Engineering and Physical Sciences
Research Council

EPSRC
Investing in research for discovery and innovation

Introduction to EPSRC strategy and application process

SFI-EPSRC partnership launch meeting, Dublin, 25 April 2017

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Presentation outline

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Investing in research for discovery and innovation

- Introduction to EPSRC
- EPSRC strategy: Balancing Capability
- International strategy
- Delivery Plan 2016-2020
- Application process
- Format for joint SFI-EPSRC research applications

EPSRC: Investing in research for discovery and innovation

EPSRC
Investing in research for discovery and innovation

- EPSRC is at the heart of discovery and innovation
- We invest in long-term, fundamental engineering and physical sciences research and training in the UK
- Committed to excellence and impact, we support the talented scientists, engineers and postgraduate research students who through their research, discover new knowledge, explore new ways of thinking and drive innovation
- Our research ranges from chemistry, physics* and mathematics to materials, computing and engineering
- Our research provides underpinning knowledge that informs other fields such as the life and medical sciences
- Our research places the UK as a leading global research nation. It saves lives, creates prosperity, protects the environment and inspires future generations

*Please note that astronomy, particle physics and nuclear physics are covered by STFC

Current UK Research Council landscape

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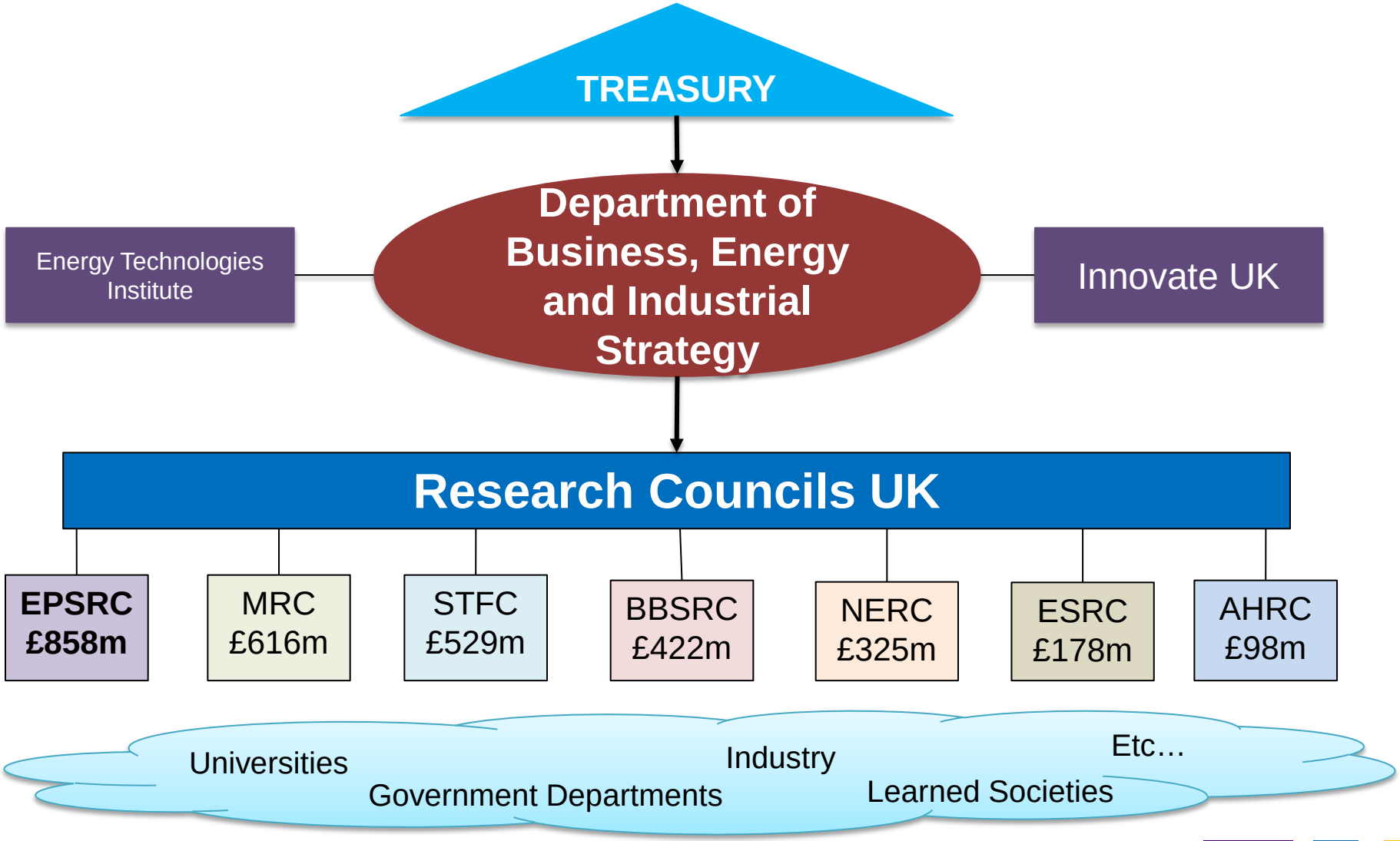

Key EPSRC facts

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£4.6bn
EPSRC'S TOTAL RESEARCH & TRAINING PORTFOLIO

£800m
ANNUAL BUDGET

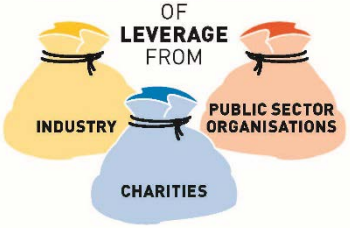
54%
OF EPSRC'S RESEARCH PORTFOLIO **IS COLLABORATIVE**

