

Glasgow Caledonian University – University Innovation Fund Submission 2018-19

Revised/supplementary material to the original submission, reflecting the intended use and impact of additional funding, is italicised.

UIF Platform Grant

Our Strategy 2020 sets out the University's vision, as the University for the Common Good, to deliver social benefit and impact through education, research and innovation. We will match the platform grant with ongoing activities and support to promote and increase the innovative capacity of the University, through: applied research and knowledge exchange for key sectors of the Scottish economy, student enterprise, Graduate and Degree Apprenticeships, social innovation, and public engagement. The Research and Commercialisation Directors' Group acknowledges that for the best use of resource, each university will be involved with a different combination of work towards the sector outcomes. GCU participates in the groups for outcomes one to seven and seeks to align our skills to each outcome to ensure full participation.

UIF Outcomes Grant

Outcome One: Demand stimulation

GCU actively engages with staff to ensure that we continue to deliver a strong pipeline of KTP projects from our areas of research expertise, whilst broadening our Innovate UK applications to other Collaborative Research and Development bids and Industrial Strategy Challenge Fund bids. We work closely with the West of Scotland KTP Centre to deliver training, which will enhance skills for effective collaboration within the academic and SME business base (**PA5**). We have a long and successful partnership with Interface, and support the SFC Innovation Voucher Scheme and follow on schemes. In the last ten years we have received funding for more than 100 new projects with Scottish SMEs, worth over £988k. One such project involved one of the first pooled SFC Innovation Vouchers with Gorbals Community Group (Old Gorbals Pictures & Heritage Group). Regular staff seminars include speakers from Interface, Scottish Enterprise and the KTP Centre. As a partner in CEED Scotland, we host events at GCU for businesses to come and view our facilities and hear about our expertise. Our Annual "Research Week" event provides opportunities for staff and external stakeholders to interact. GCU's University to Business Education strategy is delivered through our School for Work Based Education, and focuses on the development of bespoke, corporate academic programmes at undergraduate and postgraduate level, according to the knowledge gaps and needs of the business. Industry links and collaboration with SMEs and large employers are managed through a combination of structured programme-specific advisory boards, dialogue with subject matter experts and business development outreach and engagement.

A key priority in stimulating demand for innovation services and simplifying access to University capabilities is taking a more collaborative approach to delivering a programme of Innovation Challenge events aimed at understanding and addressing key industrial challenges which can be developed into expressions of interest and used to influence future waves of the ISCF. A key aspect of these demand led workshops will be a focus on SME participation, supply chain development and leveraging the UK and international industry networks of all partners. GCU intends to be an active participant and in particular has key strengths and potential to lead consortia development in areas such as Construction, Health and Smart Technologies.

In AY 2018-19, we will:

- *Strengthen our focus on the Scottish Government priority economic sectors of Food and Drink, Energy, Creative Industries and Sustainable Tourism through our research centres whilst broadening our engagement across Financial Services and Life Sciences.*

- *Continue to work closely with the KTP Advisor to run a series of KTP drop in events and seminars to help staff to explore new opportunities for KTP and increase our KTP pipeline.*
- *Improve conversion of Innovation Vouchers to follow on collaboration activity and aim to move from transactional to longer-lasting, strategic relationships with Scottish and UK businesses.*
- *Working with individual Research Centres and Schools to tailor long-term UK funding solutions to increase our research income. Work with staff to develop a 'can-do' culture towards requests from SMEs and larger companies to encourage economic growth on a local and national scale.*

