

Cancer Research UK Early Detection Committee Supplementary Terms of Reference

This document sets out the key responsibilities that the Scientific Executive Board (**SEB**) has delegated to the Early Detection Committee (the **Committee**). It should be read in conjunction with the [General Terms of Reference for Funding Committees](#).

1 Remit

- 1.1. To be responsible for the oversight, review, funding and management of the following Early Detection (EDx) research funding schemes, including, where appropriate, outline applications and scientific milestone reviews of:
 - Early Detection Programme Awards
 - Early Detection Project Awards
 - CRUK / OHSU Collaborative Awards
- 1.2. Oversee the EDx portfolio and provide input to the office and any EDx Scientific Advisory Group.

2 Membership

- 2.1 The Committee will comply with the membership requirements set out in the [General Terms of Reference for Funding Committees](#).
- 2.2 The Committee will have a fixed membership; however, additional experts can be co-opted on to the Committee should the applications under consideration require it, at the discretion of the Committee Chair and the CRUK Office.

3 Meetings

- 3.1 In general, the Committee will meet twice per year.
- 3.2 If invited by the SEB, the Chair of the Committee will attend an SEB meeting on an annual basis to ensure that the Committee is aligned with the strategic priorities of Cancer Research UK.

4 Scope of Awards

The EDx Committee will consider Project and Programme Award applications in basic and translational/clinical research related to EDx (and OHSU collaborative awards in accordance with the remit of that scheme), in any of the research areas listed below.

Please note the Awards are not restricted to one area of the remit and may span both basic and translational/clinical cancer research. Furthermore, arbitrary remit cutoffs will not be applied between EDx committee applications and those to the Population Research Committee's Early Diagnosis scheme or other relevant schemes. If applicants wish to submit programmes of early detection research which progress (in one award) from e.g. translational detection technology research through to a population-level study of the same, the CRUK office will consider the best vehicle to review such a programme and will not artificially split in in two to meet individual scheme remits.

Early detection research will seek to identify cancer/pre-cancerous states at the earliest possible point at which an intervention might be made; such signals will detect, but may also underpin prognosis/stratification/prediction of response to therapy and prevention. The EDx committee remit will include:

- 4.1 Biological research underpinning early detection and biomarker discovery/validation, including but not limited to:

- Basic cellular/molecular science around the earliest transformational events pushing a cell from normal to at-risk to dysregulated to cancerous, thereby suggesting potential EDx markers to be explored
 - 'Omics for EDx: High throughput, high dimensional data research in markers for EDx, including proteomics, metabolomics, lipidomics, genomics, epigenomics, transcriptomics etc.
 - Basic biology and detection of circulating cellular/nucleic acid markers for early detection of cancer/pre-disease, e.g. ctDNA, CTCs, exosomes, RNAs
 - Studies may include the use of model systems, such as model organisms, cell lines, organoids and xenografts, or primary human samples.
- 4.2 Human-based EDx discovery research including but not limited to:
- Biomarker discovery and validation in early stage disease (and pre-cancerous state) patients
 - Biomarker discovery and validation in healthy volunteers
 - Exploitation of existing cohorts and biobanks for discovery research and technology development in an early detection context
- 4.3 Stratification of populations by risk to identify and exploit high-risk groups as populations for early detection research, and as appropriate clinical contexts for development of novel detection technologies
- Use of the tools, methods and insights of population science, epidemiology and risk assessment through collaborative research to inform the above.
- 4.4 Data/Computation-driven approaches to EDx, including but not limited to:
- Biomedical and Health Informatics: Computational high dimensional data analytics for interpretation of potential EDx marker profiles; analysis and integration of (multimodal) data arising from e.g. genomics, proteomics, imaging, e-health records, patient/public-derived data (personal activity monitors etc.).
 - Computational/Systems biology: Computational/mathematical modelling of complex networks and systems to understand normal, pre-cancer and early cancer biology. Modelling of the interaction within and between complex biological systems to facilitate EDx and prediction of implications of markers (e.g. distinguishing lethal from dormant disease).
- 4.5 Development and utilization of preclinical EDx model systems (e.g. cellular, organoid, xenograft, animal model) to recapitulate early cancer and precancerous states, including but not limited to:
- Creation and characterisation of new model systems
 - Use of model systems to probe and understand early events leading from normal cellular function through to cancer
 - Use of model systems to identify potential EDx markers for future clinical validation
 - Use of model systems as platforms for development of EDx technologies
- 4.6 EDx technology development – exploratory and translational research, including but not limited to:
- Imaging - Progressive research into advanced imaging technologies for cancer detection. Novel modalities, novel probes, novel contrast agents etc.
 - Circulating marker detection technology – enhancement of sensitivity/specificity of detection technologies for ultra-low concentration circulating markers e.g. cells, DNA, proteins, exosomes.
 - Advanced detection technologies (nanotech, photonics, synthetic markers etc): Engineering/physical science to enable novel methods of detection of very low-concentration markers.
- 4.7 Translational/Clinical EDx research - Experimental work in patients and healthy volunteers around development and validation of EDx approaches and technologies.
- 4.8 Cancer Research UK will only consider research proposals that are cancer-related and that contain a definite research aspect.

5 Document Information

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