56%
OF OUR PORTFOLIO **IS MULTIDISCIPLINARY**

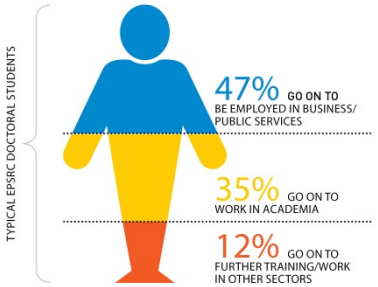
6,000
RESEARCHERS SUPPORTED

£3.2bn
OF OUR PORTFOLIO **IS RELEVANT TO THE INDUSTRIAL SECTORS**

£1.1bn
OF **LEVERAGE** FROM



OVER **3,553**
ORGANISATIONS **INVOLVED IN COLLABORATIVE EPSRC GRANTS**



EPSRC Strategic Vision

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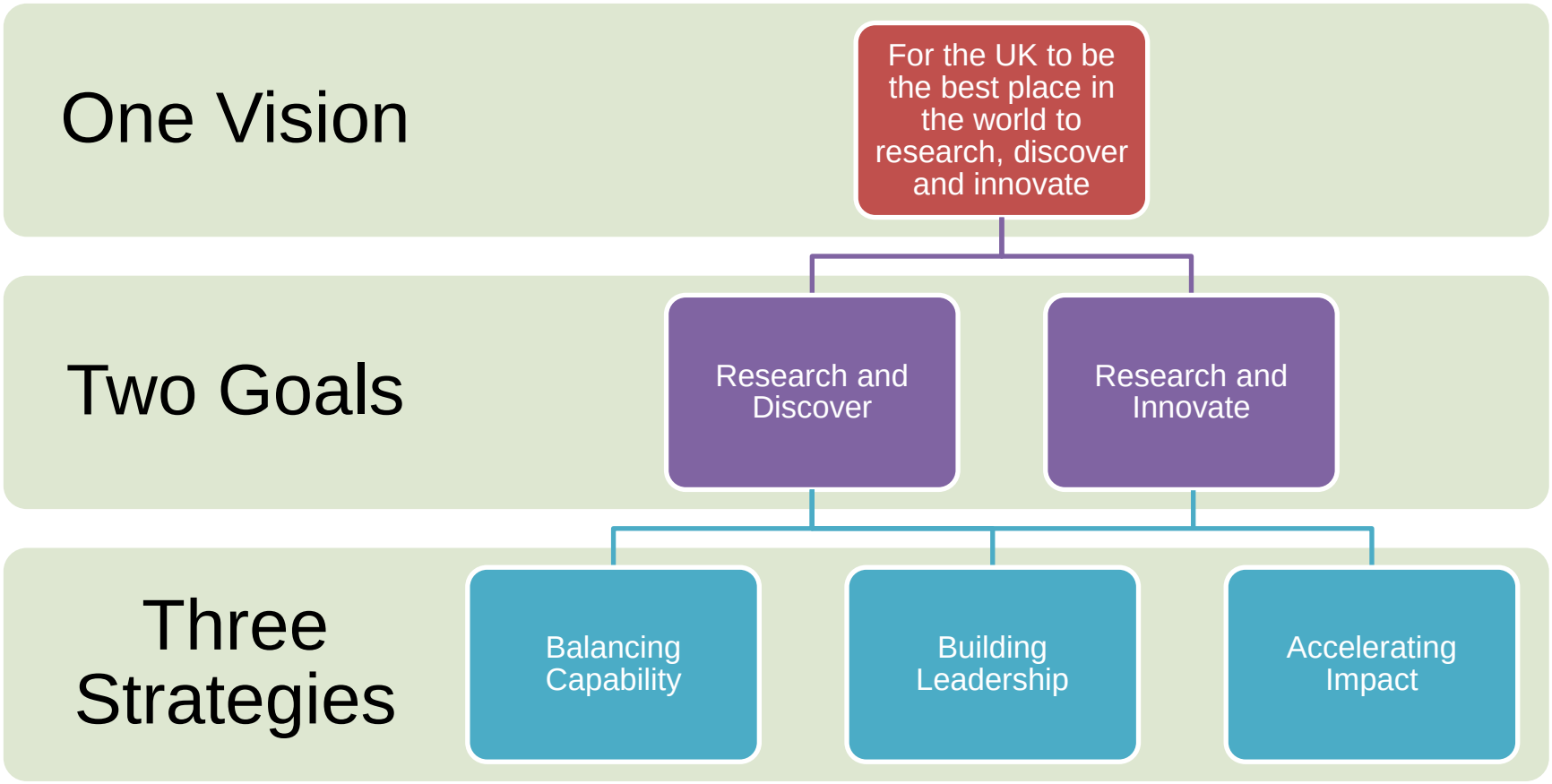

Balancing Capability

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What is Balancing Capability?

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- Balancing Capability is how EPSRC targets its energy and resources to allow the research community to deliver excellent science that is aligned with the vision and goals articulated in the EPSRC Strategic Plan.

- The strategy captures information about the research portfolio as a whole in order to:
  - Understand how the EPSRC research base aligns to the Delivery Plan;
  - Understand how best to influence it to ensure quality; and
  - Create future capabilities that respond to emerging challenges.

Balancing Capability

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- The goal is to align the EPSRC portfolio with areas of **UK strength and national importance** and maintain the UK's **international research standing**, despite increasing competition
- The strategy seeks to ***balance capabilities to create the space for new activity*** and opportunities to develop
- Balancing Capability provides ***external challenge*** on behalf of the research system as a whole
- Balancing Capability ***promotes reflection*** by describing to the research community how the research base aligns with and contributes to our Delivery Plan
- Balancing Capability produces a ***major knowledge resource*** of the shape of the whole portfolio to help inform EPSRC operations

What does it mean for research areas?

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- Irrespective of trajectory what needs to be done, by whom and how, is context-specific.
  - ***Grow***: the share of the portfolio is projected to increase. This may be via appropriate strategic interventions and/or community led activity.
  - ***Maintain***: Active monitoring & intervention if necessary. In many instances how the research is organised and focused needs to change, not the share of the portfolio.
  - ***Reduce***: Areas where there is scope to reduce the share of the portfolio without adversely impacting upon the achievement of the vision and goals overall. This includes a strategy for change in the rationale that protects excellence and encourages and supports the refreshing of research agendas as part of the intrinsic process of academic renewal.

