



UK Research
and Innovation

EPSRC Update

Alex Peden, Head of Engagement Scotland

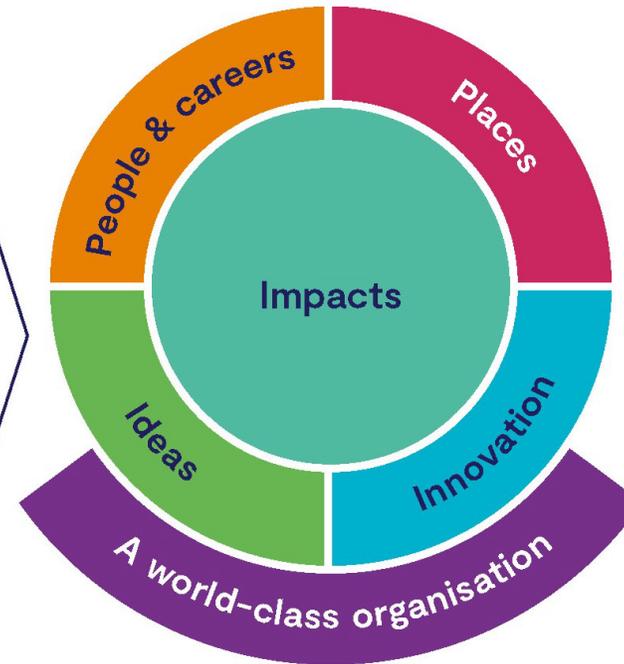
Edinburgh Napier University Technology Innovation and Industry Collaboration event

12th January 2023

EPSRC Budget Allocation 2022-25

Delivering the UKRI Strategy: total funding allocations, 2022-23 –2024-25

Arts and Humanities Research Council £207m	Biotechnology and Biological Sciences Research Council £944m	Engineering and Physical Sciences Research Council £1,929m
Economic and Social Research Council £362m	Medical Research Council £1,750m	Natural Environment Research Council £925m
Science and Technology Facilities Council £1,651m	Research England £6,227m	Innovate UK £2,438m
Infrastructure £3,053m	Existing time limited commitments and Centrally Managed Funding* £3,674m	Collective Talent Funding and new cross-UKRI Strategic Programmes £2,805m



*includes existing cross-UKRI Strategic Programmes (and other time limited commitments such as COVID interventions), support for UKRI transformation, public engagement, and open access

EPSRC's Strategic Priorities

Core Disciplines

The Physical and Mathematical Sciences Powerhouse: curiosity driven discovery, with boundless potential

Frontiers in Manufacturing, Engineering and Technology: unleashing our productivity potential

Digital Futures: the future of communications, computing and the internet

Engineering Net Zero: decarbonising our economy and society, creating an alternative energy future and developing truly circular economies

AI, Digitalisation and Data – Driving Value and Security: powering transformative change and the next industrial revolution

Transforming Health and Healthcare: improving quality of life through innovative technological solutions

Mission Inspired and Translational Research

International

Talent and Skills

Place

World Class Infrastructure

Economy

An Effective Ecosystem for Engineering and Physical Sciences

Increased diversity of participants working in inclusive supportive environments

Interventions to support research connectivity across local and national ecosystems

International Centre-to-Centre calls to support best-with-best collaborations

Research Technical Professionals to ensure necessary capability exists and diverse career paths are available

Digital infrastructure to realise our digital future



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New structure for digital technologies research

