Research and Innovation Capital Funding 2017-18 – summary of outcomes

University of South Wales

HEFCW funding £995k : large-scale battery and smart distribution energy research laboratory (CAPSE)

Outcomes:
- £3m of grant application in submission process. This includes a WG SMART Expertise bid which will be under discussion at panel in October 2018 [*NB HEFCW reviews submission and sits on the panel*]
- USW were part of a consortium who successfully received £500k from the Faraday Challenge (£30k to USW)
- 20 awareness raising sessions have been held with businesses to demonstrate increased capacity in CAPSE
- USW exceeded targets relating to networking collaborations with academics and businesses.
- Substantial increase in capacity at CAPSE through internal investment, and HEFCW funding.

Aberystwyth University

HEFCW funding £0.5m : Aberystwyth Innovation and Enterprise Campus (AIEC)

Successful bids:
- ERDF Future Food Project – AU has been provided with the full £3m (ERDF £1.9m matched by £1.1m from WG)
- ERDF Beacon Plus – East Wales Project – ERDF contribution £444k; WWAV Project – ERDF contribution £3.8m
- ESF Welsh BioInnovation Project – This is complete with AU awarded £4.3m (ESF £3.1 matched with £1.2m from the University)

Start-ups, licence income and community activities:
- 1 Graduate Start-up is complete with Flatpac Farms Ltd incorporated in July 2018.
- 1 Staff start-up - Terravesta Lrd embedded in the plant breeding activities at AU via licensing deal.
- License income (relating to Seed Biobank - £50k) – Complete with royalties on breeding products archived in the Seed Biobank at over £100k.
- Business Community activities (200 attendees) – exceeded via 7 events.

Bangor University

HEFCW funding £0.5m: Science and Technology Quarter – Early Phase Development

- NW Growth Deal Funding (£29m to be agreed) – all four projects developed and submitted to NWGD have been included in the package to be funded by UK government.

- Construction phase (labs) –Completed and labs officially opened and in use at BU.
- Grant applications (target £100-200k) – successful application to NERC £611k in Ocean MicroPlastics.

Cardiff University

HEFCW funding £1m – Innovation Centre: a knowledge exchange hub

- Agreement to join Scale-Up Programme approved by Scale-Up Board, with collaborative agreement drawn up for signature in September 2018. Operational engagement and expenditure to start 1 October. Launch event in July 2019.
- Construction of Innovation Central – site preparations commenced with commitment to increasing local skills, development and employment, providing minimum of 30 work placements and apprenticeship opportunities. The process will deliver in excess of 1,685 training weeks during the construction work.
- 45 new SMEs members of Cardiff University Innovation Network. The Wales Scale-Up Programme launch included series of workshops with SMEs. CUIN hosting Scale-Up programme event to highlight benefits of participation and to showcase successes.
- 7 KTP proposals submitted with further 6 in development.
- Cardiff University has found the programme to be particularly beneficial in providing opportunities for Early Career Researchers to engage with industry partners, supported by more senior academic staff.

Swansea University

HEFCW funding £3m – UK National Steel Innovation Centre (UK NSIC)

- Prosperity Partnership (EPSRC and Industry) – Swansea and Tata interviewed and successfully awarded funding which started in November 2018. Total value is £6.98m and is in collaboration with Warwick.
- Centre for Doctoral Training – successfully awarded £7m from EPSRC for CDT in industrial coatings. Proposal supported by over 12 companies who committed £42k per studentship. 75 funded from longlist of 390.
- SUSTAIN Manufacturing Hub (target £10m EPSRC support, leveraging £10m from industry) – Successfully awarded starting 1 April 2019. Grant of £9.98m supported by matched funding from 5 UK steel manufacturers. SUSTAIN is partnership with Warwick and Sheffield and is one of only 3 that were funded out of EOI selection of 33.
- Innovate UK (target £6m) –several submission made, information provided but none successful in this round. REIMS bid from Strength In Places Fund to be reworked and submitted to Wave 2.
- Industrial Strategy Challenge Fund – successful £36m ISCF bid for the Active Building Centre.
- Industry Engagement - all 5 UK Steel Companies engaged and agreed to support SUSTAIN. Committed to 5 year membership contract. Additional collaborations from use of HEFCW equipment included donation of £150k of equipment.

- Industry Income – HEFCW equipment offering and creating interest from industries and although target unmet it is assumed collaboration and income leverage will grow. Swansea creating bespoke approaches when developing collaborative opportunities – based on industry size, maturity to R&D, and existing committed match funding.
- Job creation– 30 appointments at TATA, with expectation of 40 by FY 2019/20. Increase to 45 for 2019/20.