- Rationales are key to guiding any response
  - The rationale for each area ***articulates what needs to change***, on the basis of evidence and advice received.
  - Area rationales are ***not prescriptive statements*** of what 'must' happen; they are suggestive of changes that could be beneficial to research in the UK.
  - The rationales are ***nuanced and allowed to change over time***, and recognise that what actually happens may be different, with this forming a basis for understanding and tracking that change over time.

Balancing Capability in the current Delivery Plan

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- Within the delivery plan period, we need to ensure that our research area strategies support our future aspirations
- We have therefore set out our strategic trajectories for each research area in our portfolio (grow/maintain/reduce) for the period from 2016-2020
- We will continue to monitor the portfolio during the Delivery Plan and make changes in response to external factors as needed

Its role as a knowledge resource

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International Strategy

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International Strategy

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- Aim to enable every EPSRC sponsored researcher (from student to principal investigator) to collaborate with the best researchers from across the world where it adds value to the research they are undertaking

- International collaborations attract over **£200M** of additional investment with partners across **50** different countries

United States Switzerland France Germany Norway Netherlands China Belgium Ireland Japan Italy Sweden Australia Canada Denmark Republic of Korea Spain Singapore Finland Israel Portugal Austria Greece India Russian Federation Iceland Hong Kong Saudi Arabia South Africa Qatar New Zealand Hungary Georgia Brazil Czech Republic Romania Luxembourg Chile Uganda Slovenia Kenya Tanzania United Republic of Serbia Argentina Turkey Mexico United Arab Emirates Ghana Bulgaria Bangladesh Estonia

- UK costs of international collaboration can be included in any grant proposal and can be from anywhere, subject to the scientific case being made

- Lead agency agreements with overseas funding organisations where practicable to avoid the double jeopardy of parallel submissions

International Strategy – strategic focus

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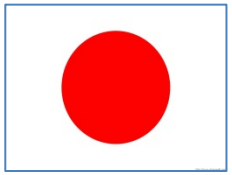
- Our strategic focus is on enabling collaborations with key partners:

USA  Europe  China  Japan  India 

- Focus proactive engagement on countries/regions historically strong in EPS and countries rapidly growing their capabilities in EPS

- Additional investment from specific projects with our key partners

<u>For example</u>

US-UK Sustainable materials for energy collaborative research projects in partnership with ESRC and NSF

International research in security (IRIS) visiting fellowships programme, supporting eminent researchers in cyber security from India, Israel and Japan

EPSRC Delivery Plan 2016-2020

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Delivery Plan Framework

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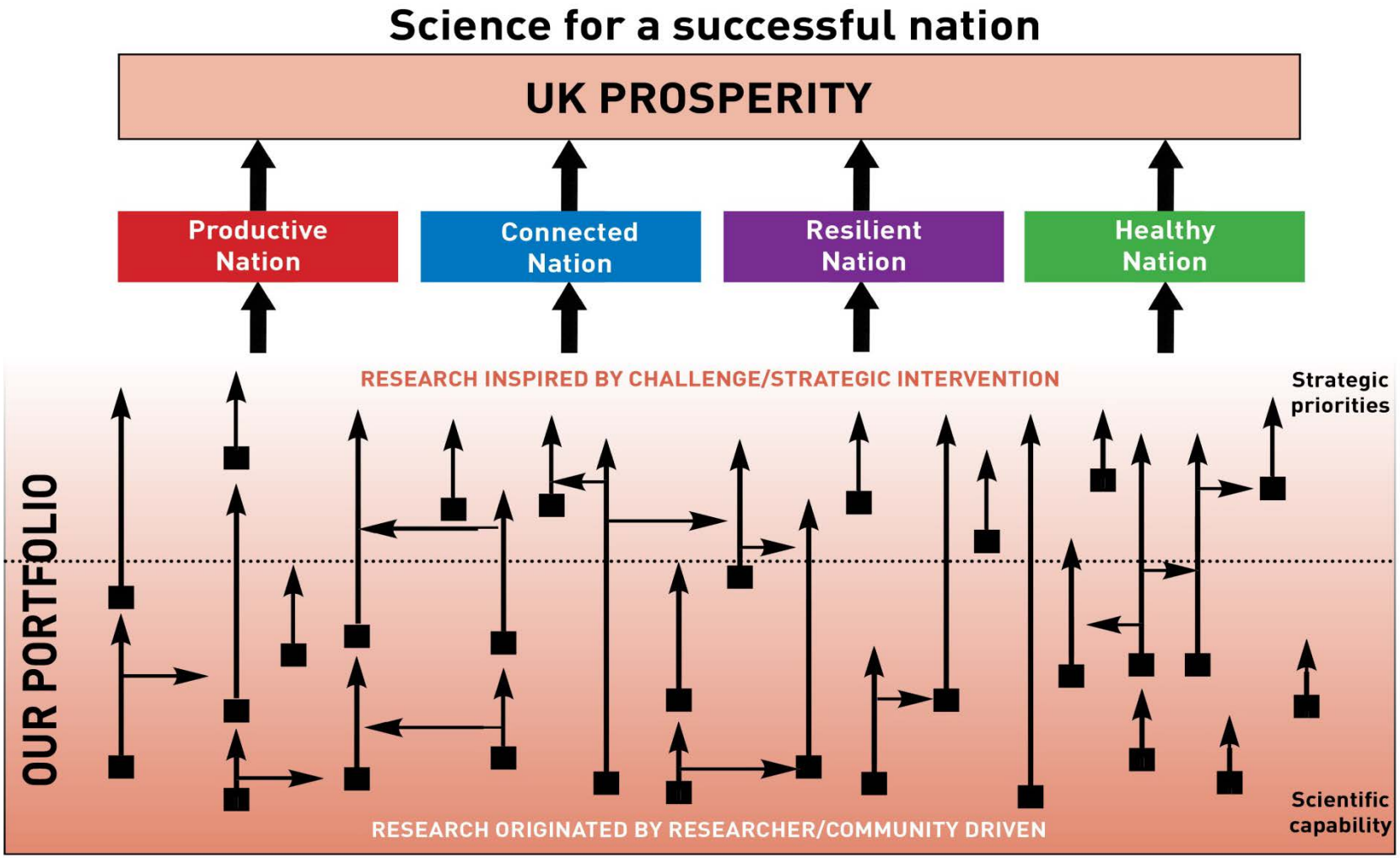

