Making a new ARPA-style agency work in the UK
February 2021

The Royal Society of Chemistry held a workshop with 26 members of the chemical sciences community to explore the challenges and opportunities in creating a new UK funding agency based on the US ARPA/DARPA model, referred to herein as "UK ARPA".

Delegates were drawn from the RSC's community policy group, the Research and Development Landscape Collective, and represented a diverse cross-section of the chemical sciences community in terms of size and type of business, university and public sector research body, career stages, gender, and experiences of either or both the UK and overseas funding systems.

Our recommendations

Integrating UK ARPA into the existing R&I funding landscape

Establishing UK ARPA's unique role within the wider UK R&I landscape should be a key focus government's engagement with the research and innovation community.

UK ARPA must not be restricted to the remit of its sponsor department and have the flexibility to invest on timescales beyond parliamentary horizons and to move investments, where appropriate, between budget years.

Creating a funding agency as agile and flexible as private R&D funding

UK ARPA investments should have appropriate contingency and flexibility to support the movement people between investments when early-stage projects are terminated, supporting stability in research careers and diversity of research opportunity.

UK ARPA should provide seed corn funding in addition to the proposed longer grants to support diversity of ideas and participants.

Expertise in intellectual property, commercialisation and routes-to-market should be embedded in UK ARPA's operating model.

Building diverse research programmes

UK ARPA will need to build an advisory structure which reflects its strategic context, its desired agility an

2. Creating a funding agency as agile and flexible as private R&D funding

UK ARPA investments should have appropriate contingency and flexibility to support the movement of people between investments when early-stage projects are terminated, supporting stability in research careers and diversity of research opportunity. The private sector's agility stems in part from the freedom to stop and start funding relatively easily and the flexibility to redirect people and investments to new research avenues. Gateway models with clearly defined criteria for each stop/ start gate can allow rapid project termination or refocusing resources. There are concerns that this management model in public funding could result in significant career uncertainty, particularly at early career stages. Provision within the agency's funding model to support the redirection of talent could help mitigate this.

UK ARPA should provide seed corn funding in addition to the proposed longer-term grants to support diversity of ideas and participants. Early-stage, precompetitive funding could be deployed by ARPA to support diversity in its applicant pool and in the breadth of ideas available for investment over the longer term. This should be in addition to the longer-term grants already proposed for UK ARPA.

Expertise in intellectual property, commercialisation and routes-to-market should be embedded in UK ARPA's operating model. Realising the benefits of Intellectual property (IP) is seen as less of a barrier in the private sector because companies have clear pathways to accessing specialised support, for example through in-house expertise. The provision of support for research translation in academia can be less consistent and not always clearly signposted. This means researchers can find it difficult to know where to go for support.

3. Building diverse research programmes

5. Equality, diversity and inclusion

Inclusion and diversity should be embedded in UK ARPA's practices and procedures from the beginning. Transparent and inclusive recruitment practices, drawing on the widest possible talent pool, and a framework that allows programme managers to cycle in and out of industry or academia are essential. Once fully established UK ARPA's programme managers should be a diverse team with a range of experiences in different technologies, disciplines, and sectors, from within the UK and internationally.

Equality, diversity and inclusion monitoring should be built into the UK ARPA model from the outset ensuring it is well equipped to identify barriers to entry and bias in decision making process, supporting the delivery of its own ambitions and compliance with the Public Sector Equality Duty.

Our work with researchers in the US highlighted programme managers' use of existing networks as a risk management technique reduced diversity of outcome and access to opportunity. Ensuring a facility that expands UK ARPA's networks in a low risk, low burden way could facilitate its ambitions to deliver diversity of idea and support a diversity of people.

Contact

We would be happy to discuss any of the issues raised in our evidence in more detail. Any questions should be directed to policy@rsc.org

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