



Engineering and
Physical Sciences
Research Council

Welcome





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Research Council

ICT Research Opportunities

Dr Glenn Goodall – Head of ICT Research Portfolio



Engineering Net Zero

EPSRC-funded research Showcase

The week's activities will be focussed through four thematic areas:

- Towards net zero energy
- Solutions for a greener industry and urbanisation
- Our green future
- Delivering zero emissions transport and mobility solutions

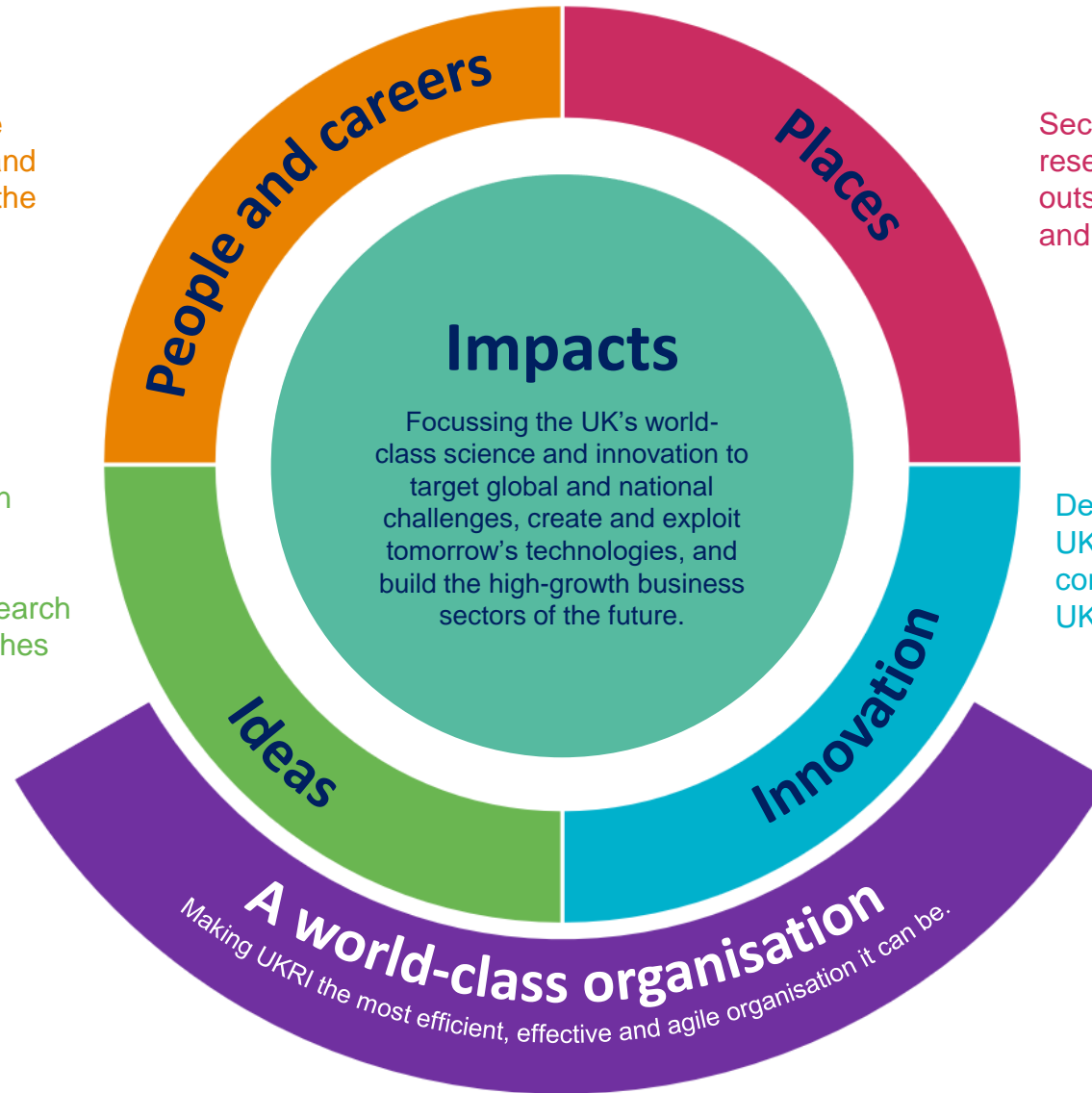


UKRI Strategy

Objectives

Make the UK the most attractive destination for talented people and teams from the UK and around the world.

Advancing the frontiers of human knowledge and innovation by enabling the UK to seize opportunities from emerging research trends, multidisciplinary approaches and new concepts and markets.



Securing the UK's position as a globally leading research and innovation nation with outstanding institutions, infrastructures, sectors and clusters across the breadth of the country.

Delivering the government's vision for the UK as an innovation nation, through concerted action of Innovate UK and wider UKRI.

