

Innovate UK

Technology Strategy Board

Competition for funding

**Developing non-animal
technologies**

DEADLINE
29 April
2015

Collaborative R&D



We are to invest up to £6m in collaborative R&D projects that support the development and application of non-animal technologies in the UK.

Innovate UK, the National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs), the Biotechnology and Biological Sciences Research Council (BBSRC), the Engineering and Physical Sciences Research Council (EPSRC), and the Medical Research Council (MRC) aim to support projects that will improve the discovery (early stages when active substances and their potential uses are identified) of new human and veterinary medicines, agrochemicals and chemicals and their assurance for effectiveness and safety as they are developed.

Proposals must be collaborative and led by a business. We expect to fund mainly industrial research projects in which a large business partner can claim up to 50% public funding for their project costs (60% for SMEs).

We expect projects to range in size from total costs of £500,000 to £1 million although we may consider projects outside this range.

This is a two-stage competition that opens for applicants on 23 March 2015. The deadline for registration is noon on 29 April 2015 and the deadline for expressions of interest is noon on 6 May 2015.

There will be a briefing event and webinar for potential applicants in London on 26 March 2015.

Background

The development and launch of new products in areas such as human and veterinary medicine, agrochemicals, personal care products, and food additives require evaluation of the safety and efficacy of the substances used in them. With the exception of personal care products, this is mostly determined by testing in animals before potential use in humans. Studies in animals are used, for example, to determine whether a new pesticide will have an adverse impact on the environment, and to select new candidate drugs for clinical trials. In the UK alone, there were a total of 4 million scientific procedures involving animals in 2013.

Funding partners



Animal models are not always accurate predictors of the effects of a new substance on humans, animals and the environment. For example, a high percentage of drug candidates are removed from development when tested in humans because of a lack of efficacy or safety that was not predicted in non-clinical animal testing. Attrition, the failure of drug candidates or new chemicals to progress through to market, is a major financial burden for industry. Reducing attrition by even a small amount can lead to huge financial savings and increased business growth.

The use of non-animal technologies in a limited number of areas has already significantly reduced attrition and improved human safety (for instance, helping to predict cardiovascular adverse events or skin sensitisation). Recent advances in relevant fields in the biosciences offer many more opportunities for these systems to transform drug and chemical development. We aim to help business to harness advanced technologies emerging from the research base and assess their potential to better predict the impact on

humans and the environment of new molecular and chemical entities. The UK leads the science in these technologies, and this competition will build upon these strengths to further their commercial potential.

This competition builds on last year's 'Advancing the development and application of non-animal technologies' competition for studies into the commercial feasibility of developing new non-animal technologies and testing systems. It will support larger projects that are closer to commercialisation.

Scope

This competition seeks to advance the rate of development and commercialisation of non-animal technologies and testing systems that better predict human and animal responses to, and the environmental effects of, chemicals and new molecular entities. It covers technologies that could be used in early drug, veterinary medicine, chemical and consumer product development, and suites of technologies intended to replace regulatory toxicology studies.

Our aim is not purely to replace animal models with equivalent *in vitro* or *in silico* models; it is to produce better tests and systems that more accurately predict efficacy, safety and environmental effects. The range of technologies that might need to be developed or integrated to meet this challenge could include, but is not limited to, the areas below.

Biological, tissue engineering and imaging-related

- stem cell technologies/tissue engineering
- cell-line technologies
- cell culture – single-cell-type/3D/mixed-cell type/dynamic (human or animal)
- organ-on-a-chip/whole-organ models/linked multi-organ systems
- next-generation sequencing and 'omics' – genomics, epigenomics, proteomics
- technologies for identifying and measuring *in vitro* biomarkers
- cell/molecule-level imaging and sensing – positron emission tomography, magnetic resonance imaging, optical, *in vitro/ex vivo*, high-contrast

- stratified (personalised) medicine approaches
- use of non-mammalian organisms or plants

Manufacturing-related

- high-throughput technologies/combinatorial chemistry
- micro-structured surfaces and micro-fluidics
- automation and control

Computational and mathematical methods

- mathematical modelling
- computer simulation and *in silico* modelling
- structure-activity relationships and computational chemistry
- data-mining and analysis of large complex (including historical) data sets

Applicants are expected to demonstrate a clear commercial application of the technology, and a credible plan to develop it and put it to use.

