

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 refreshed to ensure we can play 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 activities placing us in a competitive position for national and international recognition as a leading driver of research and innovation, in areas of considerable importance to renewal post Covid-19;
- 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 their 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 enhancing opportunities to deliver enterprise 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 \(CCR\)](#) 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 (via membership of the renowned [SETsquared Partnership](#)).

Central to the delivery of this ambitious plan will be the recruitment of an **Innovation Strategy Business Manager** (funded via RWIF). They will coordinate and integrate the different strands of our Innovation Strategy, working directly to the Pro Vice-Chancellor Research, Innovation and Enterprise.

2. Capacity Grant

Capacity Grant

The capacity grant, and subsequently RWIF 21-23, will pay for Cardiff's **Major Bid Development Team**, which supports the development and delivery of strategic large-scale research and innovation bids. **Two new Senior Bid Developers** will be recruited providing much-needed additional support for major large-scale bids.

Innovation Capacity Development Fund (ICDF)

ICDF investment will address 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 our strategic partnerships.**

(2) Enhanced monitoring of our innovation, translation and commercialisation activities, including data and economic analyses for large-scale bids with business.

Four new Innovation and Enterprise Managers and two new Strategic Partnerships Managers (one through RWIF) will be appointed to generate new collaborative research partnerships aligned to major bids, commercialisation opportunities, place-based skills development, student enterprise activities and business-oriented PhD doctoral training entities. **A new Strategic Research and Innovation Data Analyst and a Performance Metrics Officer** will be appointed to provide the data and economic analyses required for large-scale bids and to monitor the performance of our activities.

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

Two Student Enterprise Officers (1.5 FTE) will bring added capacity to our student enterprise team (see Section 4 for more details), additionally supporting our new enterprise training programme for graduates.

- **(4) Additional support for specialised training, business investment and commercialisation, including generation of spin-outs. (5) Support to address bottlenecks in contracts.**

Funding for the membership fees and start up fund for our [SETsquared Partnership](#). Recruitment of an **extra Paralegal Officer** to reduce load on our contracts team, with a further officer appointed subsequently using RWIF 21-22. Recruitment of a **new Translational Research Officer**, to be trained in spin-out development, working with our areas of major research strength, with a further officer appointed using RWIF 21-22.

- **(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 \(SPARK\)](#).**

A new **University impact team** will deliver impact and policy training, support working with external partners, manage our impact accelerator schemes and develop greater engagement and influence with Welsh policymakers (see Section 3).

- **(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 and Public Engagement Manager** will provide oversight and be responsible for the delivery of KPIs and proposed outcomes, supported via the procurement of a **data capture tool**. ICDF will support the continued employment of our **Digital Communications Officer**, who will work with staff / students / external partners to 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 3rd in the UK for commercialising its research via company formation (<https://octopusgroup.com/newsroom-news/research-to-riches-report-highlights-untapped-potential-of-uk-universities/>). In the last three years, we have seen our translational research income rise by 160% to >£13m, reflecting strong internal demand for early investment in commercial opportunities. There is significant potential to increase this via ensuring staff are more aware of the value of considering IP protection and commercialisation, and diversifying 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 will help 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 2nd for impact; from our REF 2021 assessments, we estimate over 1/3 of our staff undertake impact activities with external partners. RWIF will be used to support a dedicated University impact team, as well as an additional Translational Research Officer with experience of commercialisation, including spin-outs. This team will work 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) consider approaches to address our concerns around equality, diversity and inclusion, and (c) in working more closely with staff at early stages of their research, ensure 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. These teams will also support staff in applications for external funding for translational activities.

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

Via RWIF funding, we will create two new funds. An **Impact Fund** will support potential impact, jointly working with external organisations, on work 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. A **Translational Kickstart Fund** will be 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 – will be given dedicated support from our Translational Research Officer, with the aim of developing their ideas / outcomes effectively and generating more sustainable external funding.

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

Cardiff has seen a steep upwards trajectory in research awards in 19-20, including many with complex contractual and IP requirements, aligned to collaboration with multiple businesses / partners. Our plans to grow these types of award 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 will fund a new Paralegal Officer to address this bottleneck**; they will focus on delivery of straightforward grants plus contracts for procurement tender opportunities from business / public sector seeking skills and training programmes. Future RWIF 20-21 will recruit a further Paralegal to maintain capacity and quick contract sign-off.