Outcome Two: Simplification/Commercialisation

The University is fully committed to the use of standard template agreements that have been developed by the RCDG Contracts group to simplify University-SME engagement **(PA7)**. GCU is continuing to work to implement the post-project protocol activity **(PA8)**, aligning our activity with the SFC Innovation Centres **(PA6)** and looking for ways to maximise opportunities from business partners to create new and innovative ways of working. This is illustrated by the work of the BEAM (Built Environment Asset Management) Research Centre, which has a strong partnership with the Construction Scotland Innovation Centre (CSIC). BEAM and CSIC co-hosted the 'BEAM Centre Inaugural Innovation Challenge Workshop' in September 2017. Ten industry partners attended and three of the eight ideas generated have subsequently secured CSIC Innovation Challenge funding. Funding for a fourth project is currently being explored with CSIC. GCU's focus is on building longer-term strategic relationships with companies, rather than one-off discrete interventions **(PA6)**. In 2017-18, we were awarded funding for two KTPs with SMEs which built on work carried out in earlier KTPs with GCU (with Geckotech and Stream). GCU is the only university in Scotland to undertake KTPs with the tourism sector (previously with Scottish Canals and currently with Historic Environment Scotland, linked to the Scottish Year of Young People 2018). The primary national indications for performance of National Tourism in Scotland, provided from GCU's Moffat Centre for Travel and Tourism, are vital in ascertaining the economic value of tourism to Scotland. Policy research has also informed city deal and city of culture applications and policy reviews. GCU is leading in a range of water related research projects that directly reinforce the 2020 Year of Scotland's Coast and Waterways.

Subject to sufficient funding support from other participating universities, GCU agree to co-fund a new Industry Challenge Innovation Manager post to work at the national level across Scottish HEIs and forms part of the new UIF collaboration framework led by RCDG. Part of the additional UIF funding will be used to co-fund this secondment during AY2018-19.

In AY 2018-19, we will:

- *Set up a new National and Commercial Innovation Unit to drive the innovation and entrepreneurial culture across the University through an integrated approach to Research and Innovation Support. This Unit will be led by GCU's Knowledge Exchange Manager and will oversee the delivery of the University Innovation Fund outcomes.*
- *Continue to implement the template contracts across the whole University, for contracts between Scottish SMEs and Scottish Institutions; and ensure that the post project protocol is implemented and a mechanism is in place to refer projects to other Universities.*
- *Support the RCDG Spin Out support group, to ease understanding and transparency of common principles adopted by Scottish HEIs and encourage new company formation.*
- *Redevelop the University's website to provide clearer navigation to targeted UKRI areas and Scottish Government priorities, including more interactive case studies for business users.*
- *Establish a SMART Technology Centre to harness the University's collective intellectual capital and advance fundamental theories, designs, methods, processes and tools about smart technologies through an application-led approach.*
- *Grow our pipeline of work with commercial clients in our Food Laboratory, which works with SMEs and large food companies carrying out a range of shelf life testing and nutritional analysis building upon*

our existing work with Abertay. A focus for the department of Biological & Biomedical Sciences is our work with large commercial partners on the viral safety challenges facing the food industry.

- We are exploring the option of signing up to Konfer (the UK-wide innovation brokerage tool developed by the National Centre for Universities and Business), working closely with the NCUB and its partners.
- The School of Engineering and Built Environment will broaden our commercial and collaborative research work with the private and public sector, including the development of a new Energy Data Information System Evaluation approach for Renfrewshire Council and development of new Estimating Techniques for Improved Business Performance for North Ayrshire Council.
- The Department of Computer, Communications and Interactive Systems (CCIS) at GCU will have secured three new KTPs this year on the use of blockchain for the food and drink supply chain industry, software systems integration using natural language processing and on automated image processing and analysis of outdoor physical infrastructure.
- The Built Environment Asset Management Centre (BEAM) will be focussing on work funded by the Construction Scotland Innovation Centre (CSIC) and Health Facilities Scotland (HFS). The Centre also aims to provide pump-priming for industry-focused innovation challenges in built-asset management areas.
- The Energy Monitoring & Diagnostic Systems group will build on its work with external Clients to design, develop, evaluate and deploy diagnostic systems and sensors for applications in energy and environmental monitoring. GCU has secured a new commercial R&D contract with Doble Engineering for the use of machine learning for power asset conditioning monitoring.
- The Moffat Centre will continue its groundbreaking work on route development. The Centre will also work on impact analysis on behalf of UK National Grid and Horizon Nuclear as well as working on tourism development in Ayrshire, Argyll and the Islands.

