



Engineering and
Physical Sciences
Research Council

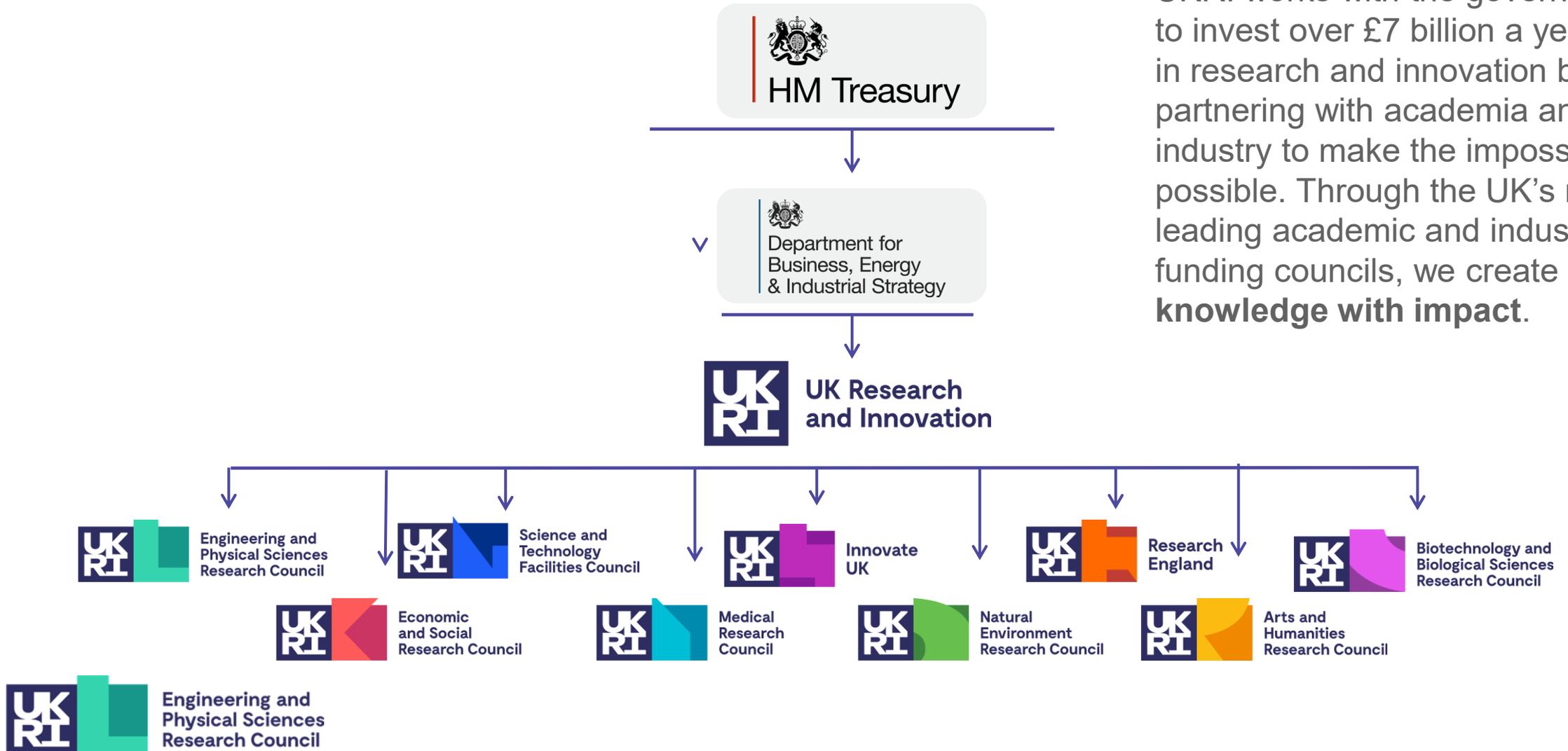
UKRI Landscape and opportunities

Lydia Gardner, Head of Theme for Manufacturing the Future, EPSRC

16th December 2020



Who are we?



UKRI works with the government to invest over £7 billion a year in research and innovation by partnering with academia and industry to make the impossible, possible. Through the UK's nine leading academic and industrial funding councils, we create **knowledge with impact.**



UKRI Landscape – EPSRC view



5 foundations of The Industrial Strategy

- The Industrial Strategy is driving productivity and earning power across the country by focusing on the 5 foundations of productivity that support a vision for a transformed economy.



