



Medical  
Research  
Council

## National Mouse Genetics Network – FAQs

### Background

The Medical Research Council (MRC) recognises the critical importance of the mouse as an experimental model. This £20m new National Mouse Genetics Network investment will capitalise on recent developments in human / clinical genetics (eg rich emerging data) and cutting-edge technologies (eg specialised phenotyping). The investment will be delivered through a UK-wide call to support a national distributed network of research clusters, leveraging the strengths of MRC's investment in the Mary Lyon Centre (MLC) at Harwell, and the approx. £150m per annum that MRC contributes to national research using mouse models.

The vision for the network is that it will enable and support the development of more refined, targeted and clinically-relevant complex mouse models to 1) better align mouse studies with human health / clinical studies and 2) generate more sophisticated data-sets from such models to capitalise on recently emerging rich human / clinical data.

### Cluster & network structure

- **How many clusters will be formed?** With the current £20m investment over the first five years, we envisage supporting 4-6 clusters UK-wide, including a new cluster at Harwell. This investment is scalable and there could be potential for additional clusters in future.
- **What cluster themes would be considered?** Rather than place constraints on theme areas, the expectation is that as researchers self-organise, community-generated themes (addressing disease-, technology-, data-driven- and other challenges) and ideas will emerge, with a clearer picture of the potential portfolio of themes emerging as the call progresses. The national director will also bring their vision and influence to shape the developing call.
- **How diverse should the cluster themes be?** We would anticipate a diverse portfolio. Our aim is to individually fund the most competitive clusters - with a given cluster centred around a credible challenge-led theme - and overall to strategically invest in a set of clusters in areas that collectively make a coherent portfolio, within the broader context of UK science.
- **Will clusters be formed around single or multiple universities / institutes?** The key criteria for a successful cluster will be bringing together the right people and expertise to deliver a theme / challenge - a cluster could be within a single institution if a credible case were made, but more likely is that each cluster will be multi-

institutional, reaching across key centres of excellence (not necessarily geographically close to each other).

- **Can an institute be in more than one cluster?** Yes - as above, the key criteria will be bringing together the right people and expertise to deliver a theme / challenge.
- **Will there be region-specific investment in the clusters?** The key determinant is supporting excellence in a portfolio of clusters with distinctive themes. However, we are receptive to bids adding value to regions that may not be currently well represented. The vision for the network is that there should be access to anyone UK-wide, whether they are closely involved in activities within the network, or simply wish to access data, tools, protocols etc.
- **Will outputs of activities developed in one cluster be made available across other clusters?** Yes, we envisage creating resources that are shared and made available as widely as possible and we expect that all outputs (tools, data, protocols, technologies etc.) will be made available across clusters in the network, subject to issues such as intellectual property. This aligns with current policies at the MLC, and the open-science and 3Rs agendas seeking to promote best practice including optimising protocols for use of experimental models, avoiding generation of sub-standard models / data-sets and duplication of areas of activity across the network. The national director will play a key role in driving the open science agenda across the network.
- **What will be the nature of the cluster at Harwell?** The new cluster at Harwell will capitalise on the specific, interdisciplinary opportunities on the wider Harwell campus as well as its proximity to the Mary Lyon Centre.

## Building partnerships

- **What is the expected relationship between each cluster and the MLC?** All clusters and their associated themes must link closely to the MLC to address aspects that require a specialist facility and cannot be delivered locally (eg co-design of complex new models requiring cutting-edge expertise and technology, access to specialist capabilities in animal facilities, mouse genetics services, phenotyping not available locally, archiving and distribution of models and data). It is not the intention to replace expertise and resources available locally but to enhance innovation.
- **What other partnerships are key to successful clusters?** Central to each cluster will be the partnership between all relevant centres of excellence for a given challenge area. In addition, each cluster should seek to build relevant partnerships beyond the cluster for wider benefit.
- **Do clusters need to link to industry?** If industrial partnerships already exist these could form part of the underpinning network that the cluster would build on, but this won't be a prerequisite. Funded clusters should however provide an attractive platform (even if the chosen cluster theme isn't currently drawing major industry interest) and should consider plans of how they might engage industry in future. Also, we potentially

see a big opportunity around engaging bio-industry where they are not necessarily investing in the most innovative mouse models of human disease.

