

CARDIFF UNIVERSITY SUBMISSION TO WELSH AFFAIRS COMMITTEE REQUEST (14 February 2023)
16/02/2023



Data below is compiled from Cardiff University Awards data - representing the maximum grant value contractually awarded to Cardiff University over the lifetime of the project.
Total project grant values would be higher (reflecting the award made to all partners in project consortiums). Total project costs and total award data is published by WEFO.
[EU Structural Funds programme: approved projects | GOV.WALES](#)
Compiled by blackwellrm@cardiff.ac.uk from Business Objects report data on awards (ERDF) and budget files (ESF)

Project title	Acronym	Fund	Category	CU role	Lead Beneficiary	Start date	Expected end date	Total value awarded £	Project count	Programme count	Status	
Superfast Business Wales	SBBE	ERDF P2	SME support	Partner	Welsh Government	01/01/2016	31/03/2021	1,094,051	1	1	CLOSED	
Smart Cluster Energy System (piSCES)	piSCES	Ireland-Wales	Industrial collaboration	Partner	Swansea University	01/10/2016	28/02/2021	377,030	1	1	CLOSED	
Avenues of Commercialisation for Nano and Micro technologies	ACNM	ERDF P1, SO1.2	Industrial collaboration	Partner	Swansea University	01/05/2018	01/07/2021	132,000	1	1	CLOSED	
Cardiff University Brain Research & Imaging Centre II	CUBRIC	ERDF P1, SO1.1	Infrastructure	Lead no partners	Cardiff University	01/08/2014	31/10/2021	4,578,475	1	1	CLOSED	
Data Innovation Accelerator	DIA	ERDF P1, SO1.2	Translational research, industry/HEI/public sector collaboration	Lead no partners	Cardiff University	01/05/2018	31/10/2021	1,863,083	1	1	CLOSED	
Coasting Communities Adapting Together (CCAT)	CCAT	Ireland-Wales	Translational research, industry/HEI/public sector collaboration	Partner	Swansea University	03/06/2019	28/02/2022	164,825	1	1	CLOSED	
Co Growth	Co Growth	EARDF	Translational research, industry/HEI/public sector collaboration	Lead	Cardiff University	30/04/2018	31/03/2022	810,136	1	1	CLOSED	
TrioSci Cymru	TrioSci	ESF P3	STEM skills engagement	Partner	Welsh Government	01/10/2018	31/03/2022	1,365,000	1	1	CLOSED	RIS Note: based on email figure for budget set up.
Go Wales (East & WWV)	Go Wales	ESF P3	Careers support	Partner	HEFCW	01/07/2016	01/10/2022	1,229,227	2	1	CLOSED	RIS Note: total includes ESF and HEFCW funding, split unavailable
Smart Expertise: GANfor CS	GAN4CS	ERDF via WG	Industrial collaboration	Grant lead	Welsh Government	13/12/2019	01/12/2022	1,664,455	1		CLOSED	
Smart Expertise: METAL-SolVER (Mine Effluent Treatment At Low-cost using Sustainable Low-footprint VERTICAL flow reactors)	METAL-SolVER	ERDF via WG	Industrial collaboration	Grant lead	Welsh Government	01/09/2020	22/12/2022	941,437	1		CLOSED	
Smart Expertise: ATLAS – Advanced Manufacturing Techniques for Semiconductor LASers	ATLAS	ERDF via WG	Industrial collaboration	Grant lead	Welsh Government	01/01/2021	21/12/2022	884,935	1		CLOSED	
Smart Expertise: DIGIBRIDGE: Physics-informed digital twin supported smart bridge maintenance	DIGIBRIDGE	ERDF via WG	Industrial collaboration	Grant lead	Welsh Government	14/12/2021	30/11/2022	111,884	1		CLOSED	
Smart Expertise: Design and development of an advanced electric motor for automotive applications (ICORE)	ICORE	ERDF via WG	Industrial collaboration	Grant lead	Welsh Government	01/07/2021	23/12/2022	479,575	1	1	CLOSED	
Smart Expertise: Design and development of hybrid electric propulsion system for regional aircraft (DragonFLY)	DragonFLY	ERDF via WG	Industrial collaboration	Grant lead	Welsh Government	01/07/2021	30/11/2022	1,015,770	1		CLOSED	
Smart Expertise: Flow methodologies in the circular economy of energetic materials	FlowMethod	ERDF via WG	Industrial collaboration	Grant lead	Welsh Government	01/12/2021	30/11/2022	109,097	1		CLOSED	
Smart Partnership: Synthesis of nitramine target molecules using flow chemistry and flow electrochemical methods	Synthesis	ERDF via WG	Industrial collaboration	Grant lead	Welsh Government	01/12/2021	30/11/2022	134,283	1		CLOSED	
Smart Expertise: Enabling repurposing - Product transformation and connected collaboration	Enabling	ERDF via WG	Industrial collaboration	Grant lead	Welsh Government	01/10/2021	30/09/2022	101,759	1		CLOSED	
Accelerate Wales (Life Sciences) - (East&WWV)	Accelerate	ERDF P1, SO1.2	Translational research, industry/HEI/public sector collaboration	Partner	Life Science Hub	01/06/2018	31/12/2022	5,176,340	2	1	CLOSED	
Institute for Compound Semiconductors	ICS	ERDF P1, SO1.2	Infrastructure	Lead no partners	Cardiff University	01/10/2016	31/12/2022	13,146,515	1	1	CLOSED	
Supercomputing Wales (East & WWV)	SCW	ERDF P1, SO1.1	Infrastructure	Lead	Cardiff University	01/07/2015	31/12/2022	6,974,305	2	1	CLOSED	
Advanced Sustainable Manufacturing Technologies	ASTUTE2020	ERDF P1, SO1.2	Translational research, industry/HEI/public sector collaboration	Partner	Swansea University	01/07/2015	31/12/2022	3,168,181	1	1	CLOSED	
Advanced Sustainable Manufacturing Technologies	ASTUTE EAST	ERDF P1, SO1.2	Translational research, industry/HEI/public sector collaboration	Partner	Swansea University	01/10/2017	31/12/2022	2,049,315	1	1	CLOSED	
Centre for Artificial Intelligence, Robotics and Human-Machine Systems	IROHMS	ERDF P1, SO1.1	Capacity building, industry/HEI/public sector collaboration	Lead no partners	Cardiff University	01/04/2019	31/01/2023	3,160,855	1	1	CLOSED	
Flexible Integrated Systems (East & WWV)	FLEXIS	ERDF P1, SO1.1	Capacity building, industry/HEI/public sector collaboration	Lead	Cardiff University	01/07/2015	28/02/2023	13,242,131	2	1	CLOSING	
Flexible Integrated Systems (App)	FLEXIS APP	ERDF P1, SO1.2	Translational research, industry/HEI/public sector collaboration	Lead	Cardiff University	01/06/2019	28/02/2023	2,252,333	1	1	CLOSING	
Magnetic Materials and Applications	MAGMA	ERDF P1, SO1.1	Capacity building, industry/HEI/public sector collaboration	Lead no partners	Cardiff University	01/03/2019	28/02/2023	1,050,081	1	1	CLOSING	

