UK Research and Innovation

TRDF: Transformative Research Technologies

Opportunity status:	Closed
Funders:	**Biotechnology and Biological Sciences Research Council (BBSRC)**, **Engineering and Physical Sciences Research Council (EPSRC)**
Funding type:	Grant
Publication date:	22 June 2020
Opening date:	22 June 2020
Closing date:	8 October 2020 16:00 UK time

Last updated: 3 November 2020

2020 Highlight: Transformative Research Technologies for the Detection and Diagnosis of Plant and Animal Diseases

Novel technologies continue to revolutionise life sciences research. The 2020 TRDF call aims to pump prime **the next generation of cutting-edge enabling research technologies** with the potential for **transformative impact in biosciences research**. It will support applications for early stage technology development and research into the development of novel techniques and technologies that have the potential to enable transformative step changes in research capability.

The 2020 TRDF call has a **strategic highlight on transformative research technologies for the detection and diagnosis of plant and animal diseases, and in particular infectious agents with zoonotic potential.** It is expected that these technologies will lead to a step change in the ability of researchers to investigate UK plant and animal health problems caused by endemic or emerging pathogens or pests. Applications not related to the detection and diagnosis of plant and animal diseases will be considered out of the scope of the 2020 TRDF call.

The call has an indicative **total budget of up to £2.75 million**, subject to the quality of the applications received. The budget includes significant co-funding from UKRI-EPSRC. Applications must be between **6 and 18 months** duration and are not expected to exceed **£150,000 (£187,000 100% full economic costing).**

We are committed to improving the way we support the very best people, ideas and projects through strengthening best practice, identifying innovative approaches and being responsive to new opportunities and changes in the landscape. We want to ensure UKRI makes the best possible investment decisions and free-up those we invest in to focus on their work of creating new knowledge and delivering social, cultural, and economic benefits.

Therefore, this call will be funded by a streamlined application process to focus on the transformative impact of the research technology. There are a reduced number of documents to prepare and a fast-track peer review process will operate to enable researchers to respond rapidly to emerging challenges and opportunities

Scope

We are partnering with UKRI-EPSRC for the 2020 call; collectively we aim to encourage transformative technology development across a broad range of disciplines and to enable interdisciplinary collaborative working.

The aim of the call is to support the early-stage development of cutting edge, high-impact **transformative research technologies**, which are essential to sustaining the vibrancy of biosciences discovery research in the UK. These technology developments should offer the potential of a step-change in the state-of-the-art for the given field.

This call intends to support small and short **'high risk/high reward' pilot studies** directed towards development of a new technology where little to no preliminary data exists. The outcome of the application does not necessarily need to be a fully-fledged tool but could be demonstration of proof-of-concept, or production of a prototype for further development.

2020 Strategic Highlight: Detection and Diagnosis of Plant and Animal Diseases

Pests and pathogens can have a major impact on the health of plants and the health and welfare of animals. The 2020 TRDF call has an exclusive focus on proposals which develop innovative detection and diagnostic technologies that support research to understand and help combat plant and animal diseases, in particular those with zoonotic potential. It is expected that these technologies will lead to a step change in the ability of researchers to investigate UK plant and animal health problems caused by endemic or emerging pathogens or pests. This highlight falls within strategic priorities relating to the development of novel strategies to predict, detect and manage disease threats to plant and animal health and the one health agenda. More details on our strategic areas can be found in our **Forward Look for UK Bioscience**.

Requirements

Applications are expected to focus on one or more of the following:

- **Transformative technology development** that has the potential to result in innovative and potentially disruptive new technological capabilities applicable to

the biosciences.

- Radical innovation that has the potential **to deliver a step change in current technological capabilities** in aspects such as accuracy, precision, resolution, throughput, and breadth of application to facilitate new research discoveries.
- **New software tools and algorithms** to address key data analysis challenges in biosciences research. These must demonstrate genuine innovation and originality.

Examples of technological challenges under this theme include but are not limited to:

- Novel technology platforms for **rapid, sensitive and efficient detection and diagnosis** of pests and pathogens.
- Miniaturisation, innovative adaptation or integration of instrumentation to detect and identify pests and pathogens (**portable solutions** for use in field, farm, and veterinary environments).
- **Non-invasive tools** that can survey animals or plants to detect pests, pathogens or disease, employing approaches such as detection of volatiles, acoustics or biophotonics/imaging etc.
- **Software and algorithms** for the rapid analysis of field data related to animal and plant disease.

All applications are expected to outline how the research might deliver a substantial improvement versus the current state-of-the-art applicable to the relevant field(s) of research and how the project could broadly enable new avenues of biosciences discovery research. Applicants must also outline the extent of the potential impact **outside of their own specific research programme.**

Exclusions

Proposals in the following areas will not be accepted:

- Applications unrelated to the detection and diagnosis of plant and animal diseases. Applications focussing on disease processes, developmental research, and eventual treatment pathways are beyond the scope of this call.
- Applications focussing on the detection and diagnosis of diseases which only affect humans. Whilst we welcome applications relating to the detection and diagnosis of zoonotic diseases which can also affect humans, diseases which exclusively affect humans are beyond the scope of this call.
- Applications focussing solely on animal welfare rather than the impacts of disease on animal welfare.
- Applications focussing on technologies to develop plants and animals that are resistant to pests and pathogens.
- Platform technologies that are generically applicable to multiple research domains, rather than biosciences research.
- Applications with a focus on answering a research question instead of developing cutting-edge technology to do so. These applications could be better suited to **Responsive Mode**.
- Incremental adaptations/improvements of technologies where previous proof-of-concept has already been demonstrated, including applications with existing technologies already in use for comparable areas of life sciences.

