Analytics; (d) Artificial Intelligence and Data Science; (e) Creative Economy; (f) Life sciences, specifically medical devices and diagnostics sub-sectors and (g) Transport Engineering. It is clear from this list that Cardiff University has considerable R&D expertise that aligns to these priority sectors, and CCR / Cardiff are already working in partnership on large-scale proposals which bring together regional businesses, HEIs and other organisations aligned to delivery of skills, innovation and new business needs in these areas (see other Sections in this document for examples). CCR’s priorities also overlap with the emerging themes of the **Western Gateway**, presenting additional opportunities for larger-scale collaboration across the South West and Wales regions.
4. The [Welsh Government’s International Strategy](#) has three core ambitions, to raise Wales’ profile on the international stage, to grow the economy and establish Wales as a globally responsible nation. Cardiff University has partnerships with Universities across the globe including strategic partnerships with KU Leuven (Belgium), Xiamen University (China), Unicamp (Brazil) and growing relationships with the Universities of Bremen (Germany) and Waikato (New Zealand). The Welsh Government’s International Strategy showcases three distinct industries in which Wales excels - cybersecurity, compound semiconductors and the creative industries: all are areas where Cardiff has significant research and innovation capacity that will be boosted via RWIF investment.
5. [The Nature Recovery Plan for Wales](#) is aimed at improving biodiversity within Wales and aligns to the ‘Resilient Wales’ goal of the Well-being of Future Generations Act. Cardiff is in a good position to support this, while ensuring that we look forward towards reduction of Wales’ carbon footprint. Cardiff’s Centre for Climate Change and Social Transformations (CAST) looks at human behaviours related to climate change, developing interventions to support positive behavioural change. Via working with CAST, and our broader strengths in Environment and Climate, we will ensure that our Innovation Strategy is aligned the aims of The Nature Recovery Plan for Wales.

## 7. Meeting the requirements of the UK Knowledge Exchange Concordat

I can confirm that Cardiff University has engaged fully in the development of the UK Knowledge Exchange Concordat and we are committed to the principles as outlined in the consultation. Specifically:

### **The Eight Guiding Principles:**

1. **Mission:** *Knowledge exchange is a recognised part of the overall university strategy. We have a clear understanding of the institutional role and the purpose of KE and whom the intended beneficiaries are.*

Knowledge exchange (KE) is an integral part of TWF 2018-23.

2. **Policies:** *We have clear policies on all the types of KE that we undertake and we ensure they are understood by staff, students, collaborators and beneficiaries.*

Cardiff has clear policies covering KE. All staff appointed via RWIF funding will be supported to ensure they understand the Institution's KE policies, and the increased training and support provided via RWIF will support broader understanding in staff, students, collaborators and beneficiaries.

3. **Engagement:** *We have clear access points, engagement mechanisms and policies developed to suit the needs of a wide range of beneficiaries working with institutions as publicly funded bodies.*

Our Innovation Strategy will support staff and students to communicate and work effectively with external stakeholders, as well as local communities, and better co-ordination of activities and delivery of our new Cardiff Innovation Campus will ensure clearer access points, policies and engagement mechanisms.

4. **Working effectively:** *We make sure that our partners and beneficiaries understand the ethical and charitable regulatory environments in which our institution operates and we take steps to maximise the benefit to them within that context.*

We ensure our partners and beneficiaries understand the HE regulatory environment providing the foundation for strong, long-lasting and effective partnerships.

5. **Capacity building:** *We ensure that our staff and students are developed and trained appropriately to understand and undertake their roles and responsibilities in the delivery of successful KE.*

Enhanced training programmes, funding for proof-of-concept activities and effective evaluation of our activities allows ongoing refinement, and helps our staff and students deliver effectively aligned to their roles and responsibilities.

6. **Recognition and rewards:** *We recognise the achievements of our staff and students who perform high-quality KE activities.*

We hold an annual Innovation and Impact Awards event for staff, and an Enterprise Awards event for students. Innovation is also a recognised activity within the University's promotion pathway for academic staff, and included in workload modelling.

**7. Continuous improvement:** *We proactively strive to share best practice with our peers and have established processes for learning from this.*

Cardiff has established best practice in KE activities, and works with many other HEIs, businesses and public sector organisations, as well as local communities, to share this information, and learn from others.