Ideas

The world's most innovative economy



People

Good jobs and greater earning power for all



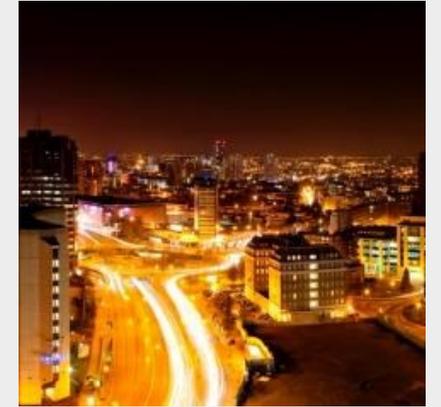
Infrastructure

A major upgrade to UK's infrastructure



Business environment

The best place to start and grow a business



Places

Prosperous communities across the UK

ISCF Manufacturing Made Smarter

- £147m investment
- Objectives to:
 - Increase UK manufacturing sector investment in industrial digitalisation R&D and increase the adoption of new Industrial Digital Technologies
 - Increase cross-sector collaboration between UK manufacturing sectors to drive the creation of common digital solutions
 - Increase the number of digital technology companies providing solutions for manufacturing industries
 - Increase the number of collaborations between SMEs and larger, more established companies up the value chain
 - Increase UK manufacturing and digital manufacturing solution exports.

Medicines Manufacturing Challenge



1. Making the UK a world-leader in medicines manufacturing technologies by capitalising on existing expertise and investments to ensure leadership in the market in advanced medicines;
2. Leveraging our world-leading research and innovation capability, increasing manufacturing capacity across the regions of the UK and delivering a step-change in export values;
3. Increasing knowledge sharing within the Leading Edge Healthcare Technology ecosystem, particularly between business, its supply chains, academia, and the NHS;
4. Increasing overseas investment in R&D in medicine manufacturing in the UK life sciences Sector; and
5. Supporting SMEs within the UK life sciences sector to collaborate and grow.

Other UKRI Funds

Strategic Priorities Fund

- Drive increase in high quality multi/inter-disciplinary R&I
- Respond to strategic priorities and opportunities
- Links up with cross-Departmental R&I priorities and opportunities

Strength in Places Fund

- Support areas across the UK to build on their science and innovation strengths

Fund for International Collaborations

- Enhance the UK's excellence in research and innovation through global engagement

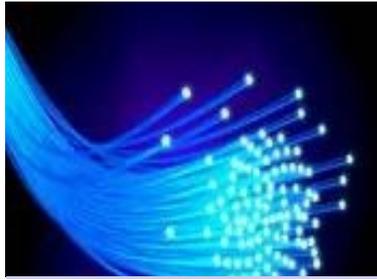
Collaboration

- EPSRC manufacturing interfaces with:
 - Other EPSRC themes
 - Other parts of UKRI: Innovate UK, NERC, BBSRC, MRC, ESRC, AHRC, STFC
- Catapults
- UK Large Facilities
- Business
- Universities
- Government Departments

Manufacturing the Future Strategic Priorities

Strategic Priority	Aim (to support novel research required to enable):
'Responsive' manufacturing	real-time, self-adjusting and optimising manufacturing processes
Precision made and scalable at cost	nanoscale-precision manufacturing at scale
Sustainability and function	parsimonious delivery of product function with maximum material recovery
Digital technology for manufacturing	accurate simulation of products and processes through their lifecycle
Advanced bio and chemical products manufacturing	revolutionary biological/chemical products and the manufacturing processes to deliver them
Whole systems analysis	decision making and value creation in the context of the overall manufacturing ecosystem