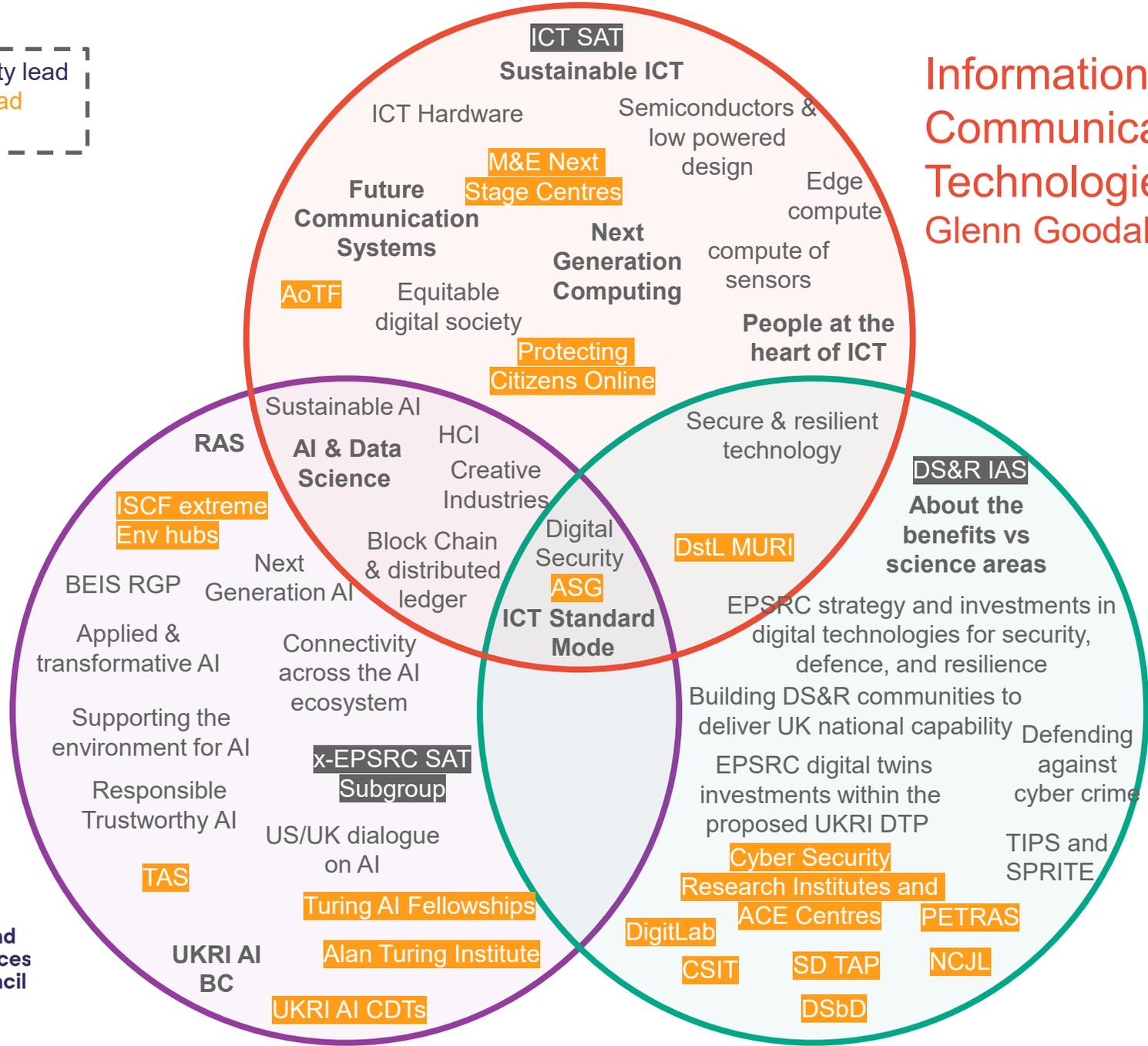


Digital technology portfolio changes

- In April 2022 we closed **Digital Economy** and **Digital Twins** as separate themes
- We will incorporate the Digital Economy approach, embedding appropriate user involvement, interdisciplinary working and true co-creation with potential users of research, in all our digitally facing research
- From April 2022 a new theme, entitled **Digital Security & Resilience** (DS&R) was created to put a spotlight on digital technologies relevant to the security, defence, and resilience of the UK.
- The research supported would aim **to create a more secure and resilient digital society, that is robust and prepared to withstand shocks and challenges in an increasingly interconnected digital world.**

Black = Research area / priority lead
Orange = Large investment lead
Grey = Advisory Structure

Information & Communications Technologies (ICT)
 Glenn Goodall



AI & Robotics (AIR)
 James Dracott

Digital Security & Resilience (DS&R)
 Mark Gasgarth

Cross-ICT Priorities

Digital Futures – Core ICT Priorities

Next Generation Computing

- New and emergent ideas and technologies
- Neuromorphic and quantum computing
- Future Internet, creative industries and technology

Sustainable ICT and ICT for Sustainability

- Reduce energy and resource consumption across digital systems driven by low-powered design, novel materials, software, and devices
- Sustainable Digital Society

Semiconductor Technology

- Leverage existing UK strengths in design, compound semiconductors, photonics, advanced materials to enable heterogeneous/hybrid integration
- Developing emergent technologies towards UK IP

Future Communications Systems

- Development of future communication systems (inc. networks, satellite, wireless, wired technology) to bolster the UK's sovereign capability
- Human centred / user co-created

Cross-cutting priorities

People at the heart of ICT

Enabling the pipeline of interdisciplinary, human centred, user co-created ideas in ICT.

Towards an equitable digital society.

AI and Data Science

Future intelligent technologies and data enabled decision making.

Beyond a data driven economy.

Digital Security and Trust

Enabling safe and secure ICT infrastructure and technology - including verifiability and trust of network intelligence, native security and trust, physical layer security, etc.

UKRI AI Research and Innovation Programme

Strategic Drivers

Innovation, Adoption & Diffusion

Supporting the development of the UK's AI Sector and the Adoption of AI Across Sectors.

Delivering immediate and near-term impact in AI industry and broader sector adoption of AI via innovation programmes

Challenge/Mission AI

Bringing the potential of AI to bear on societal, economic, and environmental challenges, with a particular focus on key pressing challenges where we have existing strength (health), where there are pressing needs (net zero), or where basic capability development is critical to sovereign capability (AI for Security and Defence and Government), and opportunities which only UKRI will deliver (AI for science).

New AI Capabilities

Building new capabilities and next generation AI technologies the knowledge, tools and techniques that solve the future challenges in AI that will keep the UK ahead of the game intellectually and will attract industry to and keep it in the UK.