- **Will existing MRC investments interact with the network?** Yes – we envisage that MRC’s current portfolio of Institutes / Units / Centres will form key interfaces built around the network as it evolves. Engagement could also be through applicants partnering with MRC investments as part of a developing cluster bid.
- **What about the wider context of UKRI and other Research Councils?** The network may develop partnerships with other UKRI investments, including those at Harwell (eg [Rosalind Franklin Institute](#); [Nucleic Acid Therapy Accelerator: NATA](#); [Diamond Light Source](#), [Research Complex at Harwell](#)).
- **Can clusters include international collaborators?** Yes – as with MRC’s existing policies for other funding mechanisms, direct overseas costs can be part of cluster funding, where such partnerships would add obvious skills and expertise not available in the UK.
- **Will international partnerships be built into the network & cluster model?** Primarily we want the model to be a national flagship of open, integrated science but we recognise that a move to this structure has global relevance in terms of creating impact and best use of resources. We would expect the new network and clusters structure, driven by the national director and cluster leads, to collectively forge partnerships with organisations pursuing similar activities at scale in other countries.

### Autumn workshop and clusters call

- **What will be the purpose of the autumn workshop?** We want to see a diversely-themed set of clusters that allow us to strategically invest in areas that collectively make a coherent portfolio – the proposed workshop will be part of a managed process to help the community coalesce around cluster & network ideas that have real traction, and to bring together potential stakeholders to support partnership opportunities in developing applications. Attending the workshop will, however, not be a pre-requisite for funding.
- **How will the cluster selection process work?** We will be working with the national director to finalise the process, but we currently envisage that the call for clusters will open in early 2021, with a six to eight-month process of external expert review and panel assessments, with cluster awards likely to be made before the end of 2021.
- **Can cluster applicants work with the MLC in developing their application?** This isn’t mandatory, but highly recommended. The MLC staff are very prepared to help, with a team of people who can advise applicants including on current capabilities of the MLC, co-production of a developing proposal, and providing broad estimates of projected costs for proposed cluster activities using the MLC.

### Funding

- **What will the £20m support?** We envisage that the bulk of the investment will be focused on the 4-6 clusters in mouse genetics / development of innovative and relevant mouse models (eg bespoke complex mouse models of disease, humanised mice etc.) that integrate with human / clinical research. A smaller component will be tailored according to individual cluster needs to support key interfaces including with human / clinical genetics research, and for networking of existing research, or specialist interactions with the MLC (eg bidirectional cluster-MLC staff secondments)
- **How will funding be sustainable?** The initial investment is aimed at bringing added value to MRC's existing investments in mouse / human genetics and use of mouse models (approx. a quarter of MRC's grant portfolio). However, the aim is also to provide a well-designed and functional platform that is expandable and scalable if further funds become available. Sustainability of clusters will be through renewing the first five-year tranche of funding for a further five years. The national community will also have the responsibility of bringing visionary research programmes into investment to create sustainability over a 10-year timeline, capitalising on other mechanisms through external grant funding and translational partnerships.
- **Will the funding model be at full economic cost (fEC)?** Yes. As we envisage clusters that will span the universities, a full economic costing model will be supported (apart from any specific adjustments around the MLC Hub which operates on a slightly different funding model).
- **Will there be future MRC/UKRI funding calls directed to the network?** Successful clusters are expected to build on substantial existing response mode support (MRC alone spends ~£150m per annum on research involving mice). Funded clusters will act as a platform for developing complementary and distinctive applications (for example through developing pilot data to de-risk new projects) to come through UKRI normal response mode routes (eg programme / research grants). However, the overall network is envisaged as a long-term and scalable investment, with potential to add additional clusters in future, subject to a strategic case and funding.