**8. Evaluating success:** *We undertake regular institutional and collective monitoring and review of our strengthening KE performance using this concordat and through regional, national or international benchmarks to inform the development and execution of a programme of continuous improvement.*

Investment in a team to support monitoring and review of KE will enable enhanced data collection, monitoring and analysis of our performance, aligned to the delivery of continuous improvement.

## 8. Well-being of Future Generations Act 2015

**Our research and innovation priorities are strongly aligned to the seven goals of the Well-being of Future Generations Act 2015:**

**A Healthier Wales** - Our £10M Wolfson Centre for Adolescent Mental Health will develop innovative approaches to address childhood mental health disorders, including potential increased for Covid-19.

**A Prosperous Wales** – Investment in CSConnected will deliver technological innovation in healthcare, energy and communications.

**A Resilient Wales** - Collaborative working across the South West and Wales aims to deliver a super-cluster on the environment and climate, fuelling delivery of net zero carbon targets.

**A More Equal Wales and A Wales of Cohesive Communities** – The Wales AI Hwb will accelerate digital innovation, and develop data academies to generate a data science skills pipeline, while SPARK will deliver post Covid-19 social sciences research fundamental for a future safe, sustainable and socially-resilient Wales, as well as social entrepreneurs equipped to support post Covid-19 revival and renewal.

**A Wales of Vibrant Culture and Thriving Welsh Language** – Clwstwr Creadigol provides an innovation R&D platform for independent companies, SMEs, micro-businesses and freelancers to compete with global, highly integrated media companies, as well as promote the Welsh Language.

**A Globally Responsible Wales** – Cardiff's research has a significant global footprint. Our support for developing countries, via the Global Challenges Research Fund has had a real impact in tackling societal challenges, such as habitat loss and conservation strategies in the world's biodiversity hotspots, prevalence of mental health issues in developing countries, and resilience of ground water sources in sub-Saharan Africa.

**Cardiff University is also committed to the five ways of working.** Specifically, we will:

**Balance short- and long-term needs** through providing innovative training for our staff, and supporting secondments to obtain new skills, and build resilience in terms of succession planning

**Ensure integration** through the alignment of our Innovation activities to delivery of outcomes of benefit to the seven Future Generations wellbeing goals

**Take preventative** steps to identify and mitigate against challenges before they arise, thereby preventing major problems and issues with our Innovation Strategy; this includes consideration of how Covid-19 may affect delivery of our KPIs, and agility in use of spend where challenges become insurmountable

**Listen to our** stakeholders to ensure that we can undertake joint working aligned to their needs, as well as our own and those of our communities, developing effective successful collaboration

**Involve** our stakeholders and share with them our ambitions for delivering the seven goals of the Well-being of Future Generations Act.

## 9. Impact on Welsh Language

Cymraeg 2050 is designed to increase Welsh language use, with three themes:

**Theme 1** – Increasing the number of Welsh speakers to 1 million by 2050

**Theme 2** – Increasing the use of Welsh so that by 2050, 20% of the population are using the Welsh language (up from 10% in 2013-15)

**Theme 3** – Creating favourable conditions – improving the socioeconomic infrastructure of Welsh speaking communities

Themes 2 and 3 are most appropriate in this context.

For Theme 2, Welsh Language use will be encouraged in all our Innovation activities, including offering our innovation training courses in the medium of Welsh (dependent on recruitment of a Welsh speaker). We will incorporate Welsh into our RWIF fund names, as we did for our Disglair (meaning 'brilliant') University Research Leave scheme, using the Welsh language as part of our innovation brand. When providing support to students setting up their own companies, we will encourage use of the Welsh Language within their businesses.

Under Theme 3, via our School Governors Project, we will encourage Welsh-speaking staff to become School Governors. Furthermore, through our Grangetown Community Gateway project we will deliver workshops and events in the medium of Welsh and create networks for Welsh speakers and those who wish to learn the language. Our Civic Mission and Public Engagement schemes will be expected to be accessible to those speaking Welsh and English.