Developing AI that is sustainable, interacts differently with humans, and can work with challenging (small, sparse, distributed) data sets

Supporting the environment for AI

Supporting collaborative ecosystems spanning basic and mission driven AI, skills, and innovation

Building pools of skilled people at all levels to fuel UK academia and industry

Seeking to prevent access to skills, data, and infrastructure becoming barriers to AI research and innovation

Responsible Trustworthy AI

Building the new technical and sociotechnical capabilities needed for responsible trustworthy AI

Integrating understanding of the societal impacts and implications of technology into its development

Leading the way in research informed regulation and standards

Connectivity across the AI ecosystem

Enabling convening and connectivity across the UK AI research and innovation landscape

Building on the leadership role of the Alan Turing Institute as the National Centre for AI and Data Science

Digital Security & Resilience

The research supported in this new theme would aim **to create a more secure and resilient digital society, that is robust and prepared to withstand shocks and challenges in an increasingly interconnected digital world.**

We will do this by:

- Developing EPSRC's strategy for digital security and resilience, and for specific topic areas falling under that remit, such as cyber security and digital twinning.
- Building communities, networks, and capacity to deliver national capability in specific digital security and resilience topic areas.

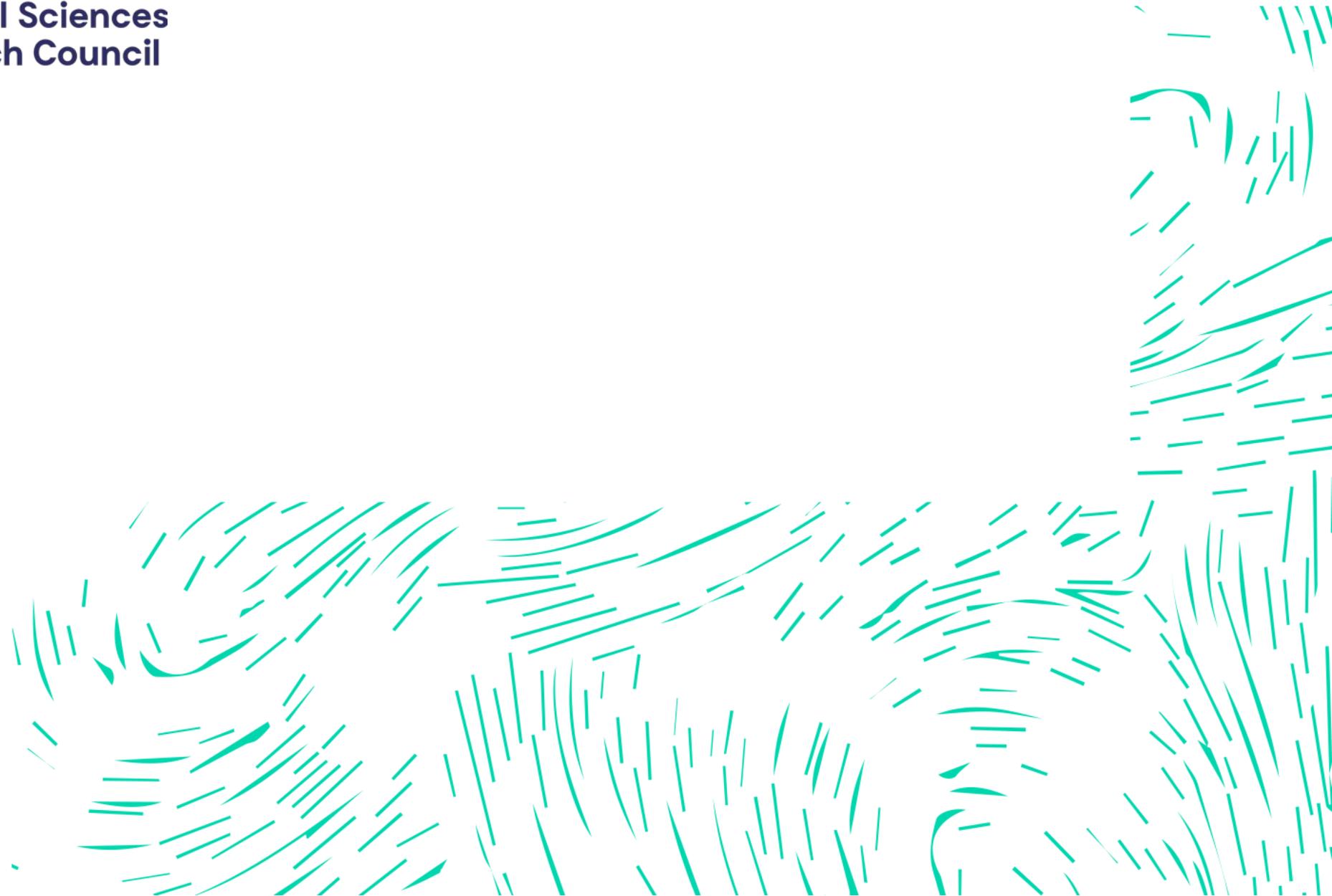
Broadly, the Digital Security & Resilience theme's investments will fall in two areas:

1. Research to promote and improve the security and resilience of digital technologies.
2. Research into digital technologies that would be developed to promote and improve the security, defence, and resilience of the UK, and the security and resilience of its organisations, systems, infrastructure, and society.