## Mary Lyon Centre

- **Will the MLC replace other national investments in mouse research?** No – there is no intention to replace existing facilities or services provided in national universities, or to compete with other academic or commercial activities. However, the MLC is certainly more than a mouse genetics 'holding facility' as it has expertise and capacity for the provision of specialist services, prioritising innovative science and delivering an integrated package (across innovative bespoke model preparation & generation, breeding, specialised / complex phenotyping platforms, archiving etc.).
- **What current pre-clinical services does the MLC offer eg to investigate PK/PD and *in vivo* mechanisms for development of a potential therapeutic reagent?** The MLC is increasingly involved in pre-clinical studies (eg drug pharmacokinetics), conducted to industry-recognised quality control standards. For example, the MLC is

involved in therapeutic trials, and is well-set to expand through strengths in offering novel phenotyping platforms.

- **Is future working with the MLC only through the clusters?** No, the MLC will still retain independent interactions with researchers, eg through [GEMM](#) and other grant funding routes
- **Does the MLC interact with the wider Harwell campus?** Yes – the MLC has existing close ties across Harwell and will be joining up with new funding initiatives which will leverage the MLC resources, but also the resources of the bigger Harwell infrastructure investments (eg [Rosalind Franklin Institute](#); [Nucleic Acid Therapy Accelerator: NATA](#); [Diamond Light Source](#), [Research Complex at Harwell](#)). .

### National director

- **Who is the national director?** [Professor Owen Sansom](#) has been appointed as national director of the Network. He was chosen by an expert panel following an open international search led by the MRC. He is a world-leading scientist using and developing mouse models of cancer and brings a strong vision to establish collaborative networks of mouse geneticists, investigators of human disease and clinicians to develop and validate more targeted models. An initial focus for Professor Sansom will be further development of his vision through engagement with the scientific community, starting with the autumn workshop in November 2020.

### Oversight Board

- **Who will oversee the Network development?** The development and delivery of the new Network will be monitored by the Network's Oversight Board, chaired by [Professor Paul Kaye](#), Professor of Immunology at the Hull York Medical School, University of York and Chair of MRC's Infections and Immunity Board.

### Training

- **How will clusters link to other PhD student investments?** Rather than cluster funding being used to support additional students, we would envisage capitalising on existing investment in a wide range of institute student investments (eg we would expect that many HEIs within clusters hold existing studentship programmes, such as Doctoral Training Partnerships). Nevertheless, MRC may identify a strategically important area that would interact with the cluster-MLC partnership to access additional high-value training that currently isn't available in the envelope of their funding.
- **How will training in the network interact with the MLC's Advance training centre?** The [Advance training centre](#) will open early next year and will have a broad portfolio, eg targeting different career pathways, including the importance of having and sustaining technical skills and capabilities. Rather than be definitive at this stage, we envisage that needs, opportunities and added value of emerging challenges during cluster formation and the development of Advance will be very much a two-way process (eg running courses through Advance that would support national training).

## Models and data

- **What about alternative models?** Our ambition is to develop a network of clusters that can co-develop and share complex relevant mouse models with the research community. However, we recognise the potential added value of innovative emerging non-mouse models eg organoid / in silico models, with exciting opportunities in integrating experimental, imaging, phenotyping, data and other platforms with mouse models, which may depend on the cluster challenge theme and community needs.
- **What about data sharing and informatics?** A clear ambition is building a national informatics capability to support the network to ensure better utilisation of research data (eg pre-publication data on mouse models), that is as open and accessible as possible to the wider community. This will also link into our other large investments including MRC institutes and units.

## Further information

For queries or further information, please contact [MouseGeneticsNetwork@mrc.ukri.org](mailto:MouseGeneticsNetwork@mrc.ukri.org)