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 / RWIF will fund membership and start-up costs for joining this partnership** supporting our business partners to access University R&D and investment, whilst upskilling our academic communities to work more closely with external organisations. By harnessing the brand capital of SETsquared, we will 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. 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, (b) our £4M collaboration with Takeda into new drug development approaches for mental health and neurological disorders, and (c) £43.7M success for a new South Wales compound semi-conductor 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 Cardiff City Region (CCR) 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.**

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.

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. ICDF / RWIF funding will be used to diversify our R&D along investment supply chains, supported by our **new R&D Strategic Investment fund**, while also providing new opportunities for Cardiff graduates to work directly with academic researchers and businesses on enterprise activities.

3. Growing capability and capacity in staff and students

Balancing the strategic approach at scale outlined above, and aligned to our commitment to support 'Innovation for All', RWIF will additionally support 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 Kickstart scheme**, which has been previously piloted to great success in the College of Biomedical and Life Sciences will now be expanded across the University supporting early-stage innovation. Similarly, **our University Impact Team** will support all staff to develop their impact projects, ensuring that outcomes from those are also considered for commercialisation, and protection of IP.

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 is off-set by healthy CPD in a number of other areas, including Business, Medicine and Healthcare.

In 20-21, we will review our strategy to CPD, placing greater emphasis on CPD delivered via our priority research areas and strategic partnerships, aligned to the identified needs of businesses and organisations in those sectors. For example, CSConnected aims to develop a wider and deeper CPD programme providing a model for expansion to other priority R&D areas where there is a skills need, and where HE-FE-industry collaborations are uniquely placed to address that gap. For example, Cardiff University academics delivered a 1-day course to FE lecturers to upskill and raise awareness of compound semiconductors and photonics. The University is represented on the Skills Education Group that is now investigating skills gaps in this sector, working with FE to develop a pipeline of education programmes that are applicable for the anticipated up-chain and down-chain upskilling requirements of the workforce. This provides an interesting model that could be expanded to grow and diversify Cardiff's CPD offering, in synergy with the rest of our Innovation Strategy.

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.

2018/19 value is £17.2M

Target for 19/20 is £19.5M

Target for 20/21 is £21.6M

Target for 21/22 is £23.8M

Target for 22/23 is £26.2M

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. 10% increase in our license number starting with 10 as the baseline, increasing by 10% per annum to 20 by 2023.
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.

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 Data Nation Accelerator, 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 3 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 that provide skilled jobs, boost economic productivity and diversify business opportunities along key supply chains.**

A. Growing entrepreneurial staff and students

1. *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 Team**, and the **Translational Research Officer**, growing our internal support for staff looking to develop their own businesses (see Section 3).

2. *Increasing student enterprise activities*

Established Cardiff graduate start-ups (lasting 3 years or more) have increased by 38% over the last two years, 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 will support **two additional Student Enterprise Officers** (augmenting our current 3.5 FTEs). These individuals will work with the team to deliver the following activities:

- Support for [The Enactus Society](#), a student-led society committed to using entrepreneurship for positive social change;
- Increasing academic staff champions by developing 'business challenges' on our online platform as a curricular resource;
- The [Syniad Scheme](#) (Welsh for idea); aligned to the Welsh Government's Prosperity for All: Economic Action Plan this scheme encourages innovation and entrepreneurship focused on Cardiff's research and innovation priorities. For example, in 2019 students pitched research-based solutions to the Cardiff's Centre for Climate Change and Social Transformations (CAST).
- The [Ymlaen scheme](#) (Welsh for onwards) places student entrepreneurs and freelancers in co-working hubs (e.g., Tramshed Tech, Rabble) to develop their business alongside a community of likeminded mentors. After December 2021 (when the Youth Entrepreneurship grant ends) we will evolve the Ymlaen scheme, developing a financially sustainable model linked to our Social Sciences Research Park (SPARK) Innovation Incubator, providing the ideal environment for fostering social entrepreneurship.

In addition to supporting these ongoing initiatives, we wish to launch a new pilot scheme aimed at giving students and recent graduates experience of real-life innovation projects aligned to our research and innovation strengths. The scheme, provisionally named Cardiff University Innovation Development Scheme (CUID) will offer paid placements allowing participants to work on university innovation and enterprise projects, with research leaders and business. This will be funded via the proposed **RWIF R&D Strategic Investment Fund** (see Section 3) and extended using future RWIF funding if successful.