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Impact

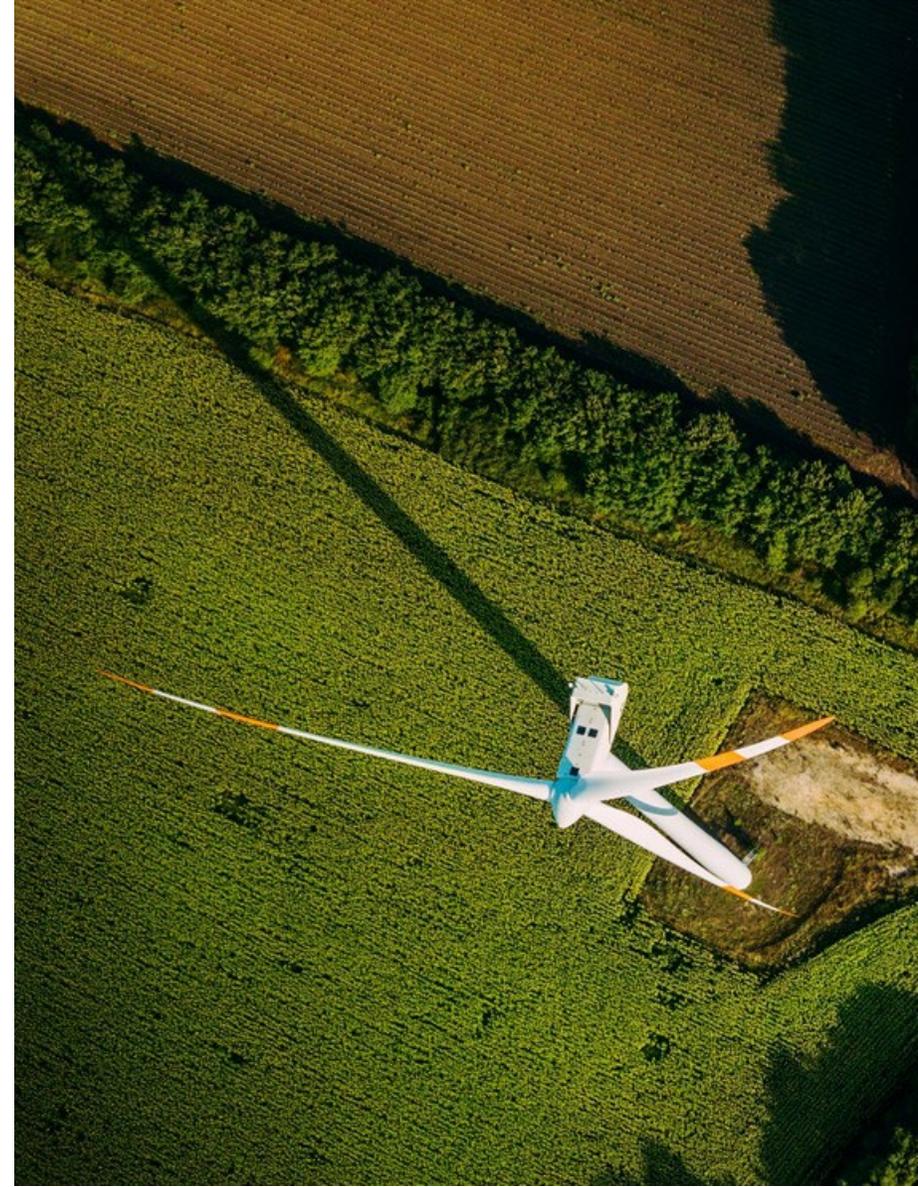


Impact

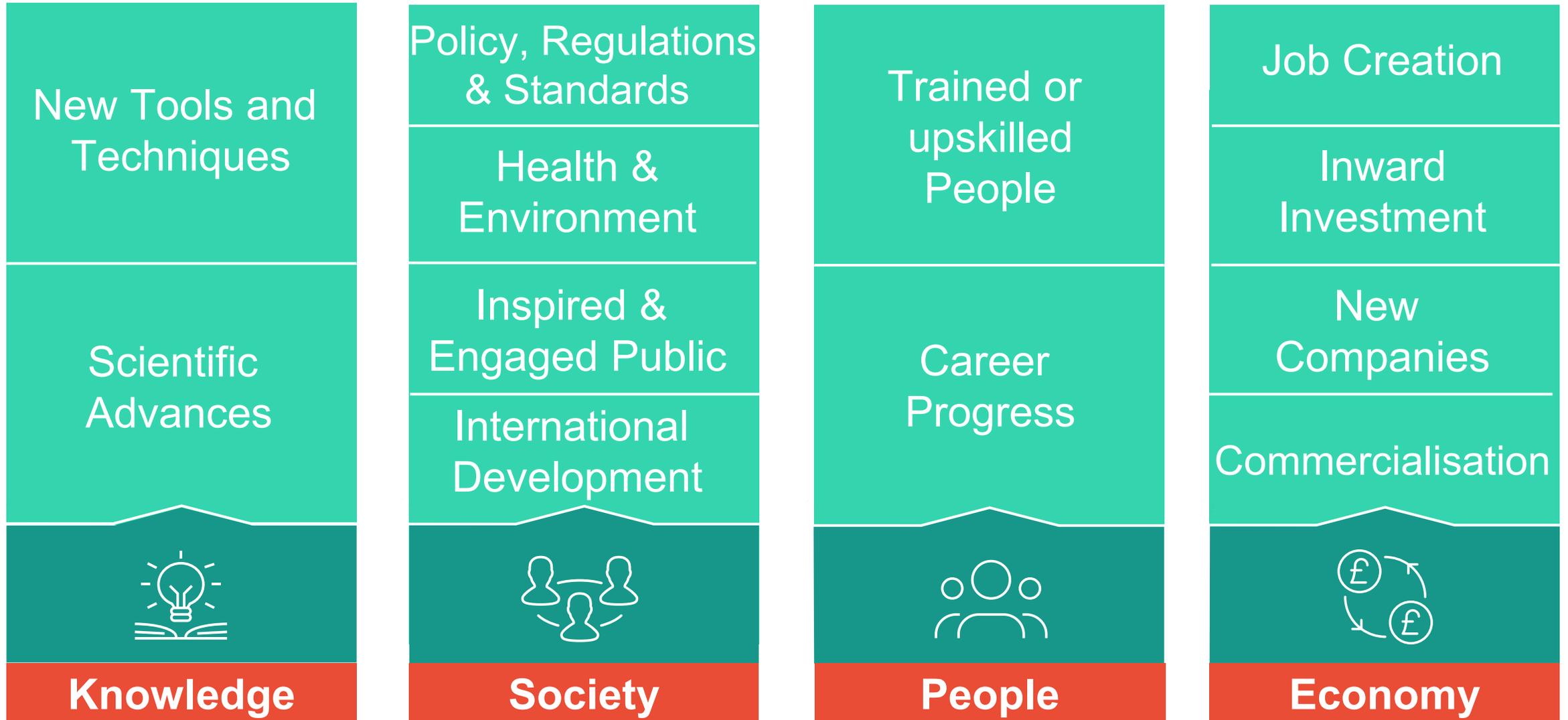
Impact is now a **core consideration throughout the grant application** process

Articulating how you will maximise the benefits and outcomes is intrinsic to the proposal itself

How do we create a more compelling value based argument for curiosity driven discovery in the physical sciences?



Impact



Your Research



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Place-based Impact Acceleration Account