Cardiff Catalysis Institute - Electron Microscopy Facility	CCI - EMF	ERDF P1, SO1.1	Infrastructure	Lead no partners	Cardiff University	01/08/2018	31/03/2023	3,655,903	1	1	CLOSING
SPECIFIC Low Carbon Built Environment	SPECIFIC (LCBE)	ERDF P1, SO1.2	Translational research, industry/HEI/public sector collaboration	Partner	Swansea University	01/01/2016	31/03/2023	2,872,251	1	1	CLOSING
Ser Cymru - 37 separate projects and awards for research Chairs, Fellows, Rising Stars and capacity building.	37 x Projects	ERDF via WG	Capacity building	Grant lead	Welsh Government	from 1/12/2016	31/03/2022	13,386,121	37	1	ACTIVE
Marine Energy Engineering Centre of Excellence	MEECE	ERDF P1, SO1.2	Translational research, industry/HEI/public sector collaboration	Partner	ORE Catapult	01/09/2021	31/05/2023	918,337	1	1	ACTIVE
Celtic Alliance Life Science Network	CALIN	Ireland-Wales	Translational research, industry/HEI/public sector collaboration	Partner	Partner	01/09/2016	31/08/2023	1,390,514	1	1	ACTIVE
Knowledge Economy Skills Scholarships 2 (East & WWV)	KESS 2	ESF P2	Postgraduate skills	Partner	Bangor University	01/09/2015	30/09/2023	8,333,251	2	1	ACTIVE
Innovative Future Services (East & WWV)	INFUSE	ESF P5	Translational research, industry/HEI/public sector collaboration	Partner	Monmouthshire County Council	01/11/2020	30/09/2023	1,390,514	2	1	ACTIVE
								99,223,969	76	26	

