MRC Confidence in Concept – University of Manchester Allocation 2020

The University of Manchester has been successful in securing funding from the eighth round of the MRC Confidence in Concept (CiC) scheme.

The funds are intended to accelerate the transition from discovery research to translational development by supporting preliminary work or feasibility studies to establish the viability of an approach, i.e. to provide confidence in the underlying concept – before seeking more substantive funding (e.g. from MRC DPFS which aims to fund the pre-clinical development and early clinical testing of novel therapeutics, devices and diagnostics, including "repurposing" of existing therapies). **The scheme is not intended to fund an entire project but to support studies that would overcome a particular hurdle that needs to be addressed (and generate sufficient data to provide 'confidence in your concept') before a proposal for further funding could be submitted.**

We anticipate award duration being typically ~ 6-9 months but will consider up to maximum 12 months. Funding will be provided for 100% of Directly Incurred costs only, and the awards are typically in the region of £50K - £75K. Upon invitation, the Principal Investigator (PI) may be allowed to apply for a larger study budget if this will significantly enhance the likelihood of successful translation and follow-on funding applications.

The Confidence in Concept scheme is not limited to the development of new chemical entities; all modalities of therapy and diagnostic are welcomed, including engineering/medical technology and devices, utilisation of digital healthcare technologies, and bioinformatics approaches. The MRC and UoM wish to promote academic-industry interactions (including SMEs) through the Confidence in Concept scheme; applicants are therefore strongly encouraged to explore how awards could be used to develop these interactions. We also encourage interdisciplinary proposals including cross-faculty collaborations.

Please note that the proposals must demonstrate a significant unmet clinical need and a clear 'line-of-sight' to patients. Completion of an outline Target Product Profile (TPP) form is not required at EoI stage, but may help applicants to clarify the translational pathway for their projects and the gaps that need to be addressed at this stage. A brief TPP form will be mandatory in the FULL APPLICATION stage and further information will be provided at the CiC launch and workshops in Spring 2020 (further details to be circulated via email and announcements).

All disease areas (including those relevant to global health) and modalities of intervention are eligible for support from the scheme. The applicants are strongly advised to include a clinical PI or Co-I with first-hand experience of managing patients with the targeted condition(s), or at least consult with a clinician on the medical aspects (e.g. unmet medical need) of these translational projects.

CiC8 strategic priority areas – please see Appendix 1 for full details

All proposals must meet the following criteria:

- **Project should be early stage translational research to generate pilot data that, if positive, would support submission of a proposal for external funding to a translational research scheme (e.g. MRC DPFS)**
- **Demonstrate a clear unmet medical need in a defined patient population**
- **Outline the developmental pathway from the proposed CiC funded proof-of-concept/feasibility study to the next stages including getting the proposed innovation (i.e. the 'end product') to the clinic or other end user environment.**

While the competition is open to all areas of translational research, we specifically encourage proposals in the following areas (**all of which can encompass device-based projects**):

1. **Development of diagnostics through biomarker development and validation in any particular disease with an unmet need.**
2. **Identification and validation of new therapeutic approaches for disease-relevant pathways in preclinical models and early phase clinical studies; therapeutics are not limited to chemical entities and can include other approaches such as cell therapy, gene therapy and novel biological agents.**
3. **Utilisation of digital healthcare technologies.**
4. **Advanced materials and biomaterials in medicine.**

We encourage interdisciplinary research proposals that align with the grand challenges identified in the Faculty of Biology, Medicine and Health Research and Innovation Strategy 2017-2022 (updated 2020).

CiC8 strategic priority areas – please see APPENDIX 1 for full details.

Previously funded projects – please see APPENDIX 2 for CiC7 (2019) funded studies.

The funding will not support:

- The proposals that fail to demonstrate a significant unmet clinical need and a clear 'line-of-sight' to patients
- Research that is at too early a stage to enter the translational pipeline
- Entire translational projects; applicants seeking funding for entire projects are directed to the MRC's DPFS.
- Administration costs
- Conference travel
- Industrial partner costs
- Staff between posts/funding (i.e. as "bridging" funds), or PhD studentships
- Continuation of normal research grants

- Previous CiC funded research
- Costs relating to protection of Intellectual Property

The inclusion of individual items of equipment over £10K (incl. VAT) must be discussed, prior to submission of the Expression of Interest, with UoM/CiC Programme Manager Dr Anu Suokas at anu.suokas@manchester.ac.uk .

Applicant eligibility

The lead applicant must have a contract of employment with the University of Manchester. Those who do not fulfil the eligibility criteria must have a Co-PI who meets the eligibility criteria. The PI's contract of employment should exceed the duration of the proposed CiC project, and a potential follow on project, prior to application to the CiC scheme. The CiC Scheme is part of the MRC's translational research strategy, and the expectation is that CiC funded projects provide sufficient preliminary data to establish the viability of an approach before seeking more substantive funding from schemes such as the DPFS. **Therefore we expect the lead applicant to fulfil the eligibility criteria for a follow on MRC (or other research council) grant application towards the end of their CiC project.** Please contact us if you need clarification on eligibility.