Outcome Three: Simplification/Greater Innovation

GCU's research strategy addresses three societal challenges (i) Inclusive Societies (ii) Healthy Lives (iii) Sustainable Environments. The broad themes we will focus on are: Public Health, Long-term Conditions, Social Innovation, Equalities and Justice, Urban Environments, and Efficient Systems. We are committed to encouraging mobility of staff between business and universities (**PA3**) and the transfer of the knowledge that we produce through our research is linked with the Scottish Government National Priorities in key areas. Our goal is to move from transactional to longer-term strategic relationships, delivering the three societal challenges. This will build upon our portfolio of strategic research partnerships with public, private and third sector bodies. This is illustrated by our work with Jacobs Engineering. In 2017 Jacobs (Glasgow) Highways Operations Division are undertaking a KTP with academics from the School of Engineering and Built Environment at GCU, to develop innovative and sustainable approaches and processes for protecting the water environment during major highway construction. GCU is committed to the development of Research and KE staff (**PA4**) and will continue to engage with PraxisAuril and ARMA. GCU holds the HR Excellence in Research Award. Our Graduate School Researcher Development programme includes developing research collaborations, research communication and research impact.

In AY 2018-19, we will:

- Support sector wide additional capacity through collaborative activity to target ISCF and UKRI innovation funding.
- Internally look at reporting of UIF, UKRI, Innovate UK and collaborative activities to assess how best these are presented internally on our internal dashboard system.
- Develop tailored KE funding packages with Schools, with the help of the Impact and Knowledge Exchange officers and help academic staff to deliver impact to society, public policy, private sector and the economy.

- *Deliver a programme of workshops to early career researchers to improve skills in industry engagement, including developing effective Pathways to Impact and funding support.*
- *'Enhancing researcher skills for business engagement' will be another key focus: working collaboratively through the UIF framework we will build on our existing strengths in the GCU Graduate School and our HR Excellence in Research Award; and share good practice and explore new mechanisms for opening up training opportunities to partner Universities on a reciprocal basis.*

Outcome Four: Entrepreneurialism

The University has a Strategy for Learning in place which supports the development of entrepreneurial and employability skills through core and/or co-curricular activities such as volunteering, internships, and authentic projects and for such activity to count towards a degree award **(PA1)**. Such activities are highlighted in our Annual Enterprise Fair, Enterprise Funding availability (through our partnership with Santander Universities) and in our bi-monthly Enterprise lunch workshops, showcasing successful GCU entrepreneurs and Enterprise Mentors **(PA2)**. We actively promote graduate enterprise via our UHatch enterprise incubator which has registered over 45 graduate businesses with a collective turnover of £1.4 million,. Our graduate companies are active recipients of awards from: RBS Edge Funding, Enterprise Campus, Converge Challenge, Virgin Money (Vroom), Santander Enterprise Universities, Stirling District Council and the Enterprise Value challenge (via trading projects) **(PA1)**. In 2017, the University hosted the International Entrepreneurial Educators Conference. Our approach is closely aligned with the objectives of other external networking and support facilities including: Enterprise Campus, Entrepreneurial Spark, the Scottish Institute for Enterprise, the Santander Universities network, and Converge Challenge. Examples of recent activities include training in the development of pitching skills for aspiring entrepreneurs and access to the Santander Universities 60 second pitch awards and enterprise portal.