Fund	Programmes	Total value awarded £	Programmes included:
EARDF	1	810,136	1% CoGrowth
ERDF P1, SO1.1	6	32,661,750	33% CCI-EMF, FLEXIS, CUBRIC, MAGMA, IROHMS, SCW
ERDF P1, SO1.2	9	31,578,355	32% Accelerate, ICS, ASTUTE2020, ASTUTE East, FLEXISApp, DIA, ACNM, MEECE, SPECIFIC LCBE
ERDF P2	1	1,094,051	1% SBBE
ERDF via WG	2	18,829,316	19% Smart (9 projects) and Ser Cymru (37 projects)
ESF P2	1	8,333,251	8% KESS2
ESF P3	2	2,594,227	3% TrioSci, GoWales
ESF P5	1	1,390,514	1% INFUSE
Ireland-Wales	3	1,932,369	2% CALIN, PiSCES, CCAT
Grand Total	26	99,223,969	

Type of support provided	Programmes	Total value awarded £	Programmes included:
Capacity building	1	13,386,121	13% Ser Cymru
Capacity building, industry/HEI/public sector collaboration	3	17,453,067	18% FLEXIS, MAGMA, IROHMS
Careers support	1	1,229,227	1% GoWales
Industrial collaboration	3	5,952,225	6% PiSCES, Smart (9 projects)
Infrastructure	4	28,355,198	29% CCI-EMF, CUBRIC, ICS, SCW
Postgraduate skills	1	8,333,251	8% KESS2
SME support	1	1,094,051	1% SBBE
STEM skills engagement	1	1,365,000	1% TrioSci Cymru
Translational research, industry/HEI/public sector collaboration	11	22,055,829	22% INFUSE, CALIN, MEECE, SPECIFIC LCBE, DIA, CCAT, CoGrowth, FLEXIS APP, ASTUTE EAST, ASTUTE 2020, Accelerate
Grand Total	26	99,223,969	

Rt Hon Stephen Crabb MP
Chair, Welsh Affairs Committee
House of Commons
Palace of Westminster
Westminster SW1A 0AA

By email: welshcom@parliament.uk

20 February 2023

Dear Mr Crabb

EU Structural Funds

Thank you for your letter of 14 February regarding the replacement of EU Structural Funds by the UK Shared Prosperity Fund. I am pleased to respond on behalf of Cardiff University and to assist the Committee in its deliberations.

I believe we are currently at a critical point, where we are facing the loss of a large number of irreplaceable, experienced research and innovation staff if this transition is not better managed and resourced. My institution is in agreement with the view expressed by Universities Wales that the funding situation has reached a 'cliff edge'. Furthermore, bridging funding is urgently needed along with changes to the way in which the SPF is directed. Without swift action, there will be a material impact on our ability to carry out research and innovation activities which are vital for Wales' future economic growth. In the remainder of this letter I will address your questions in order.

- **How much funding do you currently receive from EU Structural Funds and which of the different funds (regional development, social fund etc) do you draw money from?**

Over the EU Structural Funds Programme period 2014-2020, Cardiff University was **awarded £99M in Structural Funds, across 26 separate programmes of activity**, from funds as set out in Table 1, Annex 1 hereto.

The first award received in this period was CUBRIC, with a start date of August 2014. The last new project awards were Smart Expertise grants via Welsh Government in December 2021. However, larger programmes continued to receive funded project extensions into late-2022. Receipts from these awards started in 2015 and are expected to continue into early 2024, based on expenditure up to project end dates.



- **Which projects does this money support?**

We include with this letter a spreadsheet providing full details of all projects. The project titles and acronyms are also included in Annex 2.

c. £31M (31% of awards by value) have **supported research capacity building** projects, including investment in new academic, research and technical posts, equipment and research project activities. This includes £13M from the Welsh Government Ser Cymru programme across 37 projects including Chairs, Fellowships, Rising stars and equipment funding, the [FLEXIS](#) (Energy Systems) consortia, and investment in the university Centres for Magnetic Materials and Applications ([MAGMA](#)), and the Centre for Artificial Intelligence, Robotics and Human-Machine Systems ([IROHMS](#)).

c. £28M (29% of awards) have supported **new research infrastructure and facilities**, representing four major new-build facilities including the Institute for Compound Semiconductors ([ICS](#)) and Cardiff Catalysis Institute Electron Microscopy Facility ([CCI-EMF](#)) located in a new Translational Research Hub building from mid-2022, Cardiff University Brain Imaging Centre ([CUBRIC](#)) opened by HRH Queen Elizabeth II in 2016, and Supercomputing Wales ([SCW](#)) providing pan-Wales high performance computing hubs and capabilities to researchers across Wales.