The outcomes framework

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The Outcomes framework provides

- an **exciting, strategic expression** of our plans which captures our value-add to the nation
- contextual opportunities for **seeking additional funding from government**
- a **framework to help researchers** to think about their contribution to national and global challenges and to stimulate collaboration

It is **NOT** intended to tightly prescribe research activities

We continue to welcome long-term discovery-led research

See:
https://www.epsrc.ac.uk/newsevents/news/deliveryplanupdate/outcomesandambitions/

Delivery Plan Outcomes in the context of the research landscape

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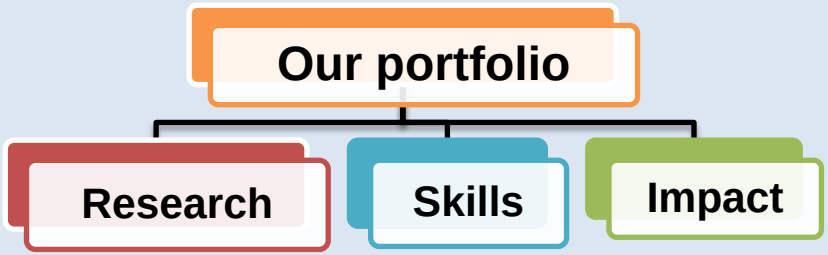
UK PROSPERITY

WORLD CLASS LABORATORIES

INSTITUTES
Alan Turing
Physical Sciences
Royce
UKCRIC

UK RESEARCH AND INNOVATION

GLOBAL CHALLENGES RESEARCH FUND



STRATEGIES
Balancing capability
Building leadership
Accelerating impact

Productive nation

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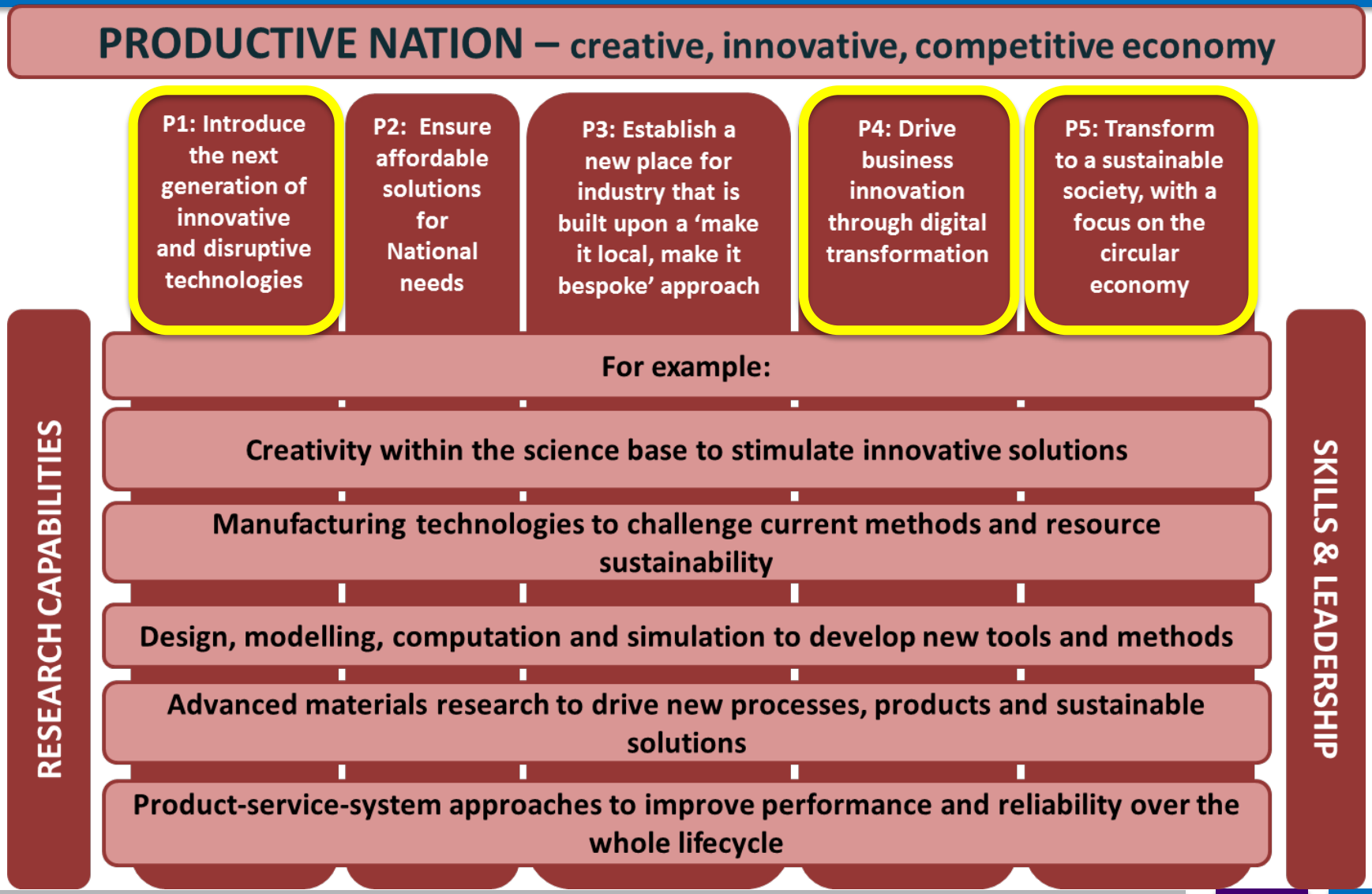