Discovery Research

Global reach: 40% of EPSRC grants have overseas partners or activities

72% of EPSRC portfolio by value is multidisciplinary research

Successful critical mass investments:
Henry Royce Institute has led to **over 500 publications, £200m** of grant and industry funding awarded to its researchers, **350 new industry-academia collaborations**

Comparison of field-weighted citation index in 8 EPS disciplines shows **publications from EPSRC-funded research consistently outperform** those from the UK as a whole, and those from G7 nations and China.

Mission Inspired and Translational Research

1600 spin-outs created from EPSRC funded research; 1007 are still active, **employing 25860 people** and turning over **>£6bn annually**, with 48% receiving funding from Innovate UK

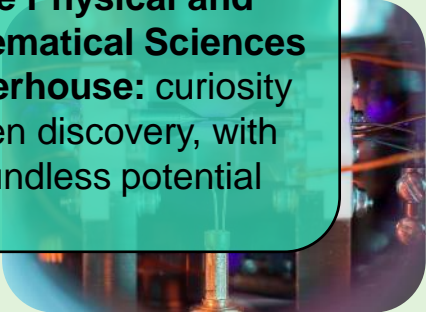
The **National Quantum Computing Centre (NQCC)** will address the challenges of scaling quantum computing, to achieve the UK's ambition of being the **world's first quantum-ready economy**, building on two decades of investment in fundamental quantum physics

The Rosalind Franklin Institute: formed less than four years ago and already made **world leading contributions** to the fight against Covid-19, with profound biological insights and potential new medicines by **connecting** engineering and physical sciences to the life sciences

EPSRC's Strategic Priorities

Core Disciplines

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



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

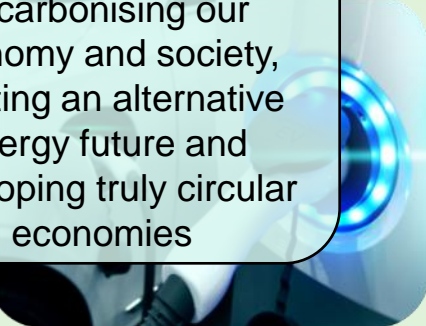


Digital Futures: the future of communications, computing and the internet



Mission-Inspired and Translational Research

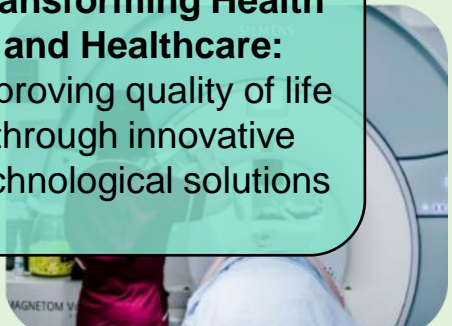
Engineering Net Zero: decarbonising our economy and society, creating an alternative energy future and developing truly circular economies



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



International

Talent and Skills

Place

World Class Infrastructure

Impact

Business Engagement

Cross-ICT Priorities

Cross-cutting priorities

Delivery Plan, Digital Futures - Ambitions

Next Generation Computing

- New and emergent ideas and technologies
- Neuromorphic and quantum computing
- Future Internet
- Creative industry and technology

Sustainable ICT

- Reduce energy and resource consumption across digital systems
- Driven by low-powered design – “*Better Chips for a Better Future*”
- Sustainable Digital Society

Future Communications Systems

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

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 & Trust

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

ICT Team Members

Team Structure

Glenn Goodall
Head of Theme

Beth Turner
Senior PM

Laura McDonnell
Senior PM

Jen Wilkinson
Senior PM

Jess Phillips
PM (Comms)

Jo Humphries
PM (HCI)

Jasmine Harvey
PM (Audio, Visual and
Senses)

Rachel Lamb
PM (Fundamentals of
Computing)

Alex Oliver
PM (Electronics)

**Maryam Crabbe-
Mann**
PM (Devices)

Sonia Raikova
PM (PUC)

Liam Boyle
PM (Data Science,
within AI theme)

Robert Hicks
PM (AI Technologies,
within AI theme)