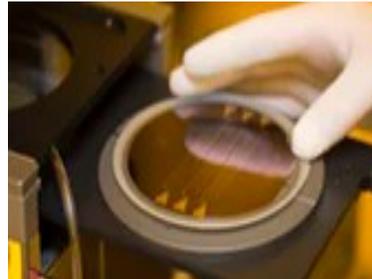
Future Manufacturing Research Hubs



Photonics



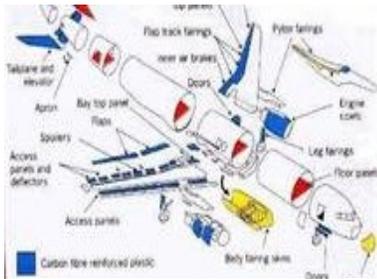
Liquid Metal Engineering



Compound Semiconductors



Advanced Powder Processes



Composites



Advanced Metrology



Targeted Healthcare



Continuous Manufacturing and Crystallisation



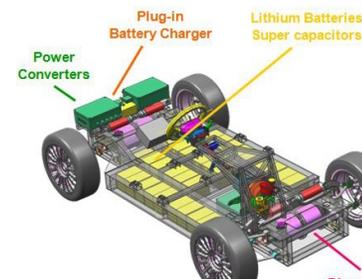
Vaccines



VaxHub



Biomanufacturing



Electrical Machines



SUSTAIN

MtF “top 10” funded HEIs (current grants)*

Holding Organisation Name	Value of funding £
University of Sheffield	33,675,943
The University of Manchester	30,751,725
University of Nottingham	27,520,821
University College London	24,238,427
University of Strathclyde	21,382,700
University of Cambridge	19,439,222
University of Southampton	18,309,311
University of Huddersfield	16,946,581
Cardiff University	14,807,120
Imperial College London	14,714,986
<i>Grand Total</i>	<i>221,786,836</i>

MtF “top 10” funded HEIs (current grants)*

Holding Organisation Name	Number of active grants
The University of Manchester	21
University of Sheffield	17
University of Cambridge	15
University of Nottingham	12
University of Bristol	11
University of Leeds	11
University of Strathclyde	10
University of Birmingham	10
University of Warwick	9
Loughborough University	9
University of Southampton	9
<i>Grand Total</i>	<i>134</i>

*based upon active grants, where >25% of the grant is manufacturing, Nov 2020



EPSRC Manufacturing the Future Funding Opportunities



***New* UKRI Funding Finder**

- **All funding calls across all Councils, in one place**
- Launched October 2020
- Central UKRI website
- Simpler, easier to use
- Currently ~120 funding opportunities open!
- <https://www.ukri.org/opportunity/>

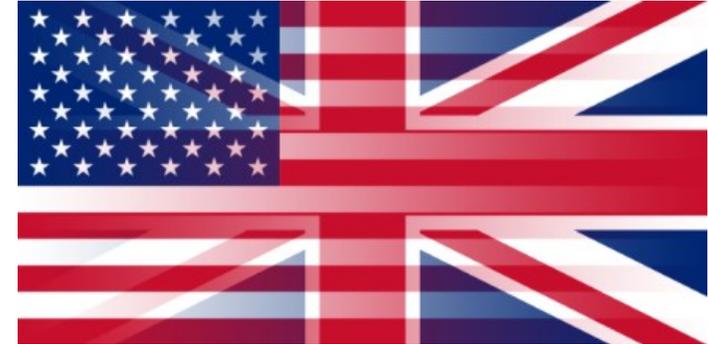
Manufacturing the Future: Standard Research Proposals

- Supports our ambition to increase % of community-led research:
 - Standard, new investigator awards, networks, workshops etc.
- Should address key research challenges facing manufacturing
- Submit anytime
- Standard EPSRC eligibility applies
- Assessment either by:
 - Manufacturing-focused prioritisation panel (if sufficient demand)
 - Separate list at Engineering panel
- **Up to £3.5million** per panel available (4x /yr)
- <https://www.ukri.org/opportunity/manufacturing-the-future/>



EPSRC – NSF(ENG) Lead Agency Agreement

- Researchers submit a single collaborative proposal with eligible applicants from both countries;
- The lead agency follows their usual procedures to process the application and involve peer review;
- Each country's researchers are supported by his/her funding agency;
- The funding agencies align decision-making points where possible.



At least 60 days in advance of the date the applicants expect to submit a formal proposal, proposers must submit an EoI their lead agency.

Contact: Stephanie Williams
(Stephanie.Williams@epsrc.ukri.org)

What else can you apply for?

Fellowships:

- Priorities aligned to manufacturing vision
- Theme contact: Becky Cheesbrough (Rebecca.Cheesbrough@epsrc.ukri.org)

Networks, workshops, overseas travel grants:

- Networks - establish new interdisciplinary community
- Workshops - stimulate future research activities
- OTGs - study new techniques / new international collaborations

Programme grants:

- Aimed at world-leading research groups. Funding for ~2 per year.
- Support activities focussing on a strategic research theme
- Theme contact: Katie Walker (Katie.Walker@epsrc.ukri.org)



Engineering and
Physical Sciences
Research Council

Thank you

Lydia.gardner@epsrc.ukri.org