Connected nation

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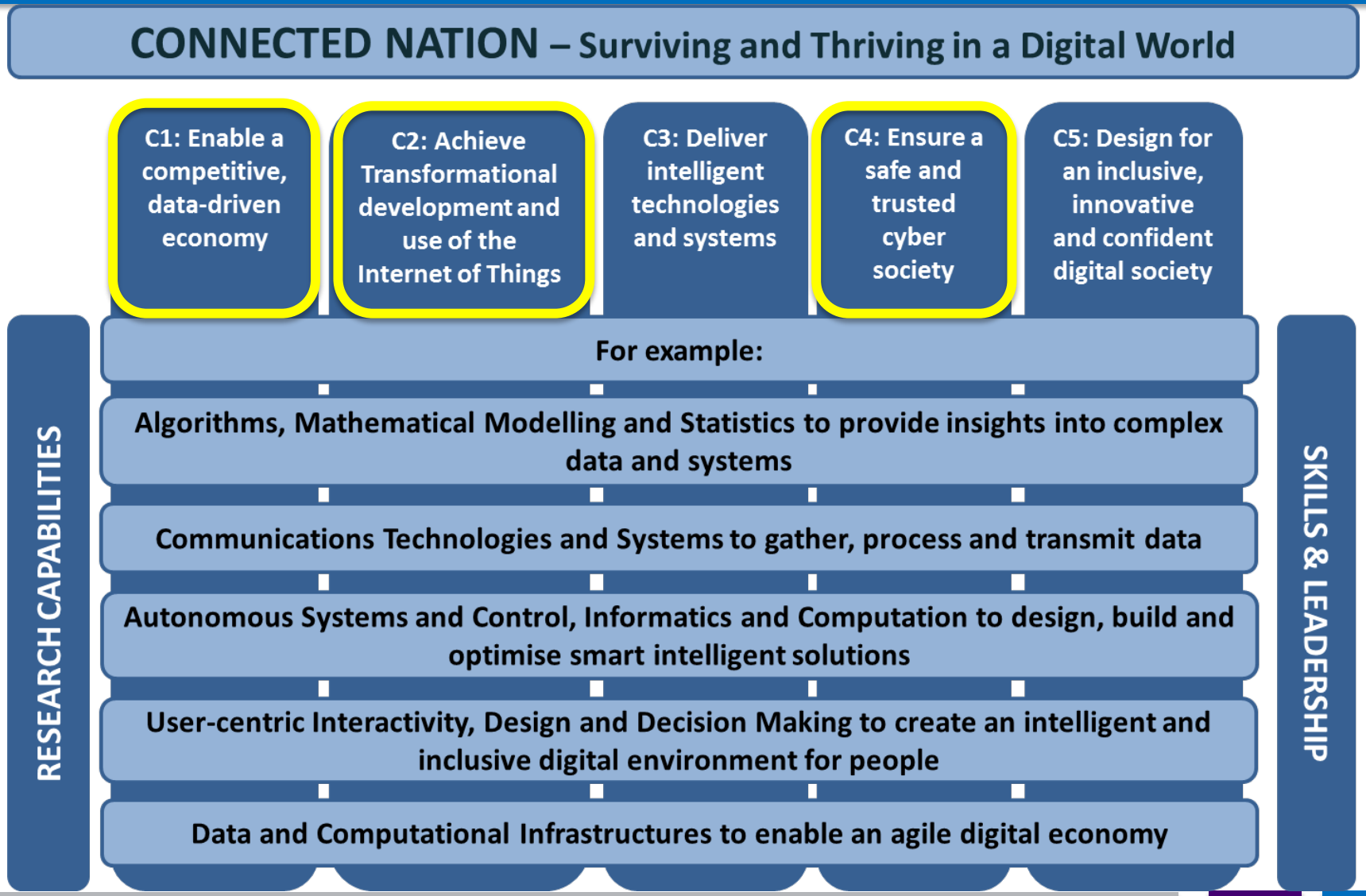

Resilient nation

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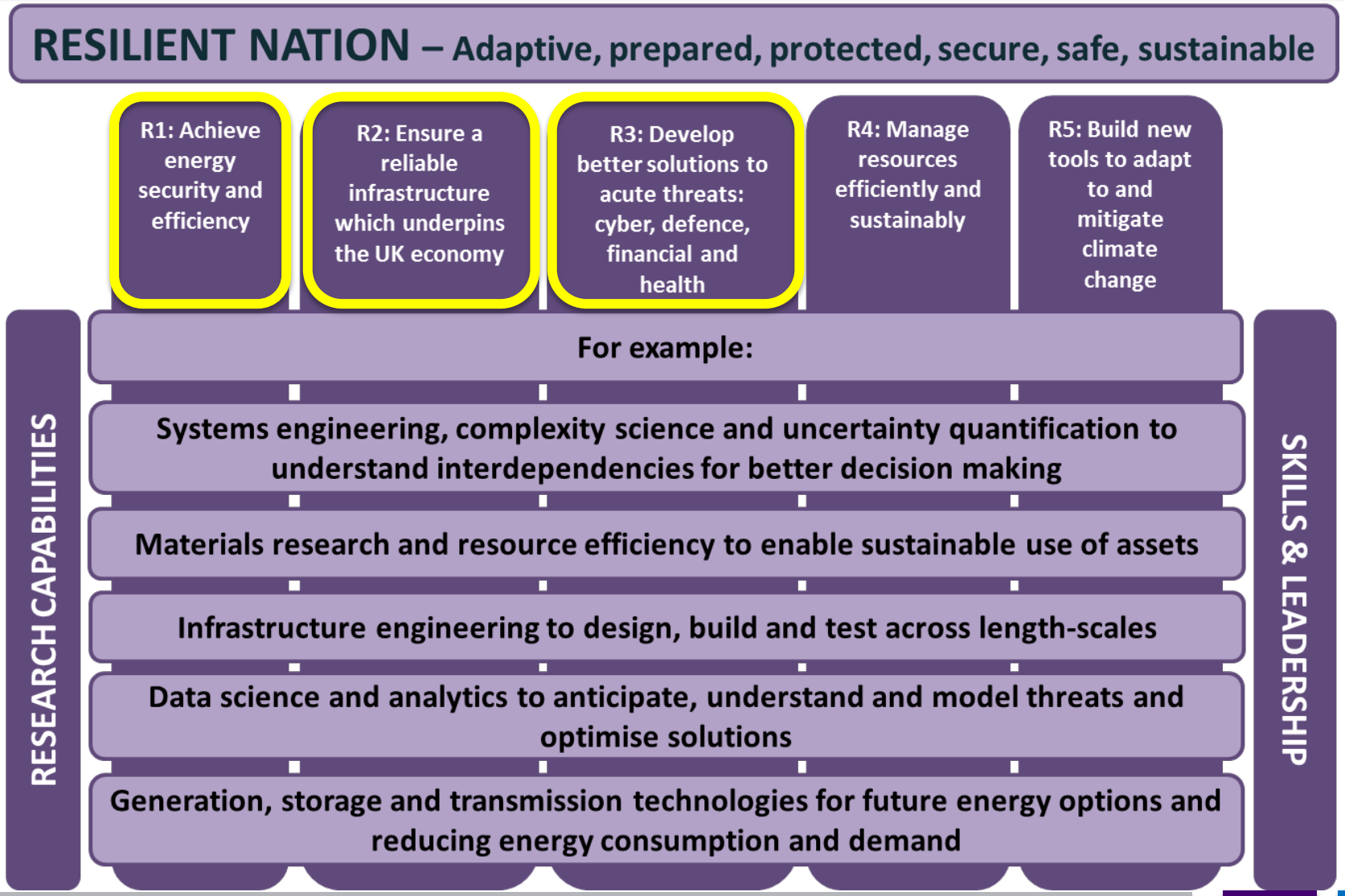

