Nuffield Department of Population Health

# UKRI Innovation/ Rutherford Fund Fellowship at HDR UK

**Application deadline: Tuesday 9th January 2018 (12noon)**

The MRC has awarded the University of Oxford one early-career non-clinical fellowship in the area of Health Data Research. The fellowship will be for a 3-year period starting on 15th February 2018.

Applications are welcome from researchers with an outstanding research track record, whose research plans are aligned to MRC Industrial Strategy topics (Annex 1) and connected to Health Data Research UK (HDR UK).

The plan is for the Fellow to be employed by the Nuffield Department of Population Health, and to be based in the Big Data Institute, University of Oxford.

## Health Data Research UK (HDR UK)

The MRC is leading on the establishment of a multi-funder UK institute for health and biomedical informatics research to transform the UK medical informatics research landscape. It will be a national, interdisciplinary research institute that will capitalise on the UK's renowned data resources and research strengths.

The Institute will develop the capacity (people and skills) and methods to accelerate the pace and scale of health and biomedical data science to deliver a step-change in UK capabilities.

Further information about HDR UK is available here.

## The Big Data Institute (BDI)

The BDI is a new interdisciplinary research centre, located within Oxford's Old Road Campus. The institute combines researchers from genomics, epidemiology and infectious disease alongside those from computer science, statistics and engineering to develop the field of big data as applied to biomedical research. Scientists working in the institute form an analytical hub, deeply connected to the wider experimental and clinical community in Oxford and beyond, working to solve some of the major challenges in medical research. The BDI aims to develop, evaluate and deploy efficient methods for acquiring and analysing information at scale and for exploiting the opportunities for large-scale studies. The Institute provides core facilities in high performance computing and houses about 350 researchers drawn from a wide range of departments.

For more information please visit: http://www.bdi.ox.ac.uk

## Nuffield Department of Population Health

The Nuffield Department of Population Health (NDPH) provides an excellent environment for multi-disciplinary research and teaching and in the 2014 REF (Research Excellence Framework) was ranked first for research in the area of public health, health services and primary care. NDPH has over 500 staff working in a number of world-renowned population health research groups, including the Clinical Trial Service Unit and Epidemiological Studies Unit (CTSU), the Cancer Epidemiology Unit (CEU), the National Perinatal Epidemiology Unit (NPEU) and other groups working on public health, health economics, ethics and health record linkage. It is also a key partner in the new Oxford University Big Data Institute.

The wide range of opportunities for research within the department includes access to very large data-sets from clinical trials, meta-analyses and epidemiological cohorts. These research programmes are well supported by scientific teams which include clinicians, epidemiologists, statisticians, analyst programmers and research coordinators, and by excellent computing and laboratory facilities.

In addition to its research activities, the Department is home to the MSc in Global Health Science and Epidemiology. Students also come to undertake research for DPhil degrees. Teaching is provided for undergraduates reading for Medicine and for Public Health doctors in specialist training.

For more information please visit: www.ndph.ox.ac.uk

## Fellowship Details

The aim of the Fellowship programme is to support and develop outstanding postdoctoral researchers to enable them to successfully apply for external funding opportunities, and to foster and develop future leaders in Health Data research. The Fellowship is for 36 months and the applicant must be in post by 15th February 2018.

The estimated value of the Fellowship is £276K and it may include the following:

- Salary of the applicant (based on current grade / spine point)
- Research consumables directly attributable to the project
- Research equipment essential for the project
- Salary of a technician or research assistant
- Travel expenses for conference attendance/collaboration placements

## Entry requirements

- Hold a relevant PhD/DPhil, or equivalent relevant experience
- Several years of successful postdoctoral work and first-author high-impact research papers
- Possess sufficient specialist knowledge in the discipline to work within established research programmes
- Ability to manage own academic research and associated activities
- Excellent communication skills, including the ability to write for publication, present research proposals and results, and represent the research group at meetings
- Experience of following and adapting methodologies

Your application will be judged solely on the basis of how you demonstrate that you meet the above selection criteria.

## Main duties

We are seeking suitably experienced individuals to develop an independent research area that will enhance Data Health Research in Oxford.

- Manage own academic research and administrative activities within guidelines provided by senior colleagues. This involves small scale day-to-day project management to co-ordinate multiple aspects of work to meet deadlines
- Select, follow and adapt existing scientific protocols and contribute to the development of new protocols
- Test hypotheses and analyse research findings and scientific/medical data from a variety of sources, reviewing and refining working hypotheses as appropriate
- Contribute to wider project planning, including new ideas for research projects
- Contribute to the preparation of scientific reports and journal articles and present papers and posters
- Represent the research group at external meetings/seminars, either with other members of the group or alone
- Contribute to discussions and share research findings with colleagues in the department and University, in partner institutions, and other research groups
- Engage in continuous professional development, updating knowledge and understanding in the research field or specialism
- Provide guidance to less experienced members of the research group, including PhD and project students
- To contribute, as required to the wider academic activities of the Nuffield Department of Population Health (including teaching, student mentoring or supervision, and assessment) and to participate in appropriate training and quality assurance processes for such roles

## How to make an application.

**The closing date for receipt of applications is Tuesday 9th January 2018 (12 noon). Interviews will be held in Oxford on 23rd January 2018 and the person must be in post by 15th February 2018.**

Please submit the following information, as a single PDF document to recruit@ndph.ox.ac.uk.