What is a Place Based IAA?

Account that supports similar impact activities to an institutional IAA, but those activities should support the capabilities of a cluster to enhance regional growth.

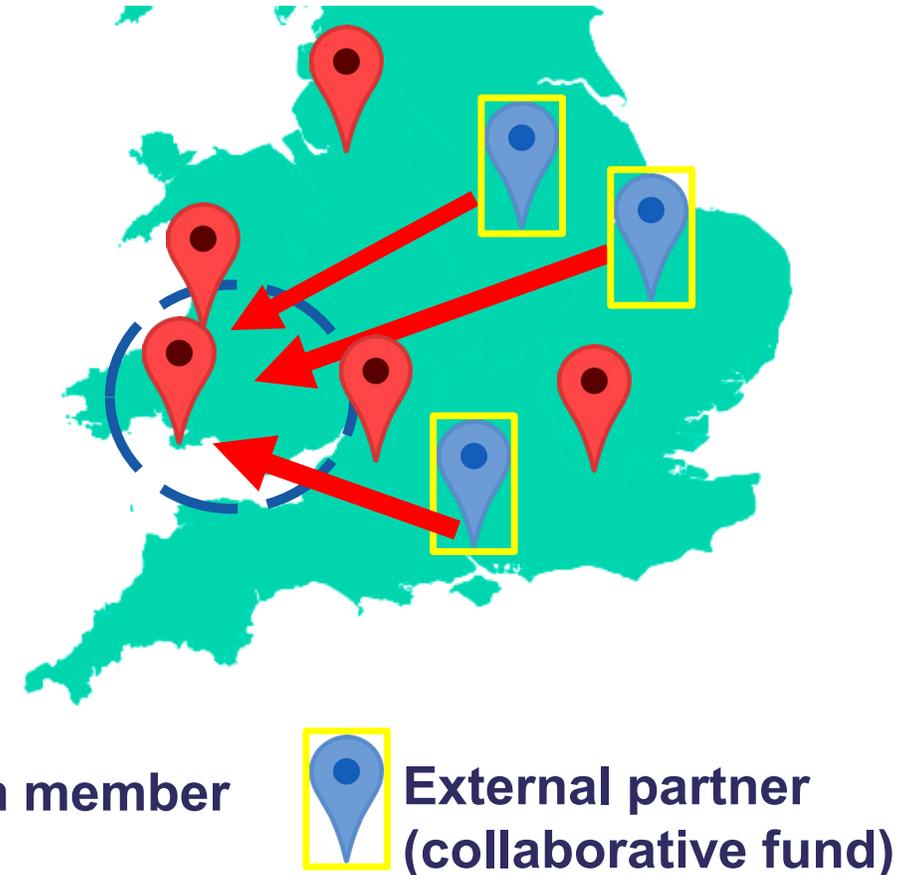
Key features of PBIAAs are:

- delivery through a consortium (two universities minimum)
- Co-created with civic bodies and with significant business collaboration
- broaden access to impact funding
- Support a high density of impact activity within a cluster
- [Link to call information](#)
- Deadline: 25th April 2023

What is a Place Based IAA?