Healthy nation

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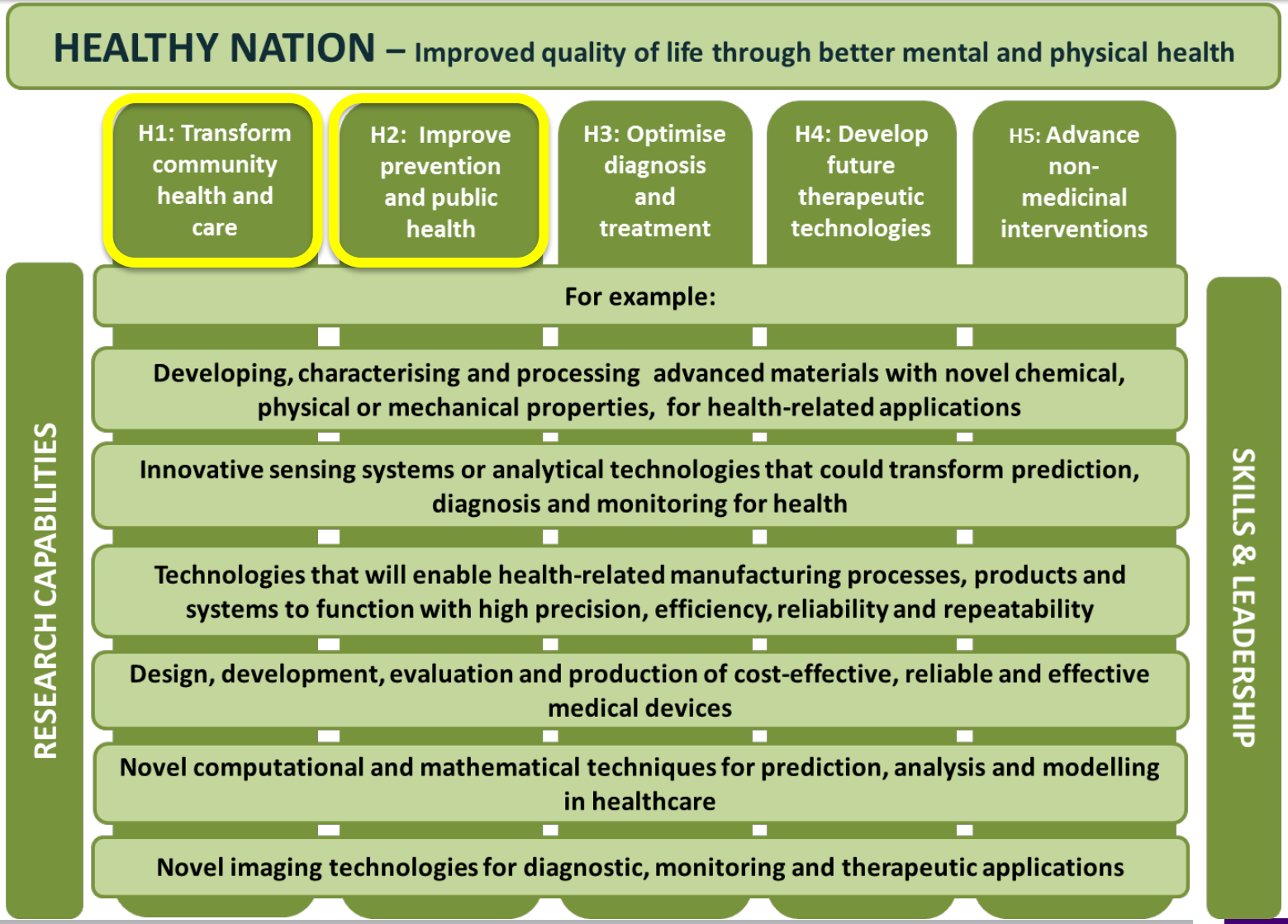