With more capacity in the student enterprise team, we will also be able to embed 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 the course of their studies.

3. Support for collation and evidenced based use of performance metrics

Using ICDF funding we will recruit a **Strategic Research and Innovation Data Analyst and a Performance Metrics Officer** to manage the outputs and deliverables of our innovation activities, including analysis and provision of data and economic evidence underpinning the need for large-scale funding bids.

B. Support for the generation of spin-outs

1. Translational Research Officer to support spin-outs

Cardiff is in the top half of the Russell Group for spin-outs, with 33 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, we propose that our **new Translational Research Officer** be 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). 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).

2. 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 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.

C. 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.

1. 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 a 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 will start studying in 2020-21. The four core modules from the MSc are also available to study on a standalone basis for continuing professional development (CPD).

We are working with 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. Maximising opportunities from these partnerships requires ongoing, experienced and dedicated professional support: **IDCF/RWIF will fund two new Strategic Partnerships Managers** to support work on these.

2. 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. We will continue to utilise these schemes to increase business collaboration across all our research strengths, seeding new partnerships that 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 enterprise training scheme.

D. 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.

Our CSConnected 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 deliver:

1. Increase the generation of new spin-outs with high-growth potential by 50%, from 0.8pa 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 6th 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 to the Syniad competition from 19 in 2018/19 to 60 in 2023.

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 Data Nation Accelerator, 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 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 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 which will support a coherent approach to civic mission across Wales, and will enable us to share best practice to get the best outcomes for our activities, which include:

- **Focus on high-value activities 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. Our focus here is on our work with local communities:

1. Delivery of our civic mission and public engagement activities

We will use ICDF to recruit a Civic Mission and Public Engagement Manager with oversight for delivery of this component of our Innovation Strategy, ensuring integration and alignment with our work on broader innovation and enterprise. This person will be responsible for monitoring the delivery of KPIs, and proposed outcomes, which will be supported via procurement of a **data capture tool** (funded using ICDF). The manager will be supported by the continued **employment (via ICDF) of our Digital Communications Officer**, who will work with staff / students / external partners to showcase our Civic Mission and Public Engagement contributions effectively and support the development of an effective communications strategy for our activities in this area.

2. Flagship Civic Mission Initiatives

In 20-21, we will continue 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](#) is a promising initiative designed to increase the number of serving staff school governors as well as develop a new school governors programme. Cardiff now has 51 school governors amongst our staff and an established governors' network. We also developed a toolkit to support governors in fulfilling their role effectively. RWIF funding will be used to evolve this project into its next phase, for example, developing online curriculum support for school teachers through the University's Curriculum Support Resource, with a particular focus on identifying and supporting needs aligned to the significant educational disruption caused to children, teachers and schools from Covid-19 (e.g., how to deliver effective blended learning; mental health support and provision, and management of data and cyber-security challenges). Complementary activities for schoolchildren will also be developed, providing them with co-production roles in developing high-quality public engagement experiences aligned to developing solutions to future global challenges caused by Covid-19.

Our [Community Gateway Project](#) 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) has helped convert a vacant bowls pavilion into a community venue, with the build due to complete in summer 2020. To date, the project has 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, we will consider how this successful community collaboration could be expanded to other disadvantaged groups in Cardiff, especially where inequalities have been (or will be) created via Covid-19 (e.g., around access and expertise in utilising digital

technologies). Involvement of student ambassadors as part of the Community Gateway Project has helped reach minority communities, and we will expand this model growing involvement of our students to contribute to addressing Covid-19 inequalities.

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

Via Wellcome Trust funding we have 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 is complemented by a College Public Engagement Network to drive co-ordinated public engagement initiatives across Schools in a co-ordinated way, including consideration of widening participation, co-production with under-represented public groups and communities, and patient involvement in research and innovation. There has been significant demand for the training and support available in this College across other parts of the University, and the new **Civic Mission and Public Engagement Manager** will extend this approach across the University, including management of our new funding schemes (see below), as well as the development of successful external funding bids.