Heather Large
PSM

Jack Allen
DST

Ann Stevens
DST

Kieran Moulton
PSM

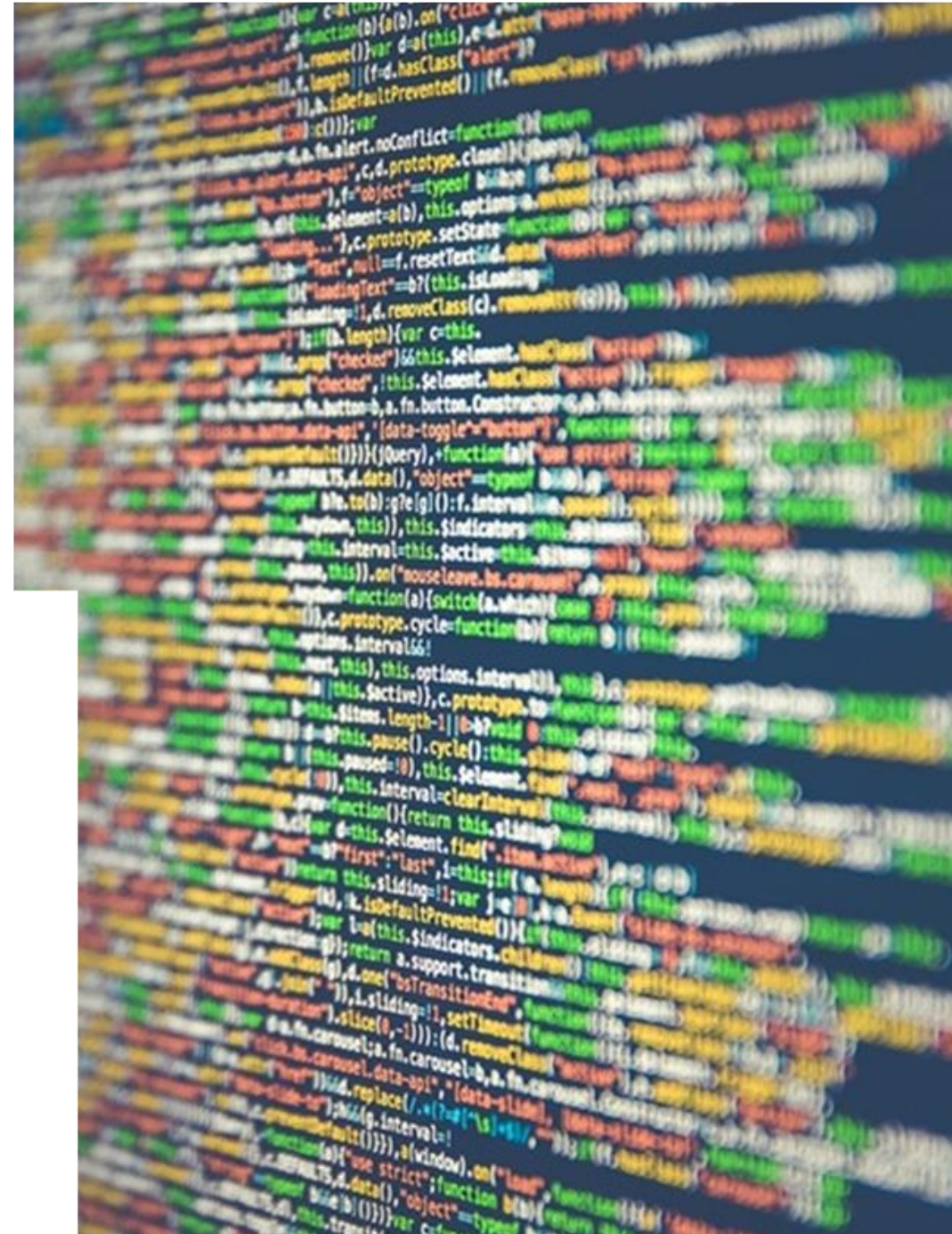
Nina Cox
PSM (within AI
theme)

EPSRC Funding Delivery

Spending Review Update

To note:

- The UKRI board and Executive Committee (ExCo) have agreed recommendations for allocations to Research Councils.
- These will be shared with the Secretary of State.
- UKRI and Research Councils will have the outcome in April, and this will be made public in May 2022.