EPSRC application process

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Standard Research - Process

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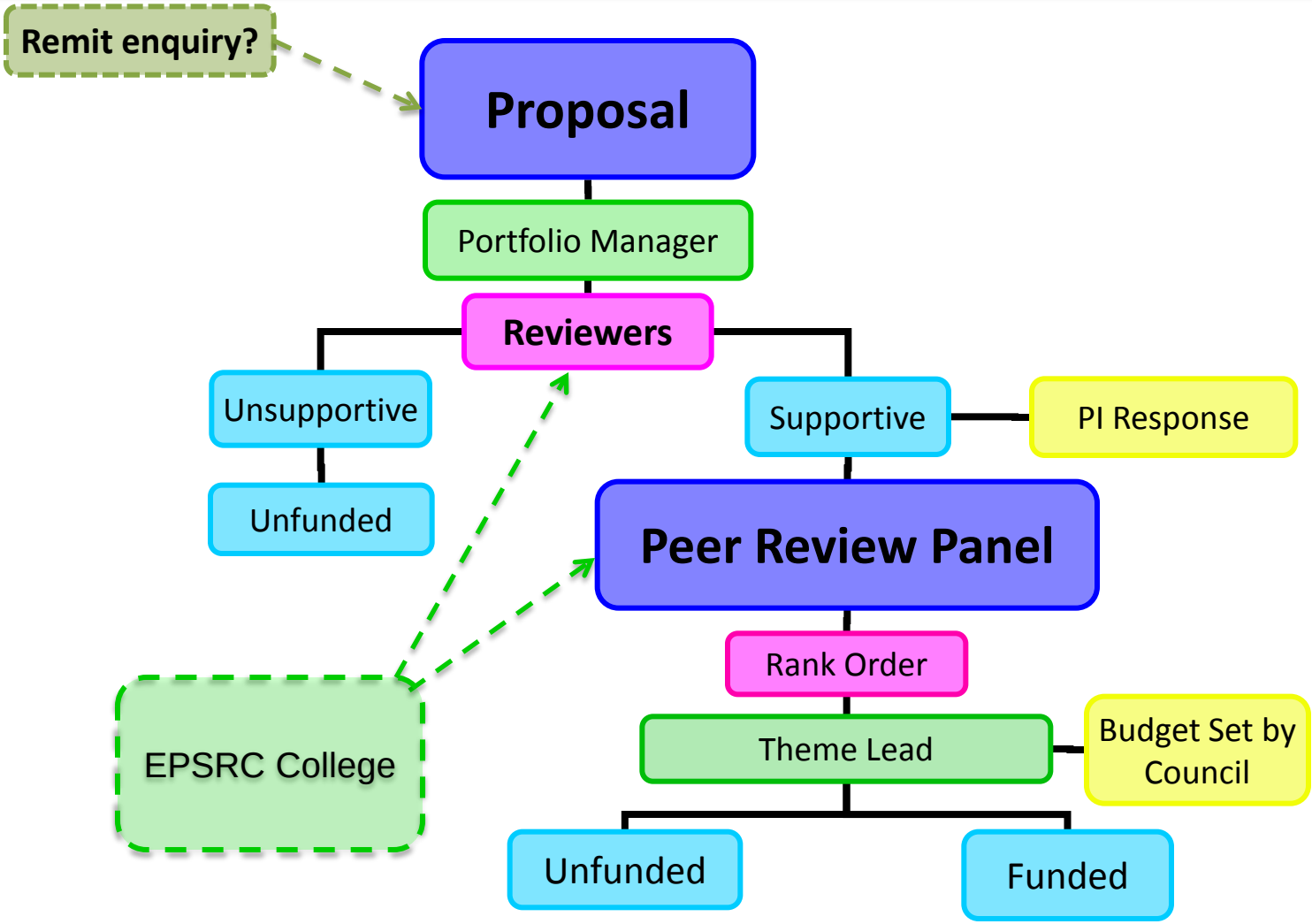

Assessment criteria

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All proposals are assessed against a set of core assessment criteria:

- Research Quality (Primary criterion)
- National Importance
- Pathways to Impact
- Applicants – composition of team, track record
- Resources & Management

Some funding schemes and calls for proposals have additional criteria to those listed above

EPSRC peer review – key facts

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- Process used to make a judgement on proposals submitted to EPSRC by academic community
- Underpins EPSRC's funding decisions
- Adheres to ten principles of peer review
- Different peer review processes used for different funding opportunities (standard research or managed call)
- Fixed criteria of assessment (with option to add criteria)
- EPSRC uses a process that has evolved and is continually changing
- Panels are paperless (Extranet)

EPSRC peer review principles

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- Peer Review is at the heart of our business
- EPSRC funds are allocated based on peer review advice
- It is important that EPSRC uses peer review with integrity and in a consistent way. To achieve this EPSRC funding initiatives follow a number of principles (https://www.epsrc.ac.uk/funding/assessmentprocess/prprinciples/)

Principles

1. **Transparency** – publish assessment criteria and peer review process
2. **Appropriateness** – use peer review process in proportion with investment
3. **Managing Interests** – conflicts are declared and managed
4. **Confidentiality** – by EPSRC and those working on our behalf
5. **Expert Assessment** – mainly from EPSRC College
6. **Prioritisation** – assess merit of each proposal against others
7. **Right to Reply** – by principal investigators
8. **Separation of Duties** – peer review and funding decisions
9. **No Parallel Assessment** – avoid multiple parallel assessments
10. **Fairness** – unbiased processes, not influenced by gender, ethnicity or any other protected characteristic; committed to equality and diversity

Peer Review College

EPSRC principally, but not exclusively, selects reviewers from the EPSRC Peer Review College. The College is made up of approximately 4000 members

The college broadly represents the research community it serves, and is balanced in a number of ways:

- Spread of expertise covering the full breadth of EPSRC remit
- Age
- Gender
- Ethnicity
- Academic/non-academic
- Geographic locations

When accepting an invitation to join the college, members agree to review proposals for EPSRC, and, where appropriate, attend prioritisation panels