Projects covering extensive regulatory validation studies for acceptance by licensed regulatory bodies and projects seeking to develop novel or improved animal models are out of scope.

Funding allocation and project details

We have allocated up to £6 million to fund collaborative R&D projects that address the technical challenges outlined in the scope.

Successful applicants can attract grant funding towards their eligible project costs. The percentage of costs that we pay varies, depending on the type of research being carried out and the type of organisation involved.

For this competition projects must be business-led and collaborative. They should last 2 to 3 years. We are primarily seeking to fund industrial research with large business partners claiming up to 50% public funding for their project costs (60% for SMEs).

We expect projects to range in size from £500,000 to £1 million. We may consider larger projects but applicants should contact us directly before making their application to discuss further.

The UK's research base has considerable expertise in areas such as regenerative medicine, induced pluripotent stem cells, cell damage mechanisms, toxicology, computational and mathematical methods and we encourage businesses to collaborate with academic and research organisations. In addition, the potential research councils support is being offered for academic partners.

To find out if your business fits the EU definition of an SME, see: http://ec.europa.eu/enterprise/policies/sme/index_en.htm

Looking for partners to work on your project? Go to connect.innovateuk.org

Each partner in a project can receive funding towards their project costs – the funding is a percentage of the total eligible project costs and varies, depending on the size and type of organisation and the type of research.

For general guidance see: interact.innovateuk.org/funding-rules

Application process

This is a 2-stage competition that opens for applicants on **23 March 2015**.

Stage 1 – each applicant submits an expression of interest which is assessed.

Stage 2 – we invite selected applicants to submit an application.

The deadline for registration is noon **29 April 2015** and the deadline for expressions of interest is noon **6 May 2015**. The second stage deadline for invited applications is at noon **15 July 2015**.

Applications are assessed on individual merit by an independent panel of experts. We may apply a portfolio approach across the themes/areas, subject to applications meeting the required quality threshold.

There will be a briefing for potential applicants in London on **26 March 2015** to highlight the main features of the competition and to explain the application process. **Applicants are strongly recommended to attend this event.**

Workshops to highlight the main features of the competition and to facilitate consortia-building will be held on 13 (London), 16 (Manchester) and 19 (Edinburgh) February 2015.

Key dates

Competition opens	23 March 2015
Competition briefing	26 March 2015
Registration deadline	noon 29 April 2015
Expressions of interest (EOI) deadline	noon 6 May 2015
Stage 2 opens for invited applicants	1 June 2015
Deadline for invited applications	noon 15 July 2015

Applicants are strongly recommended to attend at least one of these workshops.

To register for the consortium building workshops, visit www.nc3rs.org.uk/events/

Note: All deadlines are at noon.

More information

For more information and all the documents you need to read before you apply, including the *Guidance for Applicants*, go to the web page for this competition at interact.innovateuk.org/

To apply you must first register with us through the competition page on the website. Registration opens when the competition opens and closes a week before the deadline for expressions of interest.

Competition helpline: 0300 321 4357

Email: support@innovateuk.gov.uk

Help for SMEs to grow faster

Small businesses that combine the funding they receive from us with additional business support are more likely to grow faster. If you are an SME and receive funding through this competition, you will automatically gain access to a growth workshop, an online diagnostic and a growth expert to help you develop a growth plan. This may include coaching, mentoring and entrepreneurial skills training.

Publicity

As part of the application process all applicants are asked to submit a public description of the project. This should adequately describe the project but not disclose any information that may impact on intellectual property, is confidential or commercially sensitive. The titles of successful projects, names of organisations, amounts awarded and the public description will be published once the decision to offer an award has been communicated to applicants by email. Information about unsuccessful project applications will remain confidential and will not be made public. E-mail pressoffice@innovateuk.gov.uk with any queries.



Innovate UK is the new name for the Technology Strategy Board – the UK's innovation agency. We know that taking a new idea to market is a challenge. We fund, support and connect innovative businesses through a unique mix of people and programmes to accelerate sustainable economic growth.

The Technology Strategy Board is an executive non-departmental public body sponsored by the Department for Business, Innovation and Skills, and is incorporated by Royal Charter in England and Wales with company number RC000818. Registered office: North Star House, North Star Avenue, Swindon SN2 1UE.

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