In AY 2018-19:

- *We will refine the process and governance of U-Hatch, to ensure that its activities work within the Framework defined by the RCDG Entrepreneurialism working group. U-Hatch will also seek to create pipelines of activity with other areas such as the Student Association feeding into the Leadership Programme which incorporates streams focused on Social Innovation. It will also capitalize on its recent successes under the RSE programme to further boost the development of new projects.*
- *GCU's international experience in the development of social innovation support, and its unique network within the Social Enterprise community (eg collaboration with CEIS for the delivery of the Social Enterprise World Forum) will be further strengthened through new initiatives overseen by a new social innovation manager and opened up to other members of the RCDG Social Enterprise strand;*
- *The University will be establishing Social Innovation Knowledge Exchange Units in both Glasgow and Edinburgh (working alongside Social Enterprise partners such as The Melting Pot) as part of groundbreaking Europe-wide project (coordinated by GCU) to improve University engagement in social innovation and social enterprise through knowledge exchange.*

Outcome Five: International

We have established new international partnerships and projects that specifically aim at achieving the UN's 17 Sustainable Development Goals through social innovation, and exploring ways to lend social value to the knowledge produced by GCU. In particular, GCU has developed a series of projects under the European Commission's Capacity Building in Higher Education (CBHE) programme, and is the UK'S leading beneficiary with 12 projects, working with HEIs in lower and middle-income countries to build institutional capacity in research, teaching and learning, and social innovation. At a European level it will continue to lead the political drive for social change through various Horizon 2020 projects and in particular through a project under the Knowledge Alliances programme, 'Social Innovation through Knowledge Exchange' in partnership with universities and social enterprises from Portugal, Spain, Croatia and Germany. As chair of Universities UK European Network, GCU will continue to lead efforts to mitigate against the effects of leaving the EU. GCU is

committed to the UN Principles for Responsible Management Education (PRME) initiatives. GCU's Dr Alec Wersun has been appointed Chair-elect of the UK & Ireland Chapter of PRME. The GCU UHatch Director will deliver four training workshops in Guatemala in 2018, as part of a best practice model as part of the European funded project with Central America; Free Network: Participants 3er Taller. GCU's work based education frameworks operate internationally to deliver bespoke corporate or sector programmes transnationally to South Africa with other markets in development.

In AY 2018-19:

- *As part of our institutional support for GCRF we have established a Global Challenges and Sustainable Development Unit, whose remit will extend far beyond the limitations of attracting national funding. A number of DFID and Innovate UK initiatives will be developed through networks which have been nurtured over recent years and new collaborations, especially with private and third sector partners such as Challenges Worldwide.*
- *GCU has accumulated an impressive portfolio of international projects especially under the EU's Capacity Building in Higher Education Programme. The most prominent theme within these projects has been the development of units specifically established for supporting social innovation: the Southeast Asian Social Innovation Network(Malaysia, Thailand, Myanmar and Cambodia) and the Latin American Social Innovation (Chile, Colombia, Panama and Brazil). Another network in South Africa has established specific support for digital storytelling. Over the coming year the networks will be consolidated into a Global network for University – Social Innovation Interaction. These networks are growing and all Scottish HEIs will be invited to collaborate within them.*
- *Through its Centre for Climate Justice, GCU will continue to carry out work in the area of international development through research and partnerships in Malawi, Zambia, Rwanda, Ghana and Nigeria.*

Outcome Six: Inclusive growth and social impact

GCU's Yunus Centre for Social Business and Health investigates the relationship between social enterprises and third sector organisations and how these might impact indirectly on health through addressing upstream social determinants. As part of this programme we have funding from the Medical Research Council to develop methods to evidence this contribution. We have set up a series of knowledge exchange fora to share ideas and develop new innovative approaches to research social enterprise, and to influence policy, particularly around inclusive growth. As well as working with social enterprise representative groups through research council funded programmes, the Yunus Centre works closely with individual social enterprises to help them better understand, evidence, and improve their impacts. This is perhaps best illustrated through some of the University-funded PhD projects, which aim to meet our Common Good Mission through working with communities to deliver social impact **(PA10)**. GCU's longstanding commitment to community and public engagement is widely evident in the diversity of practice across all areas of work and the enthusiasm of staff and students to work with people in their communities beyond the university **(PA10)**. The GCU-led, EU-funded project, Common Good First project focuses on building a network to showcase and connect social innovation projects in South Africa and Europe. The Scottish Government's commitment to social innovation led them to see opportunities to build Scotland, and its social enterprises, into Common Good First. Our work under this outcome is underpinned by our participation in the prestigious AshokaU network, as the first Scottish institution to achieve Changemaker status in recognition of our commitment to embedding social innovation as a core value across the University's campuses. GCU has been a signatory to the National Coordinating Centre for Public Engagement's (NCCPE) 'Engaged University' manifesto since 2012. GCU's Engagement Map captures social innovation collaborations between GCU and the wider community.