- 2 page-CV using the MRC template (Annex 2)
- Publication list.
- Maximum 3 pages outlining an overview of applicant's proposed research, an explanation of how their research will enhance health data research in Oxford, a summary budget and a brief justification for the requested budget.
- List of references relevant to the proposed research project.
- Contact details of two referees (for external candidates only). Please indicate if they may be contacted in advance of the interview.

Final details of a fellowship award budget will be negotiated once an offer has been made.

For informal enquiries please contact Professor Martin Landray on 01865 743848 or martin.landray@ndph.ox.ac.uk

*As an Equal Opportunity employer, we positively encourage applications from people of all backgrounds.*

## ANNEX 1

### Annex 1 - MRC priority areas aligned with the Industrial Strategy

### Digital Technologies and Informatics for Health

The scale and complexity of biomedical and health data is increasing through a variety of sources, including large population and cohort studies, high-throughput 'omics' platforms, imaging, and mobile, patient-centered technologies. Bringing these and other data together for analysis and interpretation offers unprecedented opportunities to advance understanding of the causes, prevention and treatment of disease. Building on major existing investments, such as the Farr Institute of Health Informatics Research and Medical Bioinformatics awards, the MRC has recently announced the establishment of a single UK-wide, distributed health and biomedical informatics research institute, Health Data Research UK (HDR UK). Developing capability, talent and expertise in "translational" health and biomedical informatics will be critical to future understanding of the complex environmental, social and molecular determinants of disease and lead to novel approaches for prevention and therapy. The ABPI report on bridging the skills gap for the biopharmaceutical industry[1] identified key areas where the UK needed stronger research capability and highlighted immediate needs in informatics (biomedical and health systems), big data, mathematical biology and statistics. The formation of HDR UK will deliver a step-change in UK capacity and capability for this science. Consequently, any students recruited in informatics / data science as part of this allocation should be aligned to institutional ambitions to become a site of HDR UK, should that bid be successful.

### Advanced Therapeutics

The UK has a world-leading science base in regenerative medicine and gene therapy, built on strong fundamental research and training, clinical-research pull-through, and a well-developed legislative framework. The MRC's investments in regenerative medicine, stem cell research and developmental biology provide the groundwork for the development of cell and gene therapies and tissue engineering technologies, including their delivery and safety. There are now a number of new clinical trials and new vaccine development underway as a consequence of this investment. Analysis by the Cell and Gene Therapy Catapult identified 15% growth in the field in 2015 with 52 UK companies now working in the broader advanced therapies space, while company investment raised totaled £76m; the global market for regenerative medicine and cell therapies will exceed £67bn by 2020.

Regenerative medicine is central to MRC's Strategic Plan and is one of the Governments "Eight Great Technologies". MRC's approach to this area has been guided by the "Strategy for UK Regenerative Medicine", published in March 2012[2] by the Research Councils and Innovate UK, which has delivered substantial and aligned public investment (~£200m) since that time. The Research Councils have committed £80m in strategic funding into the area over a five-year period with a central pillar being the establishment of the £25m UK Regenerative Medicine Platform (UK RMP). The UKRMP has successfully established a broad-based yet coherent interdisciplinary programme that is making inroads on the key

[1] abpi (November 2015) Bridging the skills gap in the biopharmaceutical industry – Maintaining the UK's leading position in the life sciences.

[2] A Strategy for Regenerative Medicine (2012), the Research Councils and TSB: www.mrc.ac.uk/documents/pdf/a-strategy-for-uk-regenerative-medicine/

translational challenges of regenerative medicine. MRC, BBSRC and EPSRC have recently committed to deliver a further £17m over the next five years to build on the Platform's successes.

Substantial progress has been made in the field in recent years in better understanding the underlying biology which in turn has led to more researchers moving into translational regenerative medicine. Related advances in biomaterial technology, nanobiology, gene engineering and manufacturing have also contributed to renewed optimism that real advances may be made in the clinical arena soon. Hence, this area continues to present significant scope for development of UK biomedical innovation in support of the UK bio-economy.