c. £29M (29% of awards) have supported **translational research activities with industry, SMEs, third and public sector partners**, including £5.5M under the Welsh Government Smart programmes for 9 projects with industry partners. Major programmes of work supporting collaborative R&D with SMEs across Wales include [ASTUTE2020](#) in advanced manufacturing, [Accelerate](#) focussed on clinical innovation, Data Innovation Accelerator ([DIA](#)), buildings as power stations under Low Carbon Built Environment (SPECIFIC [LCBE](#)), Irish-Welsh life science collaborations ([CALIN](#)), Marine Energy Engineering ([MEECE](#)) and new approaches to delivery of public services ([INFUSE](#)).

c. £11M (10% of awards) have supported our participation in **skills interventions pan-Wales**, including Knowledge Economy Skills Scholarships [KESS2](#) (postgraduate qualifications with business), [GoWales](#) (careers support) and [TrioSci Cymru](#) (STEM outreach and engagement).

- **How much funding from those EU Structural Funds do you anticipate receiving in 2023-24 and 2024-25?**

We do not anticipate receiving any funding from EU Structural Funds in 2023-24 nor in subsequent financial years. (The 2014-20 EU Structural Funds expenditure operates on an 'N+36 months' basis so all expenditure must be complete and reported to the EU at a programme level by WEFO by 31st December 2023.) No further new awards or grant funding extensions are anticipated.

- **If these projects do not receive additional funding, for instance from the UK Shared Prosperity Fund, would the project cease to be viable?**

‘Infrastructure’ projects provided investment in cutting-edge research facilities which Cardiff University is committed to operating long-term on a sustainable basis, for example, the Institute for Compound Semiconductors (ICS) and Cardiff University Brain Imaging Centre (CUBRIC).

‘Research capacity building’ projects provided fixed-term investment in posts and equipment - designed from the outset to achieve particular research outcomes over an agreed duration, including establishing research careers. As Structural Funds projects have ended staff have either been absorbed into substantive roles at the University or have been forced to seek alternative employment. Many of those expert, highly-trained staff will be lost to the research and innovation talent pool.

Projects supporting **translational research activities with industry, SMEs, third and public sector partners** and **skills-supporting projects** have now stopped active delivery. Staff often leave positions before their contract end-date in order to secure new employment, representing a significant loss of expertise to the project and to the University - this specific expertise may be impossible to replace. However, for a short time, projects will retain external brand reputation and connections between staff and collaborators and the administrative overhead to re-start operational processes will be lower. A minority of projects will remain viable, but would require flexibility to evolve their delivery activities under a regime which lacks additional investment.

It should be noted that ESIF budget models do not generate income which can be reinvested in the sustainability of the research base or in continuity for staff contracts. Budgets have to be carefully planned to ensure that ESIF grant is sufficient to cover new ‘directly incurred’ costs. Under award Terms and Conditions, including EU State Aid regulations, these projects were not permitted to generate net revenues (or ‘profit’) during their lifetimes - as this would have changed the State Aid basis of awards and thus reduced the level of grant awarded (i.e. a ‘Catch 22’ situation).

- **Have you or do you intend to apply for funds from the UK Shared Prosperity Fund? If you have not applied, could you please explain why not?**

Cardiff University has not had the opportunity to bid for support from the UK Shared Prosperity Fund. The administration of the Shared Prosperity Fund as established by UK Government is not supportive of strategic investment in the types of large scale R&D activities that have characterised ESIF programmes and which are intended to deliver over an extended, regional geography. The nett effect of UK Govt’s decision to circumvent the Welsh Government and to route SPF via local authorities and city deals is that the great majority of investments anticipated will be intended to address local outcomes and economic disparities. We do not question whether these activities prioritised by local authorities are worthy of intervention. Cardiff University is closely engaged with the Cardiff Capital Region City Deal team on R&D priorities for the Capital Region but it remains the case that the ten local authorities which make up the City Deal regional board to date have not prioritised research and innovation in their planning for investment of the SPF (as determined in the [Regional Investment Plan](#) for SPF).