In AY 2018-19: *As part of our refreshed University Research Strategy GCU has framed its research outputs under the UN's Sustainable Development Goals:*

- *We will continue to evolve our unique portfolio of social enterprise research and innovation projects, especially through the Yunus Centre, at a regional, national, and international level, including*

initiatives involving partners from the sector and at other Scottish institutions involved in providing sustainable and effective support to social entrepreneurs, funded through streams such as European Knowledge Alliances and Scottish Government's Social Innovation Fund.

- *The University has also established the Centre for Living which will make a direct and significant contribution to the UN's Sustainable Development Goals (3) – Good Health and Well-being which aims to 'Ensure healthy lives and promote well-being for all at all ages'. The Centre will bring together research expertise largely drawn from the School of Health and Life Sciences (SHLS) along with the co-hosted and Chief Scientist Office funded Nursing, Midwifery and Allied Health Professions Research Unit (NMAHPRU) and our strategic partnerships with Health Protection Scotland and NHS Lanarkshire. It will organise its research around two themes in (i) Public health and (ii) Long Term Conditions. The Centre will increasingly target global funding calls from UK and wider sources and therefore potentially contribute to the third UN sub-theme in 'Health systems and funding'. Furthermore, by extending the interdisciplinary base, inter-sector partnerships and international collaborations, the Centre is well placed to contribute to a wider range of the 17 Sustainable Development Goals including poverty, reduced inequalities and sustainable cities and communities.*
- *In light of the growing activity, the University will establish a new Social Innovation Unit. As part of the Unit's remit, it will coordinate joint activities between the Yunus Centre, Ashoka U initiative, U-Hatch, GCU Enactus, International SI projects, Student Leadership programme and Common Good Curriculum activity within the Schools; and help to drive its research towards attaining sustainable development goals and meeting the societal challenges.*

Outcome Seven: Equality and diversity

GCU's commitment to build on good practice and positively promote equality and diversity in staff and others who are affected by the use of the UIF has primarily been through the implementation of our Equality Outcomes 2017-2021, published in April 2017. To help inform our work further, the University has engaged externally with other HEIs through a workshop and subsequent recommendation for joint projects, aimed at embedding Equality and Diversity within the innovation environment. Our equality outcomes are aligned with our research activities, many of which have the principles of equality and diversity at their heart.

In AY 2018-19:

- *GCU will grow its involvement in driving for a more equitable and diverse community both within the University and beyond through the WiSE Research Group and its public sector collaboration. The Director of WiSE will continue to represent GCU at SG Gender Equality Index Working Group; and has been part of 'Improving Gender Competence in the Scottish Government' in an initial pilot training programme with SG's Economy Directorate and providing advice and guidance on equality impact assessment on Scottish National Investment Bank and Flexible Workforce Development Fund.*
- *WiSE will build upon its management of a Scottish Parliament Research Fellowship on employer equality practices and the European Institute for Gender Equality - assessing gender budgeting analysis in relation to European Structural Funds. The centre will help to define future practice in equality and diversity through its membership of Scottish Government Equality and Budgets Advisory Group (EBAG), the Scottish Human Rights Commission - Human Rights analysis in the Scottish Budget process.*
- *WiSE will also leverage its activities in the voluntary sector such as STUC Women's Committee, Close the Gap, Engender, Scottish Women's Budget Group, UK Women's Budget Group, and European Gender Budgeting Network.*