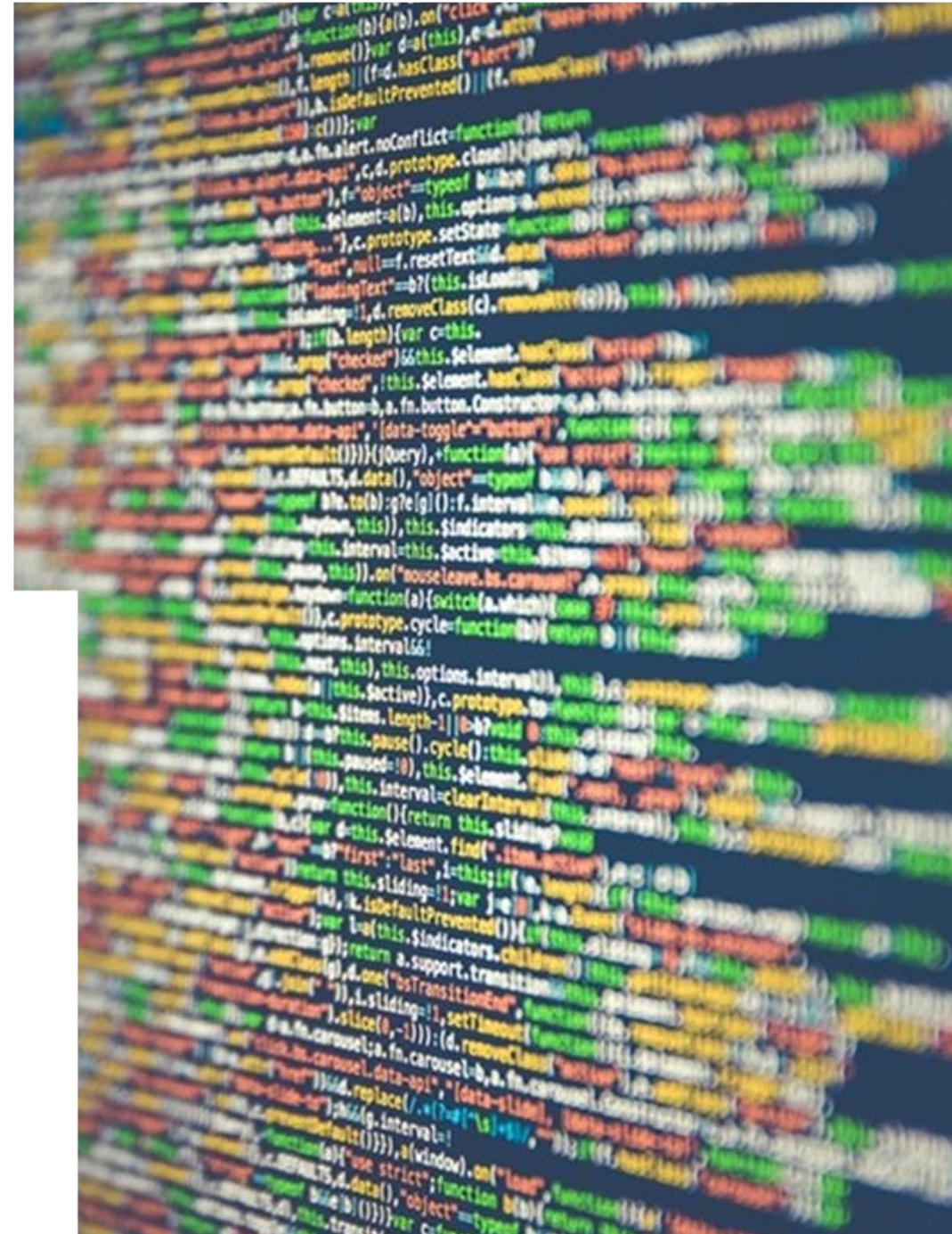


EPSRC Funding Delivery

General Opportunities Overview

Routes to funding:

- Standard Mode – Five panels a year (between £500k to £800k)
- New Investigator Awards (Ca. £150k)
- Programme Grants (up to £6m)
- Open Fellowships