- **Do you anticipate receiving funds from the UK Shared Prosperity Fund?**

At the present time Cardiff University only sees one firm opportunity for investment from the UK Shared Prosperity Fund: The ACCELERATE project has sought bridging funding from Welsh Government for a core project management and administrative team, in anticipation of potential funding from Carmarthenshire County Council's *Pentre Awel* Healthcare innovation initiative. This represents a very small percentage of the University's ESIF supported portfolio, clearly demonstrating that the SPF is in no way currently operating as a credible successor to EU Structural Funds.

- **Does there need to be wider reforms to the UK Shared Prosperity Fund, including how money from it is allocated?**

Yes, the UK Government needs to take a more strategic view of the UK Shared Prosperity Fund if it is to be legitimately considered as a driver for long term, sustainable economic growth. If the current route for providing SPF funding is to remain in place then we recommend there should be i) a greater emphasis placed on R&D investment; ii) a requirement for those local authorities which have access to SPF to allocate a minimum percentage to collaborative working across a wider geography in order to establish projects with greater critical mass and positive impacts; and iii) for there to be a greater level of consultation and collaboration with the higher education sector in establishing projects and activities which stimulate R&D and innovation and can accelerate technology-based economic recovery.

The outcomes of the most recent Research Excellence Framework REF2021 comparison of research performance across UK HEIs showed that Cardiff University's *Research Impact* - the beneficial effects of our research on broader health, wealth and society - was the highest ranked of any university in the devolved countries of the UK. This exceptional level of performance could not be maintained without significant changes to the future allocation of the UK SPF.

- **Universities UK has called for "bridging funding". What are they bridging to?**

UK Government needs to take a holistic view of the current dilemma that universities in Wales find themselves in. Reforms to the UK SPF as set out above are needed in order that universities can bid with confidence for resources to support longer term, strategic R&D developments and initiatives which support private sector technology based companies with high-growth aspirations. Bridging funding is necessary for the retention of talent, skills and capacity in the HE system in order to make those future projects viable. Without that interim support universities will experience significant delays in recruiting and training staff, resulting in negative impacts on the lead-in times for delivery of projects, outcomes and wider benefits to the economy and society.

- **What representation have you made to other organisations - UK Government, Welsh Government, UKRI, private sector etc for alternative sources of replacement funding?**

Cardiff University has made representation to UK Government via contributions to the recent Universities Wales campaign and in person at the House of Commons event on

7 February. The HE sector in Wales has for a number of years been in dialogue with Welsh Government about the need for plans to replace ESIF after 2023. Historically, ESIF has reduced the need for Welsh Government to invest its core budget in R&D and innovation support so the cessation of ESIF in Wales has left exposed the low levels of investment in these areas which are critical for economic growth and prosperity. Currently we see no viable alternatives from UK or Welsh governments other than the UK SPF as a replacement for EU Structural Funds.

Within Wales the Welsh Government (via HEFFCW) has in recent years re-established innovation funding for universities in the form of the Research Wales Innovation Fund, RWIF, akin to the HEIF stream provided to English universities. This has been welcomed by the sector and supports a range of knowledge exchange activities. However, its quantum is modest (£15 million per annum in total across all Welsh HEIs) and the algorithm for its allocation fails to recognise the scale of research and innovation activities in universities such as Cardiff (which receives only ~£2.4 million of RWIF per annum, around 16% of the total funding).

UKRI has established strategic, large-scale investment mechanisms to support regional growth activities, including cluster development, via the £316 million Strength in Places Fund SIPF. Cardiff University has been awarded two major SIPF projects, *CScnnected* (compound semiconductor cluster development; £45 million total programme value) and *media.cymru* (digital film and media cluster; £50 million total programme value) and we are the only UK university to hold more than one such award. However, the scope for us to win further projects is very limited as the SIPF operates competitively across the entire UK.

The University's private sector partners make significant levels of co-investment in our research and innovation activities every year. By way of illustration, we reported £31.9 million of collaborative research activity to HESA in our 2021-22 return to the HE Business and Community Interaction HE-BCI survey. However, given the current economic climate it is not feasible to expect businesses to address a huge downturn in public sector investment in research and innovation.

I hope this information helps your Committee to understand the stark reality that the HE sector in Wales is at a crisis point in terms of retaining research and innovation talent and securing a sustainable position to deliver on future activities which will generate employment, productivity and economic growth. The loss of EU Structural Funds has been a disaster for Wales and so far there has been a failure to provide any effective mitigation. In its current form, the UK Shared Prosperity Fund is certainly not the solution we would hope for and I trust the advice and suggestions we provide in this response will be helpful to the Committee as it considers next steps. There is a very real urgency to this situation.