The application is a two stage process.

Stage 1: Expression of Interest (EoI)

Two-page (max), in Verdana point 10 and 1.5cm margins, to include ALL of the following information, as numbered and under clear headings:

1. Title of proposal.
2. Name of PI and Co-Investigators, Division, Faculty, Organisation.
3. Project duration, proposed start date and overall cost (at 100% of the directly incurred costs). NB. All projects must start by 4th Jan 2021 at the very latest.
4. What is the unmet health, clinical or product development need you are seeking to address? Please include a description and size of the target patient population. (Max 100 words)
5. What is your proposed solution to meeting this need? (Max 100 words)
6. What are the competing solutions (direct or indirect) and their developmental status, and what is the competitive advantage of your proposed solution? (Max 100 words)
7. What is the rationale and supporting evidence for why your proposed solution will meet the targeted need? (Max 100 words)
8. If successful, how soon would the proposed innovation reach a) patient care or other clinical setting and b) commercial market or other means of distribution? Please explain what additional studies or development work will be required to achieve these endpoints? (Max 100 words)
9. Explain what the specific hurdle/ bottleneck is that you need to overcome by carrying out the proposed CiC study, before a proposal for follow-on funding could be submitted. (Max 100 words).
10. How will the project achieve its objectives? Summarise the project workplan including key progression milestones and the timeline (one being the project end). For each milestone, please set out the success criteria that will be used to ascertain whether the milestone has been met. (Max 100 words)
11. If access to data, tissue, software etc. is required, has access been agreed? If not, how and when will these be obtained?

12. Does you study require NHS ethics & governance approvals? If yes, when will these be obtained?
13. Will the project generate intellectual property (IP) that will be shared with or owned by an external party (e.g. external project partner)? YES/NO: If yes, briefly describe the steps to be taken to manage this IP.
14. Brief plan for follow on studies, potential industry collaboration and further funding, including targeted funding schemes and deadlines.
15. Describe how your study will contribute to one or more of the four CiC8 strategic priority areas (please see Appendix 1).
16. Explain how you obtained clinician input on the medical aspects (e.g. unmet medical need) of your CiC proposal.

EoIs that do not conform to the above guidance will be rejected.

EoI deadline: 10am on Friday 1st May 2020
Proposals should be submitted to SFT@manchester.ac.uk

Notification of EoI outcome: Friday 22nd May 2020 via email to the PI.

Stage 2: Full application

By invitation only, following review of Expressions of Interest, on the application form supplied by the Strategic Funding Team.

Deadline: 10am on Friday 3rd July 2020
Proposals should be submitted to SFT@manchester.ac.uk

Notification of outcome: By Friday 31st July 2020 via email to the PI.

NB. We expect all projects to start by 4th Jan 2021. Due to the short nature of the grants, no-cost extensions will not be supported. Timelines may be adjusted to accommodate any further Covid-19 measures.

For further information contact UoM/CiC Programme Manager Dr Anu Suokas in the Strategic Funding Team anu.suokas@manchester.ac.uk

APPENDIX 1 – CIC8 PRIORITY AREAS

All proposals must meet the following criteria:

- **Project should be early stage translational research to generate pilot data that, if positive, would support submission of a proposal for external funding to a translational research scheme (e.g. MRC DPFS)**
- **Demonstrate a clear unmet medical need in a defined patient population**
- **Outline the developmental pathway from the proposed CiC funded proof-of-concept/feasibility study to the next stages including getting the proposed innovation (i.e. the 'end product') to the clinic or other end user environment.**

We encourage interdisciplinary research proposals that align with the grand challenges identified in the Faculty of Biology, Medicine and Health Research and Innovation Strategy 2017-2022 (updated 2020).

Whilst the competition is open to all areas of translational research including therapeutics, diagnostics, devices and informatics, particularly, we would wish to encourage (but not limit to) proposals from the following priority areas.

1. DIAGNOSTICS

The aim of this priority is to encourage the development of diagnostics through biomarker development and validation in any particular disease with an unmet need.

Proposals for CiC funding for diagnostics should meet the following criteria:

- Clear rationale how diagnostic could improve healthcare e.g.
  - Improved outcomes through earlier diagnosis
  - Better patient stratification to inform treatment selection
  - Improved outcomes through better monitoring
  - Improved outcomes through avoidance of adverse events
- Studies may incorporate one or more existing diagnostic technologies or development of new technologies
- Studies may focus on single biomarkers or development of multi-parameter biomarker signatures
- Proposals that incorporate new methods of data analysis and/or computational modelling to identify signatures of different disease strata are encouraged
- Proposals should discuss the repeatability, reproducibility and robustness of the biomarker(s) from a relevant patient population both in the research setting and in the real-world setting, and where practical these should be investigated within the project
- Describe a brief plan for how the findings could be progressed into clinical practice and over what timescale

The funding will not support:

- Investigative studies of biomarkers without clear path to patient stratification and improvement of treatment paradigms (i.e. "fishing exercises")

- Biomarkers which are unlikely to be robust and cost-effective in real-world healthcare (e.g. methodology not appropriate for severity of disease, timecourse of disease or healthcare setting).