- Large scale infrastructure, or direct application of off-the-shelf technology to research.
- Community databases and data infrastructures. These applications could be better suited to the **Bioinformatics and Biological Resources (BBR) Fund**.
- Technologies for translational applications. The focus for this call is on technologies for the discovery research community.
- Applications that exceed the cost and/or duration limits described for this call (see below).

Applicants are advised to contact us if they are unsure whether their application would fit the scope of the call.

UKRI-BBSRC reserves the right to reject applications, without reference to peer review, which are deemed to fall outside the remit and scope (including the financial scope) of this call. If required, expert advice from at least two members of the panel will be sought regarding fit to scope, noting that this will not be an assessment of the quality of the proposal.

We encourage research organisations to consider the scope and eligibility of potential applications to the call, and prioritise appropriately, prior to submission. We do not seek to implement an institutional cap for proposals but will take such measures if required to moderate demand to a manageable level.

Resources

There will only be a single TRDF call in 2020. The call has an indicative total budget up to £2.75 million, subject to the quality of the applications received.

Applications must be between 6 and 18 months duration and are not expected to exceed £150,000 (£187,000 100% full economic costing).

Further information is available in the FAQs and the 'Call Guidance' document (see downloads). For any enquiries, please see below for contact details.

Please note: we anticipate that the 2020 TRDF call may receive a high level of interest. Prospective applicants are invited to consider carefully whether their application is within the remit and scope of the call and should clearly articulate how the proposed project addresses the scope of the call. If in doubt, applicants are advised to contact the office to discuss their proposed project.

Eligibility

Standard eligibility criteria, as set out in the **UKRI-BBSRC Grants Guide (PDF, 374KB)** Section 3, apply. Applications from organisations and/or individuals that are not eligible will be rejected without reference to peer review.

Further information is available in the **UKRI eligibility guidance**.

For queries about eligibility, please contact us before submitting your application: **eligibility@bbsrc.ukri.org**

Research technical professionals

UKRI-BBSRC recognises the value of technical expertise to the UK research workforce. The potential for staff development and training (including post-docs, technical and support staff) will be assessed by the panel. UKRI-BBSRC particularly supports recognition of the contributions of research technicians and technology and skills specialists, and encourages applicants to cost them appropriately on applications. In addition, UK Research and Innovation is a signatory of the **technicians commitment** and for further information please see our page: **Research technicians and technology and skills specialists**.

How to apply

BBSRC is piloting a different approach to proposals for this call. Please consult the detailed guidance on how to apply for full details of the attachments required:

We are asking applicants to **only** submit:

- Case for Support – Up to 8 pages including workplan
- Justification of Resources – Up to 2 pages
- Capability to Deliver – Up to 2 pages

Applications should be submitted through the **Joint Electronic Submission system (Je-S)** by **16:00** on **8 October 2020** and it will not be possible to submit to the call after this time.

Applicants should select the following from the Je-S menus:

- Select New Document
- Select Council: UKRI-BBSRC
- Select Document Type: Standard Proposal
- Select Scheme: Standard
- Select Call/Type/Mode: 2020 Tools and Resources Development Fund
- Select 'Create Document'

Applications involving two or more Research Organisations should be **submitted via a single Je-S form.**

We advise applicants to read our **Grants Guide** before completing their application and to consult the 'Call Guidance', 'FAQ' and 'Capability to Deliver' downloads for further detailed guidance specific for this call.

Supporting documents

- **TRDF: Transformative Research Technologies – Frequently asked questions (PDF, 151KB)**
- **TRDF: Transformative Research Technologies – Guidance notes (PDF, 107KB)**
- **TRDF: Transformative Research Technologies – Capability to deliver guidelines (PDF, 78KB)**

Assessment Process

Fast-Track Assessment

Applications that fit the remit of the call will be assessed through a single stage, fast-track panel assessment process, so that the high-risk exploratory ideas and novel technologies can be rapidly tested and/or challenged. The streamlined nature of the assessment will use a multi-disciplinary panel with appropriate expertise.

Please note:

- Applications will be fully assessed by the expert panel. Applications will not be sent to reviewers and therefore applicants will not receive reviewer comments; there will be no PI rebuttal stage.
- The panel will assess the applications against the criteria for assessment (see below) and provide the funders with a recommended rank-ordered list of applications.
- Applicants should ensure that sufficient details of their proposed project, approaches and methods are provided within the case for support to enable the application to be assessed by scientists with relevant, but not necessarily specialist, expertise.
- Feedback will be provided to all applicants within three months of being notified of the panel's decision.

Assessment Criteria

The assessment of applications will reflect the scope of the fund and applications will be assessed against the following criteria:

- Scientific excellence, which includes
  - Broader novelty, innovation and potential utility of the proposed research technology
  - Significant potential for broader impact on the life science community

- Fit to the scope of the call
- Economic and social impact
- Timeliness and promise
- Novelty of the research
- Industrial and stakeholder relevance
- Value for money
- Potential for staff development and training, including post-docs and RTPs

Timeline

Call opens	22 June 2020
Call closes	8 October 2020
Panel meeting	8 December 2020

Contact

Tools and resources development fund email:
development.fund@bbsrc.ukri.org.

Please contact us for enquiries relating to the call, as well as for enquiries relating to alternative funding routes for technology development projects that do not fit within the parameters of this call.

Related content

Data driven biology

Technology development for the biosciences

Technology Touching Life Networks

Bioinformatics and Biological Resources Fund

Gateway to Research portal

researchfish