## Section D: financial assurance

### 10. Use of Research Wales Innovation Funding

*How is your RWIF allocation 2021/22 being used to deliver the strategy set out in Section B, and what are your anticipated priorities for the use of RWIF funds in future years? [250 words max – or append a table outlining broad investment areas]*

### 2021/22 Plan

Our plan for spending the RWIF 2021/22 allocation (£2,442,123) is provided in the table below. RWIF 2020/21 involved recruitment of new professional support positions across all parts of our Innovation Strategy, all of which will require continued funding in RWIF 2021/22. These salaries will cost approximately £1.3M of the 2021/22 allocation. The remaining funding of approximately £1.1M will be spent on supporting further projects through our Innovation for All programme (the first round of the programme is funded through 2020/21 funding), launching our new Cardiff University Innovation Development Scheme (CIDS) and membership of SETsquared.

Area	Activity / team being funded
All	Continued employment of <b>Innovation Strategy Business Manager</b> to coordinate delivery of the strategy
Commercialisation / Income generating activity	SETsquared Partnership – continuing membership fees
	Continued employment of - <b>Major Bid Development Team</b> Supporting large, multi-partner collaborative bids in our priority research areas. - <b>Translational Research Officers</b> Increasing capacity in our pipeline of translational projects - <b>Paralegal Officers</b> Enhancing capacity in contract sign-off and increase opportunities for tender bids
	<b>Translational Kick-start and Catalyst Fund (part of the Innovation for All programme)</b> Second round of funding for translational research activity to prove marketability of innovation ideas, including prototype development, and then develop projects further along the pathway
New Business / Skills Development	Continued employment of: - <b>Impact Team</b> Leading on delivery of impact and policy training, supporting working with external partners and managing our impact accelerator schemes - <b>Innovation and Enterprise Managers</b> Supporting the newly created University Innovation Institutes - <b>Strategic Partnerships staff</b> Supporting the establishment of new strategic partners aligned with our UIIs and other strategic entities - <b>Student Enterprise Officers</b> Supporting the embedding of student enterprise in degree programmes and coordinating the new Cardiff University Innovation Development Scheme (CIDS)
	<b>Impact Fund (part of the Innovation for All programme)</b> Second round of funding for impact activity linking research and external organisations, seeding new partnerships and growing existing collaborations
	<b>Cardiff University Innovation Development Scheme (CIDS)</b> Paid placement scheme for students to work on innovation and enterprise projects with research leaders and business
Civic Mission and Public Engagement	Continued employment of: - <b>Civic Mission Officer</b> Enhancing support for civic mission projects across the University - <b>Digital Communications Officer</b> Developing communications strategies for civic mission and public engagement activities - <b>Public Engagement Manager</b> Working across Impact and Civic Mission teams to support high quality research-based public engagement activities
	<b>Civic Mission Priorities Fund</b> Two new strategic areas will be funded aligned to the University Civic Mission sub-strategy: (Green) social prescribing in the Valleys, and Children's University in collaboration with Cardiff Council
	<b>Civic Mission Fund (part of the Innovation for All programme)</b> Second round of funding dedicated to supporting new Civic Mission activities which have the potential to address the challenges generated by Covid-19

	<p><b>Public Engagement Proof of Concept Fund (part of the Innovation for All programme)</b> Second round of funding for proof-of-concept public engagement designed to underpin future grant applications</p>
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### Future ambitions

In future years of RWIF funding, we will continue funding our core professional staff who are delivering the strategy in order to see maximum benefit from their work in supporting innovation project pipelines and capacity-building activities. We will review the success of our funding initiatives from the first two years of RWIF funding (Innovation for All programme, CIDS, Strategic R&D Fund, Civic Mission Priorities Fund) to determine which areas to prioritise in 2022/23. These initiatives will then be supported as required to expand the scale and number of awards.

<b>Section E: Regulatory Requirements</b> <i>NB: HEFCW may request further information / clarification on any of these areas</i>	
i) <a href="#">Welsh Language Standards (2018)</a> <i>[Use the drop down menu]</i>	This strategy complies with Welsh Language Standards 2018
ii) Equality Impact Assessment <i>[Use the drop down menu]</i>	This strategy has been Equality Impact Assessed
iii) <a href="#">Well-being of Future Generations Act (2015)</a> <i>[Use the drop down menu]</i>	This strategy will contribute towards the aims of the WFG Act 2015
<b>Signature: Vice Chancellor</b>	
<b>Date</b>	10/01/2022