**Accelerating Medicines Discovery and Translation**

The pharmaceutical pipeline starts with discovery research aligned with industry objectives – to progress a drug to market requires expertise in multiple disciplines including chemical biology, informatics, pharmacology, and toxicology, as well as the development of appropriate animal models and experimental medicine in humans. Accelerating this pathway has been a long-term strategic priority for MRC with targeted funding through the Biomedical Catalyst and Pathway to Discovery scheme. A crucial step to de-risk industry investment is the early and comprehensive validation of therapeutic targets: creating a better understanding of complex disease mechanisms and pathways through the convergence of biological data with phenotypes.

**Precision Medicine and Diagnostics**

Stratified medicine identifies groups of people with specific disease 'subtypes' so that clinicians can accurately diagnose their conditions and determine treatments which are most likely to be effective – this approach underpins the practice of precision medicine. Through our Stratified Medicine Initiative, co-developed with industry, we invested £60m between 2010 and 2014 into thirteen disease-focused consortia across, involving 90 academic groups across 34 universities and 70 companies. A further round of investment in new consortia will be made in 2017.

A further £16m has been invested into six Molecular Pathology Nodes to embed outputs of stratified medicine into clinical practice. The consortia and nodes have developed into open innovation platforms linking clinical, academic and commercial research for real patient benefit. The MRC's disease-focused stratified medicine consortia and molecular pathology nodes provide the evidence, in partnership with industry, to better tailor existing treatments, as well as providing new insights into disease mechanisms to support the development of new therapeutics.

Developing diagnostics and sensors that enable anticipation, prevention and management of disease and disorder in the healthy, elderly and chronically ill, offers new opportunities for treatment, early intervention, prevention and enable independent living. Informatics is essential to explore, integrate, and exploit the complex data from molecular analyses, sensors, point of care diagnostics, and mobile devices used by professionals and the public for research and evaluation.

**ANNEX 2**

**OFFICIAL: Fellowship CV Template**

**MRC Fellowships: This form must be completed by all applicants applying for a MRC Fellowship and must be submitted with the MRC Je-S fellowship application form. Please note that relative sizes of each section may be altered and non-relevant sections (including this paragraph) may be deleted, however the final version must not exceed 2 pages. This document should be completed in Arial 11pt.**

| **Personal Information:** |
|---|
| Name (including title): |
| Email address: |
| Contact telephone number: |
| Current Research Organisation: |
| Proposed Research Organisation (where research is to take place): |

| **Dates (month/year)**<br><br>**From To** | **Universities/colleges attended** | **Subjects read and examinations taken** | **Degree with details of class of honours, prizes etc** |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**The sections below may be deleted where not applicable**

**Post-Doctoral only:**

| | |
|---|---|
| Date of PhD Viva (month and year): | |

**Pre-Doctoral only:**

| | | |
|---|---|---|
| **Have you registered for your PhD:** ***(tick as appropriate)*** | **Y** ☐ | **N** ☐ |
| **If Y, date registered (**month and year)**:** | | |
| **Is this full time:** ***(tick as appropriate)*** | **Y** ☐ | **N** ☐ |
| **If N, what % of time?** | | |

**Clinical only:**

| **Please tick to indicate current level or nearest equivalent** | | |
|---|---|---|
| Foundation ☐ | **Speciality Training Registrar** ☐<br>**Please indicate grade:** | **Consultan**t ☐ |

| | |
|---|---|
| CCT date (month and year): | |
| Please indicate anticipated CCT date if not already obtained: | |
| **Royal College Examination** (Name of examination and date (or anticipated date) of completion, e.g. MRCP 2013) | |
| **Do you intend be clinically active:**<br>a) **During the award**<br>b) **In your career following the award** | <br>Y/N<br>Y/N |

| **Employment History:** Provide details of your employment in chronological date order (most recent first) and including your present position in the table below: | | | | |
|---|---|---|---|---|
| **Dates (month/year)**<br><br>**From** **To** | | **Name of organisation and position held.** Please detail of what your current position involves and the salary associated with this. | **PI name** | **Type of appointment e.g. permanent, fixed-term, full-time, part-time etc** |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| **Career Breaks: Please detail any career breaks in the table below:** http://www.mrc.ac.uk/documents/pdf/career-breaks-and-flexible-working-guidance/ | | |
|---|---|---|
| **Dates (month/year)**<br><br>**From** **To** | | **Reason** |
| | | |
| | | |
| | | |

| **Funding History:** Please provide details of your research funding in chronological date order (most recent first) in the table below: | | | | | | |
|---|---|---|---|---|---|---|
| **Dates (month/year)**<br><br>**From** **To** | | **Name of grant held.** | **Position on the grant:** e.g. PI, Co-I, RA | **Total amount awarded** | **Did this pay for your full salary? Y/N** | **Were the Research Costs Awarded above £50k per annum** (above salary)**? Y/N** |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| **Prizes and Awards: Please detail any prizes or awards in the table below:** | |
|---|---|
| **Date (month/year)** | **Award** |
| | |
| | |

| **Additional information: (Please indicate** any further details you with to bring to the referees' attention**)** |
|---|
| |