- Impact outcomes must be targeted within the defined place
- Engage with local stakeholders during both design and delivery
- Understand local needs and ambitions
- Draw in best & most relevant research from consortia members and across the UK

Example: South Wales
focused PBIAA



Place-based Impact Acceleration Account – Key features

Co-creation with a civic organisation

- We expect applications to be co-created between consortia members and 1 or more civic organisations that have an interest in developing the identified cluster.

Collaborative Fund

- Translate needs / insights from cluster into impact activities that enable funds to be administered supporting universities beyond the consortium.
- Draw on the full strength of the UK.
- Including institutions with smaller or specialised world class portfolios.

Public engagement

- collaborative relationships that engage publics both within the target place and beyond (where appropriate).
- we particularly encourage efforts to involve and engage with underrepresented groups.

Place-based Impact Acceleration Account – Key features

Equipment

- Individual items of equipment between £10,000 and £400,000 can be included
- expect to see a robust strategic case for how equipment will maximise the impact from research
- The purchase of equipment to undertake non-impact focused research is out of scope for this opportunity.
- EPSRC will contribute 80% of the final purchase price

Proposal Costing

- consortium management costs: 80% full economic cost
 - PBIAA manager - can be supported. Up to 15% of the budget (to a maximum of £500,000)
- consortium resource and collaborative fund (projects and other activities)
100% directly incurred costs

PBIAA Scheme overview

Proposals must:

- be co-created with civic actors
- be aligned with civic ambitions
- engage business and local stakeholders
- involve at least 2 universities
- draw from the full breadth of UK research and development activity
- £25M available through 2 funding streams

Call closes – 25 April 2023

Any questions? Email pbiaa@epsrc.ukri.org

[Link to call information](#)



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Prosperity Partnerships



EPSRC Prosperity Partnerships

- EPSRC Flagship venture with current portfolio of over £350m
- Support for existing, strategic, research-based partnerships between businesses and academic institutes.
- Opportunity for co-investment in large-scale collaborative research programmes
- Business led programmes - helping business unlock the transformative potential of investing in discovery science and engineering



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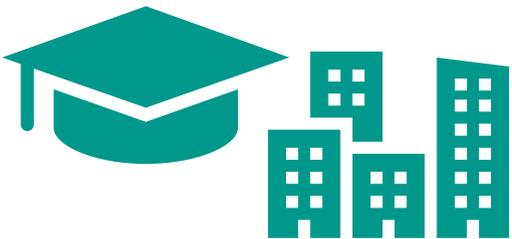
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Characteristics of a successful Prosperity Partnership

1. Clear evidence of having been co-created
2. Involve business and academic partners with a strong track record of working together strategically, and with teams demonstrating complementary business and academic expertise
3. Tackle shared challenges
4. Have a major impact on the research base, the business and wider UK industry
5. Allows the business undertake a project in a manner that wouldn't be possible without EPSRC funding

EPSRC Prosperity Partnerships – Current Portfolio

Business-led collaborative discovery research, driven by commercial imperatives

Round 1
2017



Round 2a/b
2018



Round 3
2019



Round 4a
2020



Round 4b
2021



47 partnerships, total investment - £335m;
Comprised of £167m from business, £129M EPSRC-UKRI, and £40m Universities

EPSRC Prosperity Partnerships

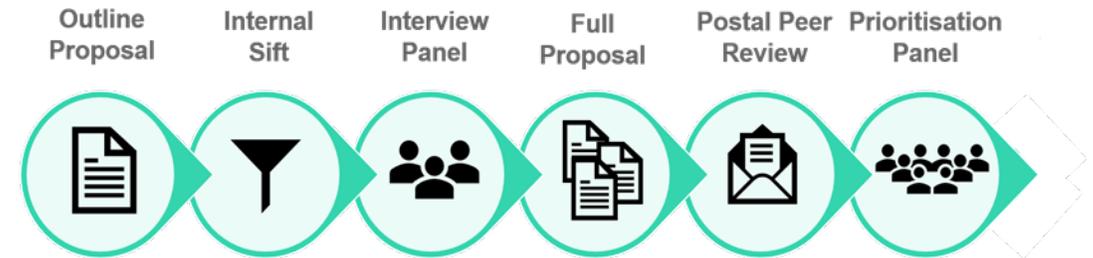
A Prosperity Partnership should:

- Be business led, but co-created and co-delivered between the industrial and academic partners
- Support fundamental research with a technology readiness level of one to three
- Support and enhance existing, strategic, research-based partnerships

Funding:

This is a co-investment opportunity where the industrial partners must match the funding provided by EPSRC for the project.