2. THERAPEUTICS

The aim of this priority is to encourage the identification and validation of new therapeutic approaches for disease-relevant pathways in preclinical models and early phase clinical studies; therapeutics are not limited to chemical entities and can include other approaches such as cell therapy, gene therapy and novel biological agents.

Proposals for CiC funding for therapeutics should meet the following criteria:

- Describe a clear hypothesis for how targeting the mechanism of interest with the therapeutic would be efficacious and improve patient treatment
- Projects can investigate 'druggability' of mechanisms/ target/ molecules
- Repositioning of compounds for new disease indications would be within scope of the call
- Proposals should consider whether the therapeutic approach is appropriate for the disease e.g. cost, route of administration, likely exposure to target tissue
- Describe a brief plan for how the studies could be progressed into clinical practice, including consideration of how potential target-related or therapy-related safety issues could be addressed

The funding will not support studies on:

- Investigative studies on disease mechanisms without a clear therapeutic approach
- Targets that have been tried and tested before (serial failures)
- Therapeutic approaches that are not significantly differentiated from approaches currently in development

3. UTILISATION OF DIGITAL HEALTHCARE TECHNOLOGIES

The aim of this priority is to speed up the development of new digital solutions to healthcare challenges.

Digital health is evolving at a rapid pace and this is having a profound impact on healthcare delivery. Digital health uses data and technology to:

- improve patient outcomes
- improve access to healthcare
- make more targeted and personalised health interventions
- deliver new treatments and translational medicine

The types of digital health projects we will fund include (but are not limited to):

- informatics
- data analytics and advanced visualisation
- clinical decision-making support
- technologies that, for example, improve access to healthcare or help treatment compliance

- emerging digital health technologies with a demonstrated healthcare benefit, such as artificial intelligence, machine learning and the Internet of Things
- digitally-enabled health technologies including device wearables and standalone software and applications
- bioelectronics- the use of sensors and electronic stimulation to assist with drug delivery and performance

Projects should focus on the feasibility or development of digital health or digitally-enabled medical technologies. They must improve patient outcomes and demonstrate the potential to enable more efficient delivery of healthcare. You may design these technologies for use in either clinical or non-clinical everyday settings.

4. ADVANCED MATERIALS AND BIOMATERIALS IN MEDICINE

There is a unique opportunity to capitalise on UoM research excellence in the area of Advanced Materials and to further integrate this with other interdisciplinary UoM strengths in order to exploit it for biomedical science applications in the development of health innovations to address specific medical and health challenges by:

a) Leveraging the significant investment in graphene and 2D material technologies through NGI and GEIC to apply **emerging engineered nanomaterials and nanoscience to medicine and healthcare**:

- *Pre-clinical development of nanomedicine constructs* based on novel Engineered Nanomaterials (ENMs) of synthetic and biological nature for applications such as advanced delivery systems for radio- and chemo-therapeutic agents, and novel viral and non-viral gene therapy vectors;
- *Nanosafety and toxicity of new emerging nanomaterials*

b) Complementing the research activities undertaken in the Royce on

- *Biomaterials*: key components of implantable devices, such as orthopaedic implants (artificial hips, knee, shoulder, wrists, fracture fixation, and bone grafts), cardiovascular implants (heart valves, pacemakers, catheters, grafts, and stents), and dental implants (enamels, fillings, prosthetics, and orthodontics)
- *Medical devices* in particular in the emerging field of bioelectronics focusing on the electronic monitoring and control of biological systems, and the engineering of the bio-interface; crossing the boundary between "wet" biology and "dry" electronics to enable mass data collection (sensing) and in the longer term precise, closed loop, actuation/control of the biological agent
- *Additive manufacturing:* the ability to manufacture advanced materials (e.g. 3D printing with novel material and/or cells, lab on chip for new diagnostics, for a specific patient population or disease area).

APPENDIX 2

Projects funded in Round 7 of UoM Confidence in Concept program

Prof Perdita Barran, FSE

Smell-led volatile biomarker discovery from sebum and breath for tuberculosis diagnosis

Prof Brian Bigger, FBMH

Evaluation of genotoxicity & scale up transduction of HSC Gene Therapy for MPSII

Prof Giulio Cossu, FBMH

Immortal, universal donor cells for the ex vivo gene therapy of muscular dystrophy: development of a pre-clinical mouse model

Prof Tony Day, FBMH

Proof of concept for Link_TSG6 as a protein-based biologic for wet Age-Related Macular Degeneration (AMD)

Dr Mark Dunne, FBMH

Assay Detection for Focal Congenital Hyperinsulinism

Dr Katie Finegan, FBMH

Exploring the utility of targeting ERK5-signalling to treat idiopathic pulmonary fibrosis (IPF)

Prof Anthony Jones, FBMH

Neurofeedback platform for long-term use in patients with chronic arthritic pain

Prof Lydia Tabernero, FBMH

Development of anti-virulence agents for tuberculosis treatment

Prof Catharine West, FBMH

Translation of a hypoxia gene signature for use in bladder cancer onto a clinically applicable measurement platform