

Technology Strategy Board

Driving Innovation



Regenerative Medicine Programme: Tools and Technologies Feasibility Studies

MARCH 2010 COMPETITION FOR FUNDING

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Summary

As part of a £21.5m programme in Regenerative Medicine, the Technology Strategy Board is to invest up to £2m in collaborative research and development feasibility projects in the area of regenerative medicine tools and technologies.

Our aim is to help establish projects and future collaborations that will participate in larger initiatives in regenerative medicine to be run jointly in 2011 by the Technology Strategy Board, the Medical Research Council (MRC), the Biotechnology and Biological Sciences Research Council (BBSRC), and the Engineering and Physical Sciences Research Council (EPSRC).

Projects must be collaborative and led by a business, and proposals must clearly state the benefits to business. Project outputs must be either a technology or an application demonstrator, to be presented in a report and a formal presentation.

Total project costs must not exceed £200k, with feasibility studies being funded up to 75% of project costs. The competition opens on **8 March 2010**. Successful projects are expected to start in **July 2010** and must be completed by **31 March 2011**.

Challenge

To explore the feasibility of developing platform tools and technologies to overcome key development challenges in safety and efficacy testing, and the manufacturing of regenerative medicine therapeutics.

Background

Regenerative medicine is a multidisciplinary approach that spans tissue engineering, developmental and stem cell biology, gene therapy, cellular therapeutics, biomaterials (scaffolds and matrices), nanoscience, bioengineering and chemical biology. It may involve:

- transplanting stem cells, progenitors or tissue
- stimulating dormant repair processes
- cells as delivery vehicles: genes, cytokines, small molecules
- engineered cells (synthetic biology).

Regenerative medicine has already provided significant medical advances in areas such as skin regeneration for burns patients, and has the potential to offer cures or treatments with long-term benefits.

The number of UK companies working in regenerative medicine has been growing since 2003, and the UK is a world leader in this area, with a strong academic science base and a supportive clinical and regulatory environment. If the UK is to fulfil its potential in this field, a number of

development challenges need to be overcome so that businesses can successfully exploit promising discoveries.

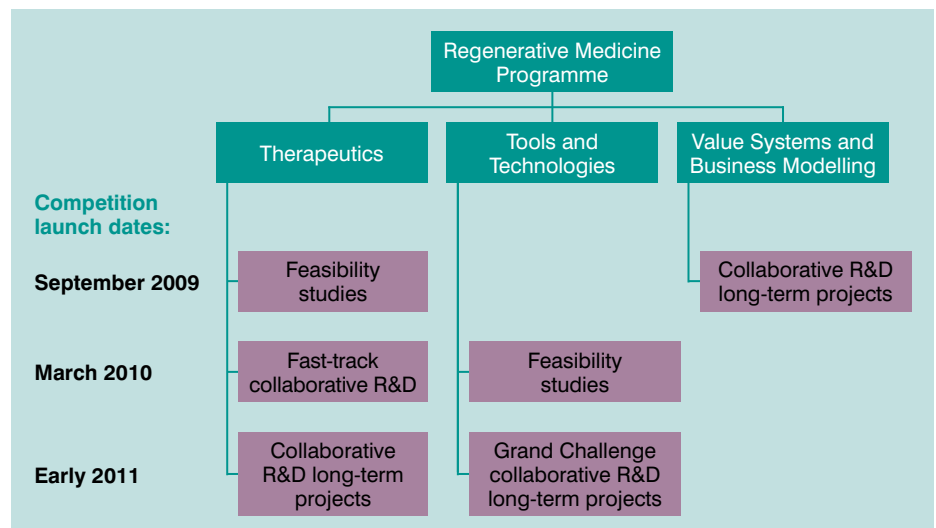
It is within this context that we launched the Regenerative Medicine Programme. To ensure that UK businesses can achieve a commercially competitive edge with global impact, we aim to:

- underpin the best regenerative medicine businesses in the UK, and
- build a connected regenerative medicine community by forming well-linked programmes of work and activities to develop medicines and technology platforms.

We launched this programme of competitions in September 2009 and are investing up to £18m to support priority areas of collaborative R&D activity and the development of partnerships (see figure).

We are developing the programme in partnership with the MRC, the EPSRC and the BBSRC, which are providing additional funding of approximately £3.5m. A high-level industrially-focused group comprising industry and academic experts is guiding the development of the programme.