Application process:



For more information:

Check UKRI Funding Finder for full call details
<https://www.ukri.org/opportunity/>

Contact:

Stephen Webb, stephen.webb@epsrc.ukri.org
Business Engagement Team
user.engagement@epsrc.ukri.org



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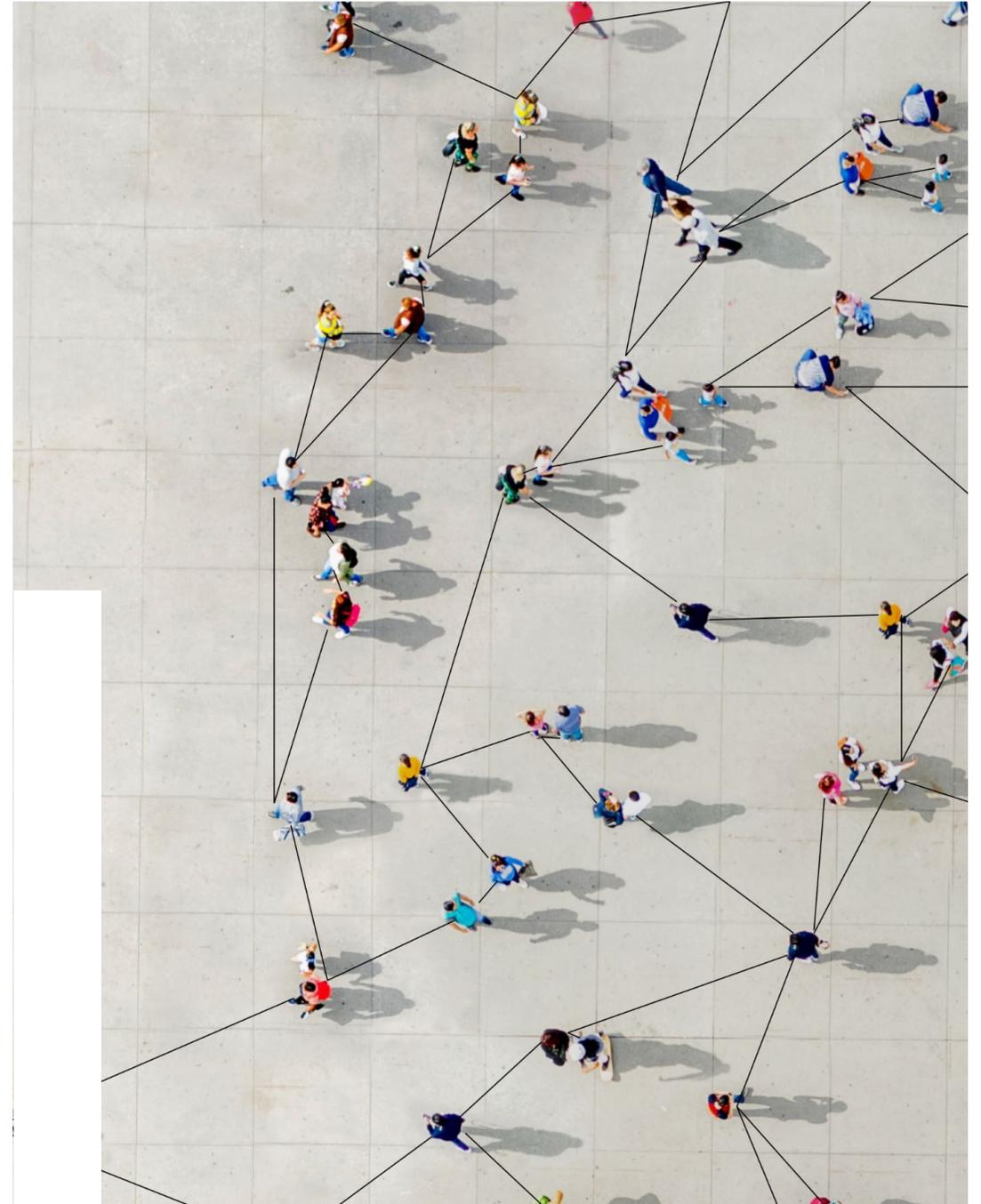
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Centres for Doctoral Training