Swansea University

HEFCW funding £1.2m – Institute of Coding

Strategic Focus

- The finalised test processes and procedures for a Student Software Development Company took place in Spring 2019 – the final form of the company would be dependent on the outcomes. Successful models in Sheffield and Aston were investigated to inform the pilot test phase, and Cardiff University presented its findings to the IoC Conference in Manchester in March 2019.
- An Industrial Advisory Panel has been constituted to meet every 8 months during the three year IoC project – its inaugural meeting in October 2018 coincided with the official launch of the IoC in Wales by Julie James AM.
- The team is actively seeking to align with industry standard, but currently no specific accreditation is available. However, work with partners in the IoC grouping is continuing on accreditation to discuss best practice and ensure members are aware of new developments.
- A new Data Science Academy will be launched in September 2019 – it will take elements of the industry-facing project based learning approach developed by the National Software Academy, and in time allow inter-disciplinary collaboration across Cardiff University.

New HE provision

- 3 new higher education programmes have been approved in Swansea University which reflect the experience of the IoC Consortium (BSc Applied Software Engineering, MSc Cyber Security, MSc Data Science), with a further 3 at Cardiff University (MSc Software Engineering, MSc AI, MSc Cybersecurity).
- The programme has enabled Swansea University to engage and understand industry demands and has updated an existing MSc Data Science & Analytics course. The University is also progressing proposals for a year in industry variant of the MSc Software Engineering, meeting both industry skills, and employability needs.
- Swansea University has established a BSc Degree Apprenticeship Programme in Applied Software Engineering enrolling 55 employees from regional businesses in 2018/19. Cardiff University has approved its Degree Apprenticeship in Applied Software Engineering.

Student employability

- Swansea University has expanded its Year in Industry BSc scheme and it is now fully implemented – in 2018/19 19 students are on industrial placement,

with 95 signed up for 2019/20. Cardiff University has 52 UG students, and 13 PG students undertaking a year in industry in 2018/19.

- Summer Placement Scheme has been developed, and Cardiff University has worked with industrial partners to provide 'Insights' short periods of work experience for students which have proved popular.
- 20 new IoC linked UG students have been recruited as Technocamp Ambassadors
- 116 Cardiff students have signed up to be STEM ambassadors.

Teaching
- 16 UG students have enrolled on a teacher training module requiring them to spend one full day per week as a teaching assistant in local schools.
- CPD – 38 teachers graduated from the year-long Technoteach Programme in 2018, with a further 23 currently undertaking the programme.
- Swansea University's CPD programme delivered 4 CPD sessions to support teachers who are currently delivering computer science GCSE and A Level, focussing on hard to teach topics.
- The team has engaged with the Computing at Schools (CAS) network to better understand the needs of teachers delivering GCSE and A level, with one team member shadowing a Computer Science teacher in a school setting.

Facilities and capital investment
- Substantial space was identified and refurbished at Swansea University for a new Science Outreach Academy, which would house Technocamps labs, as well as labs for four other major STEM outreach units of the University.
- Labs at the National Software Academy in Cardiff University have been designed, implemented and used for outreach and engagement. Equipment has been purchased to allow the institution to undertake mobile code clubs.

Work with schools and families
- 4 weekly code club sessions are hosted each week at Swansea, and a programme of school-based workshops (at least 2 per week) are underway. In addition by April 2019, 113 code club session had been run at Cardiff University, including weekend Family Code Clubs, and a pilot of code club for students from other disciplines at the university.
- School sessions have been held at a number of external events including Skills Cymru and the National Museum of Wales as part of the Tim Peake exhibition. Code clubs have also been run in community settings in the Rhondda.
- 'Family Jams' are run twice a year in both Cardiff and Newport and involve children of all ages and their families – as of April 2019, 115 have already registered to attend the events.
- Technocamps supported the DVLA in hosting the annual Coding Competition, including providing support to some 15 ambassadors recruited within the DVLA who have all mentored school teams. Discussions are ongoing with other companies including Admiral. GoCompare and Lloyds Banking Group to engage staff as Ambassadors or within community code clubs.
- Technocamps have engaged with 41 secondary schools and 4 FE colleges to support delivery of GCSE and A Level computer science, as well as inspiring younger students in their choices. Topics have included Robotics and Cyber

Security providing real-world application, a key driver particular for female students.

- Outreach events have included 'Not Just for Boys' STEM enrichment conference, and work with Techniquest to provide conference for students studying A level computer science.
- Two secondary schools have been engaged with through the Engineering Education Scheme for Wales.