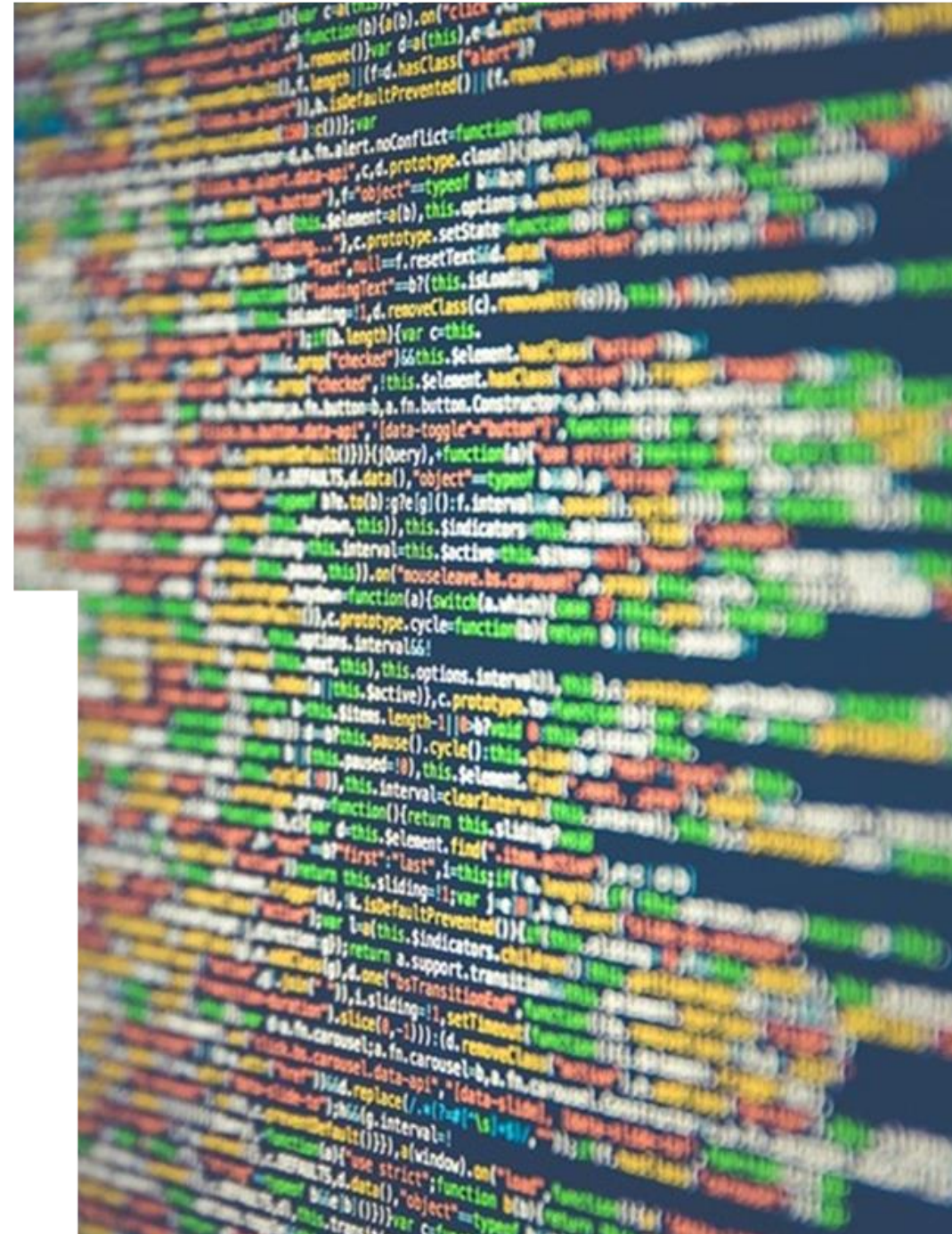


EPSRC Funding Delivery

Other Opportunities

Planned activity 2022/23 (subject to budget allocation):

- Future Communication Systems hubs
- Human-Centred Decision Making through Data Visualisation call
- Materials and architecture for low-powered design highlight call
- New Horizons (Full proposal)
- CHIST-ERA call
(conference registration open)



EPSRC Funding Delivery

Opportunities

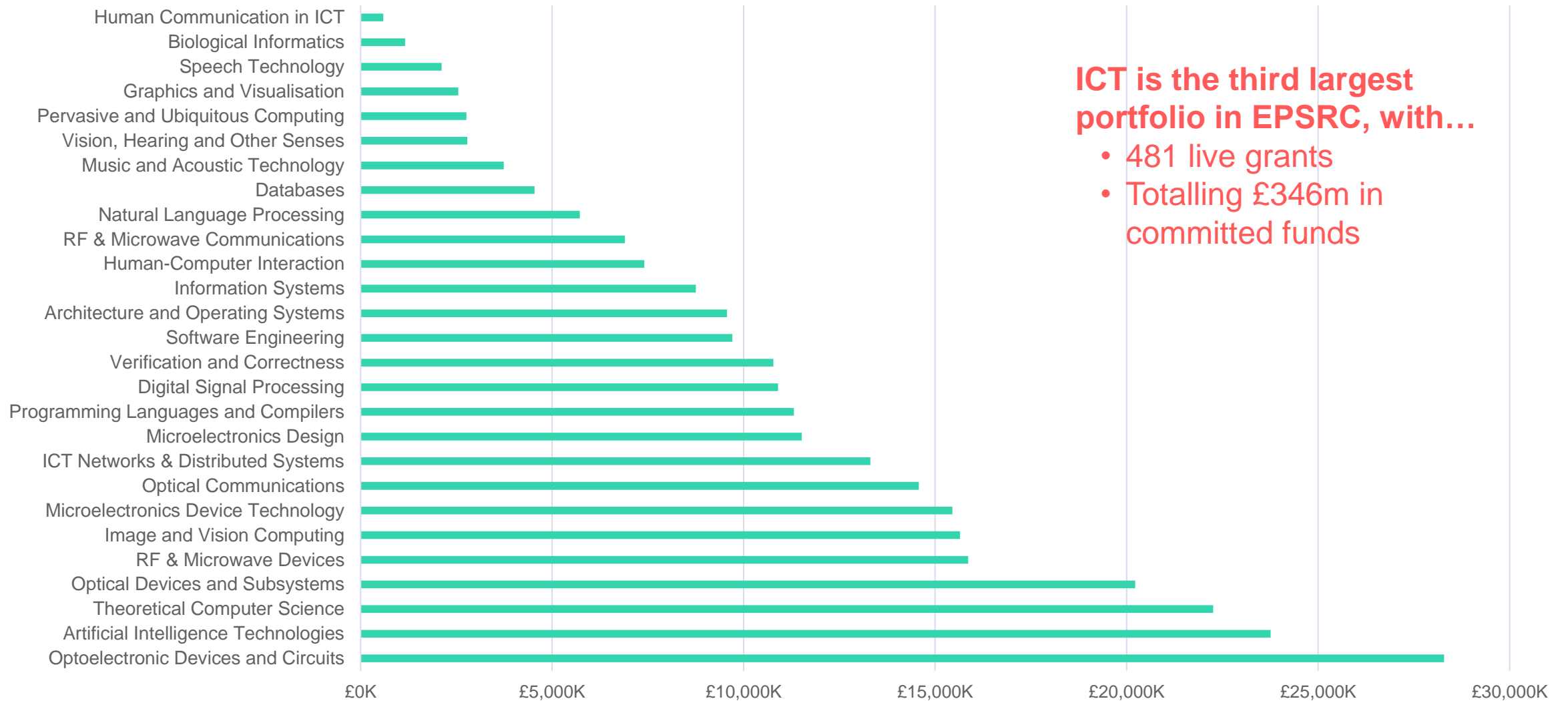
How you can help:

- Become a panel member
- Provide a review
- ED&I group



EPSRC Funding Delivery

Committed funds by research area – As of February 2022



EPSRC Digital Technology Portfolio

Changes which took effect as of 1 April 2022

EPSRC operate challenge themes to address and deliver impact against the most pressing challenges of the moment. We continually review these challenges, and the strategic outcomes we seek. We have reflected on our theme landscape, the external landscape, priorities and policy drivers. As a result, we are now making some changes.

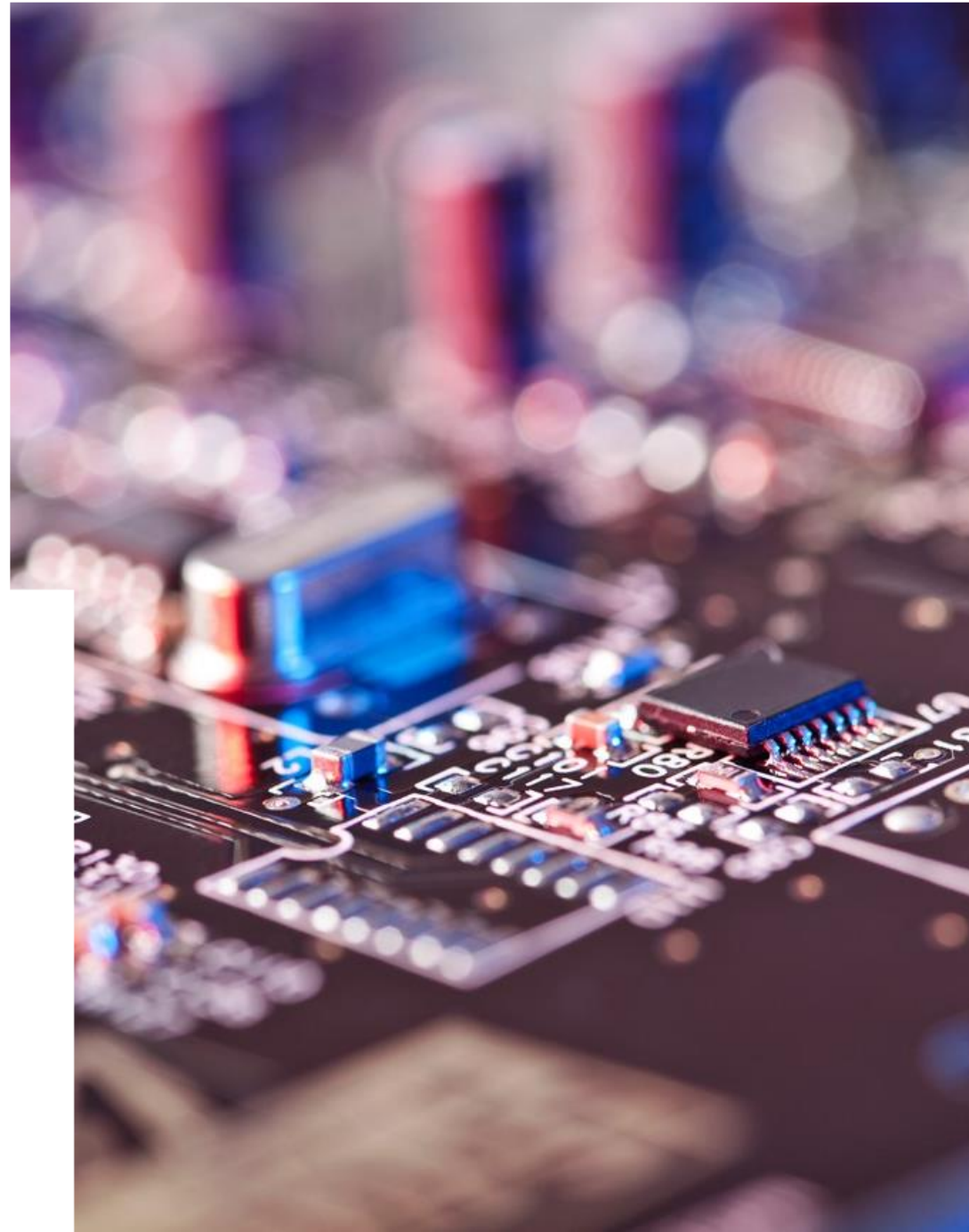
We will be closing **Digital Economy** and **Digital Twins** as separate themes, whilst mainstreaming the Digital Economy approach, embedding appropriate user involvement, interdisciplinary working and true co-creation with potential users of research in all our digitally facing research.