Yours sincerely



Professor Colin Riordan
Vice-Chancellor

Annex 1

Table 1 – Cardiff University project and programme activities funded under the 2014-20 EU Structural Funds

Fund	Programmes	Total value awarded £	Programmes included
ERDF	1	810,136	CoGrowth
ERDF P1, SO1.1	6	32,661,750	CCI-EMF, FLEXIS, CUBRIC, MAGMA, IROHMS, SCW
ERDF P1, SO1.2	9	31,578,355	Accelerate, ICS, ASTUTE2020, ASTUTE East, FLEXISApp, DIA, ACNM, MEECE, SPECIFIC LCBE
ERDF P2	1	1,094,051	SBBE
ERDF via WG	2	18,829,316	Smart (9 projects) and Ser Cymru (37 projects)
ESF P2	1	8,333,251	KESS2
ESF P3	2	2,594,227	TrioSci, GoWales
ESF P5	1	1,390,514	INFUSE
Ireland-Wales	3	1,932,369	CALIN, PiSCES, CCAT
Total	26	99,223,969	

Notes

- The count of 'programmes' relates to projects operating collectively. For example, FLEXIS East and West is counted as one programme, but this was funded as two separate projects under the East Wales and West Wales and the Valleys operational regions. ASTUTE2020 and ASTUTE East are shown as separate programmes as they were funded at different times.
- Award values from the Welsh European Funding Office WEFO (£99m total) represent approximately 50-70% of costs incurred on delivery of the project activities, given that the grant intervention rate awarded by WEFO varies by project. All grant claimed is matched by Cardiff University investment from its core funding, ranging between c.50-30% of total project costs.

Annex 2 – Projects supported under EU Structural Funds 2014-20, Full titles and acronyms

Project title	Acronym
Superfast Business Wales	SBBE
Smart Cluster Energy System (piSCES)	piSCES
Avenues of Commercialisation for Nano and Micro technologies	ACNM
Cardiff University Brain Research & Imaging Centre II	CUBRIC
Data Innovation Accelerator	DIA
Coasting Communities Adapting Together (CCAT)	CCAT
Co Growth	Co Growth
TrioSci Cymru	TrioSci
Go Wales (East & WWV)	Go Wales
Smart Expertise: GANfor CS	GAN4CS
Smart Expertise: METAL-SOLVER (Mine Effluent Treatment At Low-cost using Sustainable Low-footprint VERTICAL flow reactors)	METAL-SOLVER
Smart Expertise: ATLAS – Advanced Manufacturing Techniques for Semiconductor LASers	ATLAS
Smart Expertise: DIGIBRIDGE: Physics-informed digital twin supported smart bridge maintenance	DIGIBRIDGE
Smart Expertise: Design and development of an advanced electric motor for automotive applications (iCORE)	ICORE
Smart Expertise: Design and development of hybrid electric propulsion system for regional aircraft (DragonFLY)	DragonFLY
Smart Expertise: Flow methodologies in the circular economy of energetic materials	FlowMethod
Smart Partnership: Synthesis of nitramine target molecules using flow chemistry and flow electrochemical methods	Synthesis
Smart Expertise: Enabling repurposing - Product transformation and connected collaboration	Enabling
Accelerate Wales (Life Sciences) - (East&WWV)	Accelerate
Institute for Compound Semiconductors	ICS
Supercomputing Wales (East & WWV)	SCW
Advanced Sustainable Manufacturing Technologies	ASTUTE2020
Advanced Sustainable Manufacturing Technologies	ASTUTE EAST
Centre for Artificial Intelligence, Robotics and Human-Machine Systems	IROHMS
Flexible Integrated Systems (East & WWV)	FLEXIS
Flexible Integrated Systems (App)	FLEXIS APP

<u>Magnetic Materials and Applications</u>	MAGMA
<u>Cardiff Catalysis Institute - Electron Microscopy Facility</u>	CCI - EMF
<u>SPECIFIC Low Carbon Built Environment</u>	SPECIFIC (LCBE)
Ser Cymru - 37 separate projects and awards for research Chairs, Fellows, Rising Stars and capacity building.	37 x Projects
<u>Marine Energy Engineering Centre of Excellence</u>	MEECE
<u>Celtic Alliance Life Science Network</u>	CALIN
<u>Knowledge Economy Skills Scholarships 2 (East & WWV)</u>	KESS 2
<u>Innovative Future Services (East & WWV)</u>	INFUSE