4. Civic Mission Covid-19 Recovery Catalyst Fund.

A new fund will support novel Civic Mission initiatives from our research staff and students aligned to Covid-19 initiatives. Funding will be provided for ideas that align to, and build on, our research and innovation strengths. For example, Cardiff's free mental health support scheme for doctors has now been extended to every frontline healthcare worker in Wales to help staff tackling the coronavirus pandemic ([Health for Health Professionals Wales](#)). The scheme allows NHS Wales staff to call a confidential helpline staffed by healthcare professionals, access face-to-face counselling sessions and access self-help tools and online resources.

5. Public Engagement Proof of Concept Fund.

The public engagement proof-of-concept fund was used successfully in our Wellcome Trust award to help staff get hands-on experience of public engagement, while delivering novel approaches to work with under-represented communities. RWIF will expand this across the University, developing skills and capacity in public engagement in our staff (particularly early career researchers), and fund (with direct input and support from our Civic Mission and 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 as 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. Train 600 new staff in effective delivery of Public Engagement activities
9. Obtain external funding for 9 Civic Mission and Public Engagement activities

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. CSConnected is an excellent example of this approach in practice. 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 City 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 climate, we will ensure that our Innovation Strategy is aligned to 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 Cardiff University's strategy document, The Way Forward 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 is 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 – Working with Welsh Government our Wales Data Nation Accelerator aims to support 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

Table 1: Proposed plans for RWIF and ICDF funding in 20-21. Staff appointed in 20-21 via RWIF will be further funded via RWIF in 21-23, ensuring delivery of our three-year Innovation Strategy KPIs.

Area	Activity / staff being funded	Cost	RWIF Total
All	Recruitment of an Innovation Strategy Business Manager To coordinate all streams of activity under the RWIF strategy	£65,007	£65,007
Commercialisation / Income generating activity	SETsquared Partnership	£1,116,443	£714,434
	Major Bid Development Team		
	Translational Research staff		
	Paralegal staff		
	R&D Strategic Investment Fund Innovation and enterprise funding for our research priorities, including delivery of CUIDs (new student enterprise projects)		
	Translational Kick-start (Proof of Concept Fund)		

	Funding for early translational activity to prove marketability of innovation ideas, including prototype development		
New Business / Skills Development	Impact team	£1,122,924	£263,405
	Innovation and enterprise staff		
	Innovation Performance Metrics Team		
	Student enterprise staff		
	Staff to manage strategic partnerships		
	Impact Fund: Funding for impact activity linking research and external organisations, seeding new partnerships and growing existing collaborations		
Civic Mission and Public Engagement	Civic Mission and Public Engagement Manager	£416,335	£300,000
	Digital communications Staff		
	Civic Mission Priorities Fund: Future schools and communities		
	Civic Mission COVID-19 Recovery Catalyst Fund: Dedicated to supporting new Civic Mission activities which have the potential to address the challenges generated by Covid-19		
	Public Engagement Proof of Concept Fund: Funding for proof-of-concept public engagement designed to underpin future grant applications		
	Data capture tool for civic mission activities		
		£2,720,709	£1,342,846

Future ambitions

RWIF 20-21 involves recruitment of new professional support positions across all parts of our Innovation Strategy, all of which will require continued funding in RWIF 21-23. In the current financial climate, the sooner there was confirmation of that additional funding the easier it is for us to recruit the strongest and best candidates for those roles, ensuring effective delivery of the core activities in this Innovation Strategy. These salaries will cost approximately £1.5M of our future RWIF awards in each of 21-22 and 22-23, with additional staff requirements as outlined below.

In RWIF 21-23, we would wish to augment those staff via recruitment of (a) a further Paralegal Officer, (b) further Translational Research Officers, (c) an Impact and Innovation Funding Officer to manage our internal funding schemes and (d) further support for CPD, aligned to our refreshed strategy. There will be requirements for support for the Youth Entrepreneurship Programme (which will finish in 2021), as well as consideration of needs aligned to the success and demand for student enterprise support provided in 20-21.

Additional funding will also be required to expand the scale and number of awards provided via our R&D Strategic Fund, the Translational Kick-start (Proof of Concept) Fund and Impact Fund, as well as Civic Mission Covid-19 Catalyst / Public Engagement Funds.

Section E: Regulatory Requirements <i>NB: HEFCW may request further information / clarification on any of these areas</i>	
i) Welsh Language Standards (2018) <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) Well-being of Future Generations Act (2015) <i>[Use the drop down menu]</i>	This strategy will contribute towards the aims of the WFG Act 2015
Signature: Vice Chancellor	
Date	Click or tap to enter a date.