We will establish a new theme that will come into operation in April 2022 to coincide with the new financial year. The new theme, entitled '**Digital Security & Resilience**' (DS&R) will 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.**

What this means for ICT

Peer review considerations

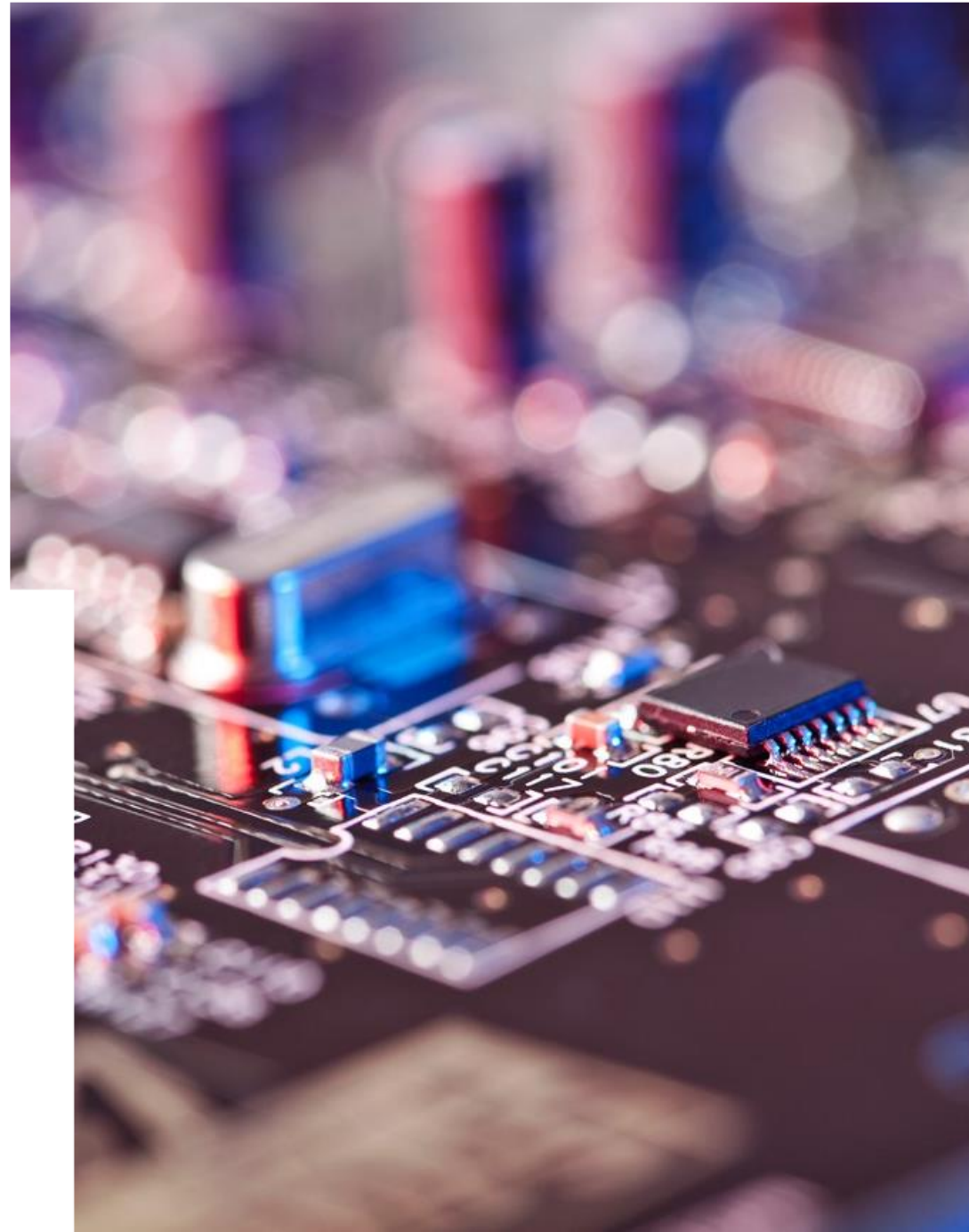
- Challenging any unconscious bias or negativity towards interdisciplinary proposals at panel.
- Portfolio Managers will challenge any unconscious bias or negativity towards interdisciplinary proposals at review stage.
- We will invite a member of DE PAB to take part in our standard mode panels for the next year.