Figure 1: Through the Regenerative Medicine Programme we are launching competitions in three priority areas





Tools and technologies feasibility studies

The aim of this competition is to enable UK businesses to address specific challenges being faced by developers of regenerative medicine therapeutics. These challenges are the ability to assess the safety and/or efficacy of therapeutic products, and to develop manufacturing technologies and processes that are robust and reproducible. The feasibility studies should therefore focus on key platform technologies to:

- demonstrate product safety and/or efficacy for regenerative medicine therapeutics (eg through the use of animal models and models in vitro, imaging technologies, biomarker analysis or monitoring), or
- address challenges in manufacturing (eg bioprocessing, control of cell stability and differentiation, cell sorting, formulation and delivery, transportation, quality control and metrology).

The feasibility study approach will enable projects to develop links and will better enable them to secure further development investment, particularly where the participants need to access resources or skills outside their organisation to take the idea forward.

The focus will be on building successful collaborations that can consider exploiting further market opportunities and could significantly strengthen their position to enter a future regenerative medicine 'Tools and Technologies Challenge' competition planned for 2011. The aim of the Tools and Technologies Challenge competition is to support significant collaborations between industry and academia that can provide international leadership for the UK in the field of regenerative medicine.

Outputs from the feasibility studies must take the form of a technology or application demonstrator, which will be presented in a report and a formal presentation.

- **Technology demonstrator:** a prototype that shows that the technology is robust enough to be integrated into a functional system. Developing a technology demonstrator involves developing a piece of technology and integrating it with other technologies to produce an early demonstrator that can be shown in the field or to potential customers.
- **Application demonstrator:** this demonstrates the potential functional benefits of a system under non-laboratory conditions to internal and/or external investors. During the development of an application demonstrator, the technology is nurtured and extended in the context of the potential applications. The work involves improving the functionality, performance and price of potential products, processes or services in line with early customer needs.

Scope for applications

All applications must address the overall challenge defined in this competition. The project must address critical technological issues that will enable the development of a platform tool or technology to support the development of regenerative medicine therapeutics. Discovering new regenerative medicine therapeutics is not within the scope of this competition. Applications must explain why the technological issue(s) are critical, and exactly what impact the successful completion of the project will have.

Applications must include background information on the technology being developed. They must also outline plans for progressing the demonstrator towards application of commercialisation, with particular reference to technical development challenges, interactions with end users, timeframes and potential partners.

Investment allocation and project details

We have allocated up to £2m to fund commercial collaborative R&D feasibility projects that address the technical challenge and align with the scope.

Projects can involve science-to-business or business-to-business interactions. Projects must be industrially led, therefore academics can apply only as a collaboration partner in a collaborative application.

The total project costs must be no greater than £200k, with feasibility studies being funded up to 75% of project costs. Projects are expected to begin in **July 2010** and must be completed by **31 March 2011**. No grant payments will be made for work carried out after that date.

A definition of the above category of research can be found in the Guidance for Applicants, which will be available when the competition opens on **8 March 2010** (see the Competitions section of our website at www.innovateuk.org).

The output of each project will be a report and a formal presentation. The report will detail the technical findings (for example, experimental results, technology definition, roadmaps and future studies) and the route to exploitation. The presentation will be a 10-15 minute presentation to a nominated group of representatives for the Technology Strategy Board, MRC, BBSRC and EPSRC; further details will be given in the offer letter for successful applicants.

Application process

This is a single-stage competition for feasibility studies that will open on **8 March 2010** and close on **29 April 2010**. The Guidance for Applicants explains in detail how to register and apply (see the Competitions section of our website at www.innovateuk.org).



Key dates

Competition opens	8 March 2010
Applicants briefing (optional)	17 March 2010
Registration of intent to submit (compulsory)	22 April 2010 (noon)
Deadline for receipt of full applications	29 April 2010 (noon)
Decision to applicants	11 June 2010
Feedback to applicants	12 July 2010

Further information

For more information about this and other competitions, and details of how to register and apply, please see www.innovateuk.org under Competitions.

Competition helpline:
0300 321 4357

Email:
competitions@tsb.gov.uk

Publicity

The Technology Strategy Board frequently publicises the results of competitions and this includes engagement with the media. All applicants will be given a chance during the competition process to opt out of any publicity. Willing applicants will be asked to provide an agreed form of words for use in publicity material. E-mail pressoffice@tsb.gov.uk with any queries.

The Technology Strategy Board is a business-led executive non-departmental public body, established by the Government. Its role is to promote and support research into, and development and exploitation of, technology and innovation for the benefit of UK business, in order to increase economic growth and improve quality of life.

Collaborative research and development is part of the Government's Solutions for Business portfolio.

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