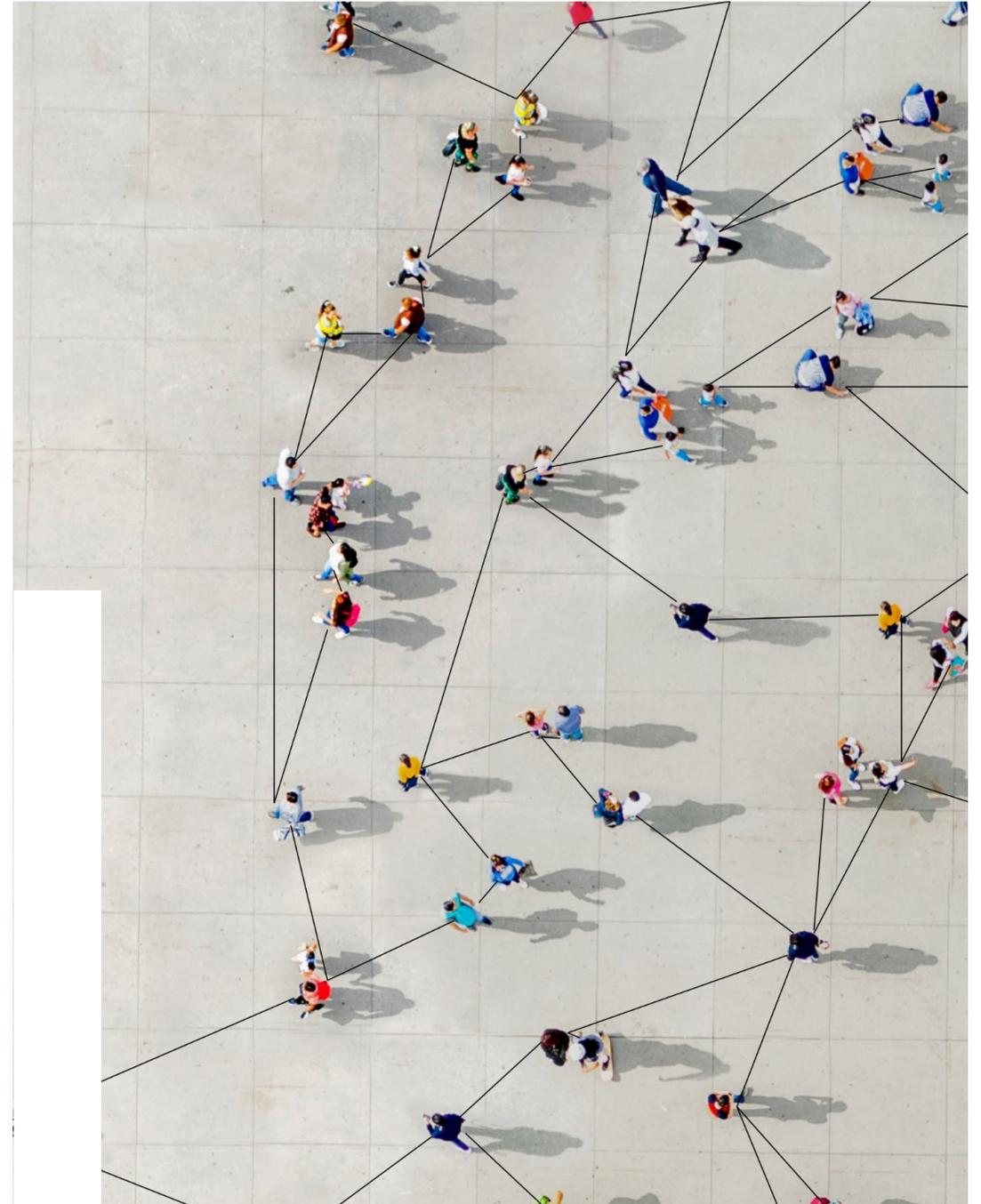
Update on CDT Call

- We have announced planned new investments in Centres for Doctoral Training
- CDTs will support cohorts from 2024/25 and must address:
 - key engineering and physical sciences challenges aligned to EPSRC's strategic delivery plan 2022-2025
 - regional, national or global drivers and opportunities
- Applicants are required to leverage both cash and high value in-kind support from non UKRI sources
- We expect to support up to 40 CDTs – fewer than before due to an overall constrained budget, increasing costs, and a move to more agile and frequent CDT opportunities (subject to future funding availability)



Update on CDT Call

- Applicants will need to choose one of three focus areas:
 - meeting a user-need or supporting civic priorities
 - delivering an EPSRC research priority
 - supporting an innovative approach to CDT delivery
- 2 stage process, starting with short outline proposals assessed by expert panels
- We will be implementing demand management:
 - All eligible institutions can submit one application as the lead
 - We will notify institutions with allocations greater than one in advance of the call launch
 - No limits on the number of applications that project partners or eligible institutions can partner on



UKRI Funding Finder

- <https://www.ukri.org/opportunity/>
- All UKRI funding opportunities are advertised on the funding finder – opportunities can be filtered by council, grant type and opportunity status.
- Details of further ongoing EPSRC opportunities are available on the funding finder:
 - [Overseas travel grants](#)
 - [Strategic equipment grants](#)
 - [Working with overseas scientists](#) (Ireland, Brazil, Luxembourg, USA)
 - [Mathematical sciences small grants scheme](#)
 - All targeted EPSRC calls

UKRI ECR Forum Engagement

Why early career researchers?

- Our action plan to deliver on the Concordat to Support the Career Development of Researchers commits UKRI to giving a greater voice and representation to ECRs
- UKRI's corporate plan commits UKRI to 'convene and catalyse'
- Engagement underpins everything we do

For further information and to apply visit the [UKRI ECR Forum webpage](#)



Thank you

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