Reviewer selection process

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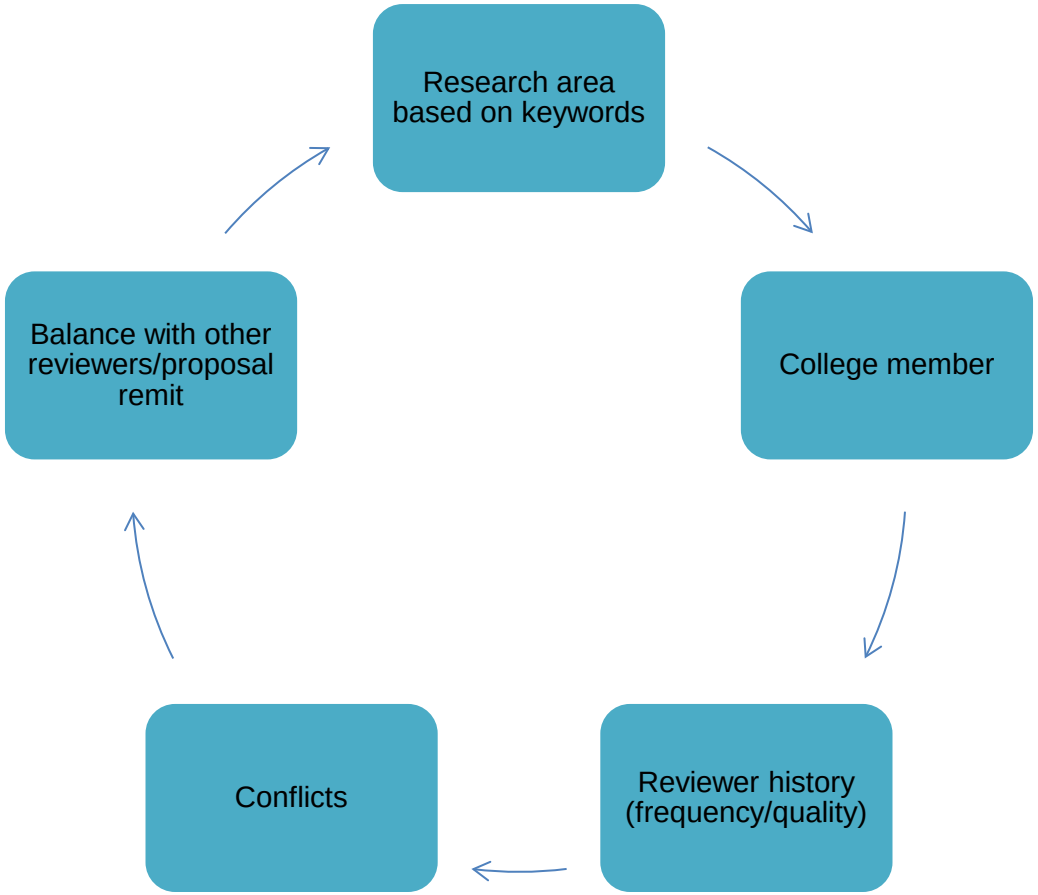

Standard research – meeting process

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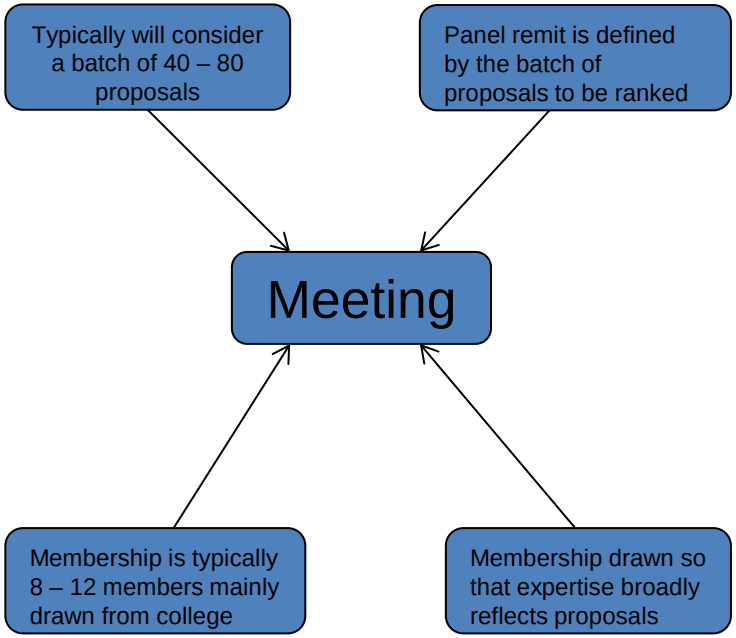
An EPSRC panel is an ad-hoc body established to advise on a particular group of proposals



- Panel places the proposals into a rank list in order of priority for funding
- Panel does not re-review proposals
- Decisions based on expert reviews and applicant responses
- Reviews assess absolute quality of one proposal; panels assess relative quality between proposals
- Panels rank proposals based on all the criteria; research quality (primary criterion), national importance, pathways to impact, resources and management and applicants ability
- There is no fixed weighting attached to any of the assessment criteria relative to another
- The panel identify a ‘quality cut off’ which provides advice to EPSRC on proposals that should not be funded

EPSRC research application format

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We require the following components for a Standard Research proposal:

- Joint electronic submission (Je-S) form – which includes a summary of resources requested, objectives, research summary etc
- Case for support (up to **eight** sides of A4 in total), including:
  - track record of applicants (up to two sides of A4)
  - description of proposed research (up to six sides of A4)
- Pathways to impact statement (up to two sides of A4)
- Diagrammatic work plan (one side of A4)
- Justification of resources (up to two sides of A4)
- CV (up to two sides of A4) for each named researcher, visiting researcher and researcher co-investigator, where applicable
- Letter of support from each project partner organisation
- Technical assessment for the use of any major facility, where applicable (no page limit)

Format for SFI-EPSRC joint applications

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- A single joint proposal should be submitted to EPSRC with the ROI applicants designated as ‘project partners’
- A section on the ROI applicant(s) must be included in the Track Record section of the Case for Support document
- The case for support should include a description of the whole project to be conducted in both countries
- The total direct costs requested by the ROI applicants from SFI should be included in the Je-S form as a cash project-partner contribution
- The Justification of Resources document must include a section on the costs requested by the ROI-based research groups, making it clear which costs will be funded by SFI and which costs will be funded by EPSRC if the application is successful
- The SFI Application Form and associated documents described in the guidance documentation must be included in the Je-S submission as a single PDF attachment