What this means for ICT

Monitoring and evaluation

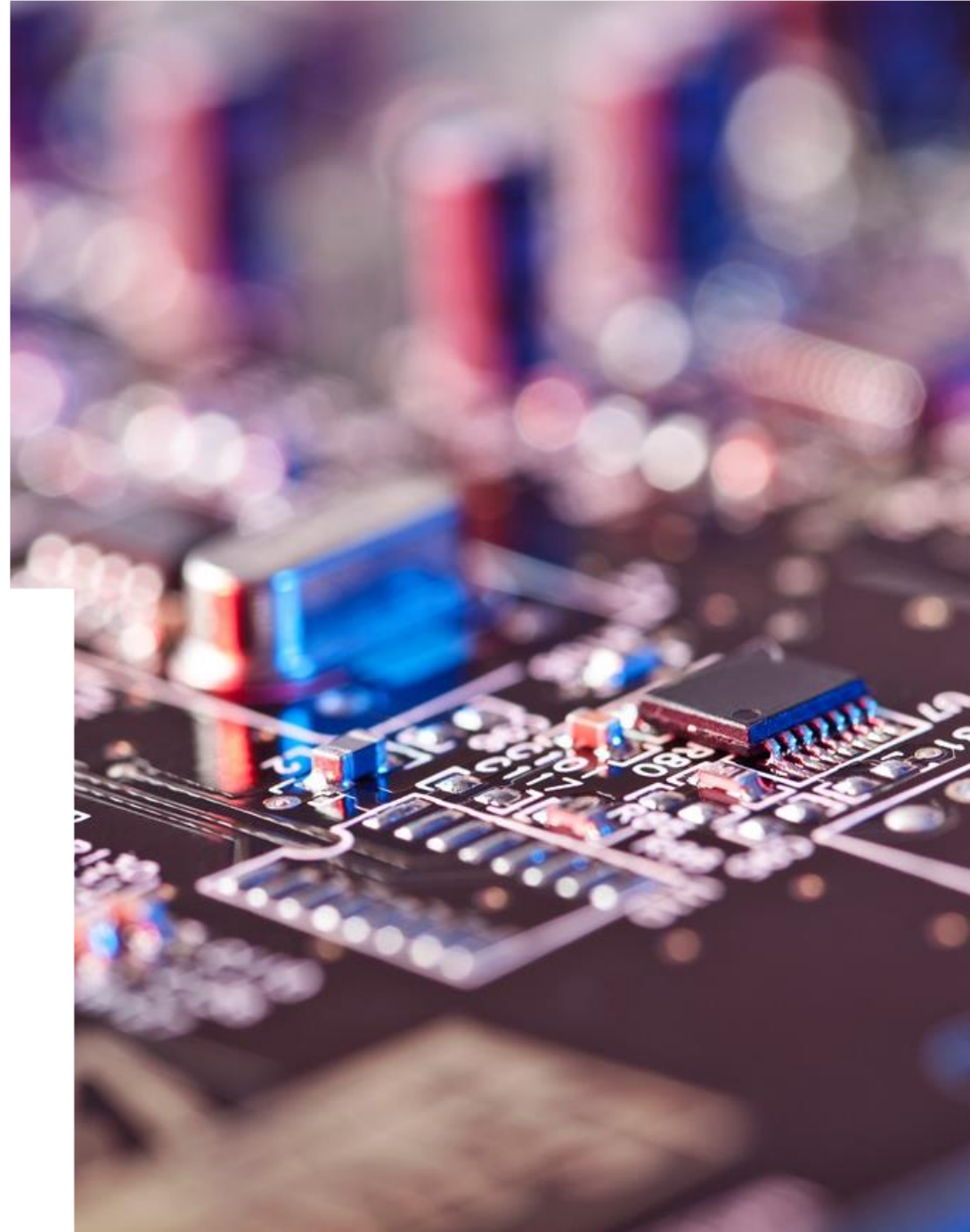
- Prepare baseline data for levels of Interdisciplinary research within the existing ICT research portfolio. Check effect of mainstreaming on this one year later.
- Hold check-in roundtable with members of DE PAB, ICT SAT and panel chairs at 6, 12 and 18 months.
- After one year, we will hold a focus group with members of the DE community to gauge the effect of the intervention, to seek feedback and enable continuous improvement.



What this means for ICT

Advice needed from the SAT

- What are the tangible benefits that you can see to this approach?
- Are there any challenges or barriers to the approach that we need to be aware of and how might we mitigate them?
- Are the monitoring and evaluation plans adequate?



The ICT Team

Glenn Goodall	Theme Lead
Laura McDonnell	Senior Portfolio Manager, Sustainable ICT, Trusted Research, Business Engagement
Bethany Turner	Senior Portfolio Manager, Future Comms Systems, New Horizons
Jennifer Wilkinson	Senior Portfolio Manager, Next Gen Computing, Cross-ICT Priorities
Maryam Crabbe-Mann	Photonics Devices, Software Engineering, New Horizons
Rachel Lamb	Theoretical Computer Science, Programming Languages, Verification & CHIST-ERA
Alex Oliver	Electronics, Architecture & Operating Systems, Trusted Research
Jessica Phillips	Communications, EDI in ICT
Jasmine Harvey	Graphics, Image & Vision, Speech, Fellowships
Joanne Humphries	Natural Language Processing, Human-Computer Interaction, International Strategy
Sonia Raikova	Pervasive & Ubiquitous Computing, Programme Grants



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Thank you



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