



**FAST Early Detection of Cancer:
A Call for Discipline-Bridging Initiator Project Proposals
(Call 6)**

April 2020

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Summary

Being able to detect and diagnose cancer earlier is important if we are to reduce cancer mortality rates and improve patient outcomes. Many cancers are most successfully treated when diagnosed earlier, leading to dramatic increases in five- and ten-year patient survival. However, the most recent data available from 2014 suggests that almost half of all cancers are diagnosed at a late stage in England and Northern Ireland. Early detection research seeks to enable the detection of consequential cancer, or pre-cancerous states, at the earliest possible time point at which an intervention might be made. Cancer Research UK (CRUK) have recently carried out a multi-sector stakeholder consultation on the key research interventions that are needed to make a step-change in early detection of cancer. In collaboration with CRUK, the EPSRC FAST Healthcare NetworksPlus organised workshop focussing on three areas of research that emerged from the CRUK consultation which are of particular relevance to engineering and physical sciences. A report on this Workshop may be downloaded from the Network's website ¹.

The aim of this Call is to build new research collaborations across disciplines and organisations which address the specific outcomes from this Workshop Report on Early Detection of Cancer research which the FAST NetworksPlus has produced. This should lead on to a more substantial research programme which enhances research in the UK that aligns with the EPSRC's Healthcare Technologies Theme ².

Awards are limited to a maximum of £56,000 (based on a funding rate of 80% of full economic cost) and should last no more than 6 months. The Management Committee expect to make up to two awards.

About the FAST Healthcare NetworksPlus

NHS England produced a publication in its 65th anniversary year (2013) entitled '*The NHS Belongs to the People: A Call to Action*'³. It articulates the aspiration to deliver the very highest standards of patient care against the reality at the time that the projected total cost of running NHS England will rise from £95 Bn in 2013 to £137 Bn in 2020, whilst the resource will only rise to £108 Bn in the same period. The recent COVID-19 pandemic will only have the effect of increasing the cost of delivering healthcare further. There is a number of factors that are leading to rising costs, and the Call to Action highlights poorly joined-up care between adult social care, community services and hospitals as one of these.

¹ <http://www.fast-healthcare.org.uk/early-cancer-detection/>

² <https://www.epsrc.ac.uk/research/ourportfolio/themes/healthcaretechnologies/strategy/>

³ <https://www.england.nhs.uk/wp-content/uploads/2013/07/nhs-belongs.pdf>

The *EPSRC Fast Assessment and Treatment in Healthcare (FAST Healthcare) NetworksPlus* is a response by the Engineering and Physical Sciences (EPS) community to this call. We are a network of academics with clinical, industrial and charity partners who are working to optimise treatment processes in public healthcare using an engineering methodology to develop practical solutions which can be realistically implemented. Our ability to achieve this is enabled by funding from the Engineering and Physical Sciences Research Council (EPSRC). This has allowed us to run a series of events to bring together key stakeholders in the provision of public healthcare with members of the academic EPS and clinical communities leading to small-scale collaborative projects to seed-fund transformative research.

What We Want to Fund

The purpose of the EPSRC's NetworksPlus within its Healthcare Technologies Theme is to kick-start new research collaborations which address the EPSRC's overarching strategy for funding research in this area. Specifically, the FAST Healthcare NetworksPlus seeks to establish new research communities around the 'Optimising Treatment' Grand Challenge. Part of this is to encourage early-career researchers to work in this area, both with each other and with more established academics. We also want to enable engineering and physical sciences researchers to work more closely with clinicians to tackle real (rather than perceived) clinical challenges, as well as business, patient groups and policy makers in this area.

For this Call, we are specifically looking for proposals which address the Roadmap for engineering and physical sciences research in the area of early detection of cancer that emerged from our most recent Workshop. A full copy of the Roadmap is available on the FAST Healthcare website for download ¹, and applicants should familiarise themselves with this. However, this is abstracted into Figures 4, 5 and 6 of the workshop report, whose structure is based upon the 'Three-Plane Diagram' developed by the National Science Foundation's Engineering Research Centers ⁴. It aims to show how fundamental technology couples directly with enabling engineering to address specific clinical drivers, and we expect applicants to be able to demonstrate such a coupling mapped onto this Roadmap.

Who Can Apply

Applications can only be submitted by academic and postdoctoral research staff at UK universities and associated research institutions that are eligible to receive EPSRC funding; applications by early career researchers are particularly welcome. Participation of industrial, clinical and other partners is encouraged, but they cannot receive grant funding. **All of the Investigators in a proposal must have registered as members of the FAST Healthcare NetworksPlus before submitting their application.** Membership is free and you can join via the FAST Healthcare NetworksPlus website ⁵.

⁴ <http://erc-assoc.org/content/three-plane-diagram>

⁵ <http://www.fast-healthcare.org.uk/join-our-network/>

What We Fund

Awards are limited to a maximum value of £56,000 at 80% of full economic cost (i.e £70,000 full economic cost) and must have a duration of no more than 6 months. Smaller and shorter projects are welcomed. Value for money will be one of the selection criteria, and applicants are expected to demonstrate this in their proposal. The funding is intended to cover the cost of employing a post-doctoral research associate for up to 6 months full time equivalent with a small additional budget for consumables and reasonable travel or online meeting costs associated with building a new research collaboration. Items of equipment costing more than £10,000 (including VAT) cannot be funded from the grant. There is very limited funding available to support directly allocated staff costs. Proposals should enable a **new** research collaboration to form between participants who have not been able to formally work together before. Investigators must therefore be from different disciplines and/or different institutions. Proposals must not be dependent on other funding that has not been secured at the time of application.

How We Will Select the Project

Proposals that are within the scope of this Call (as determined by the FAST Healthcare Management Committee) will be assessed by a panel of Network members with CRUK. The assessment criteria include:

- Fit with the FAST Healthcare Early detection of Cancer Research Roadmap ¹
 - Evidence that the project addresses a real clinical opportunity through engineering and physical sciences research
- Fit with the overall aims of the FAST Healthcare NetworksPlus
 - The formation of **new** research collaborations
 - The engagement of early-career researchers
 - To make a positive impact on the economics and clinical outcomes of public healthcare provision
- The credibility that the project would lead on to a lasting collaborative research activity involving the participants
- The academic quality of the proposal
 - Clarity of the proposal in terms of work plan and deliverables
 - Realism of the project's objectives given the scale of the project
 - Value for money
 - Ability of the academic team to deliver the project

Selected Projects

The projects that are selected for funding will form part of the EPSRC FAST Healthcare NetworksPlus project portfolio, and the Investigators, researchers and project will be listed on the FAST Healthcare website. To ensure the maximum impact from each grant awarded, the FAST Healthcare NetworksPlus may appoint an Evaluation Panel and Action Team to support the transfer of the project into a long-term collaborative research programme. The FAST

Healthcare NetworksPlus will enter into a specific collaboration agreement including mutually agreed IP arrangements for each project.

Key Dates

- Call launch: Tuesday, 28th April 2020
- Closing date for applications: 5:00 pm on Tuesday, 26th May 2020
- Award announced: late June 2020
- Projects are expected to start 1 August 2020

Further Information

For more details about the FAST Healthcare NetworksPlus, visit the website at www.fast-healthcare.org.uk.

How to Apply

To apply, please complete an application form and return it to info@fast-healthcare.org.uk by **5:00pm on Monday, 1st June 2020**. Copies of the application form are available by contacting the same e-mail address or via the FAST Healthcare website ⁶.

⁶ <http://www.fast-healthcare.org.uk/open-digital-call/>