

British Heart Foundation - UK Dementia Research Institute

Centre for Vascular Dementia Research

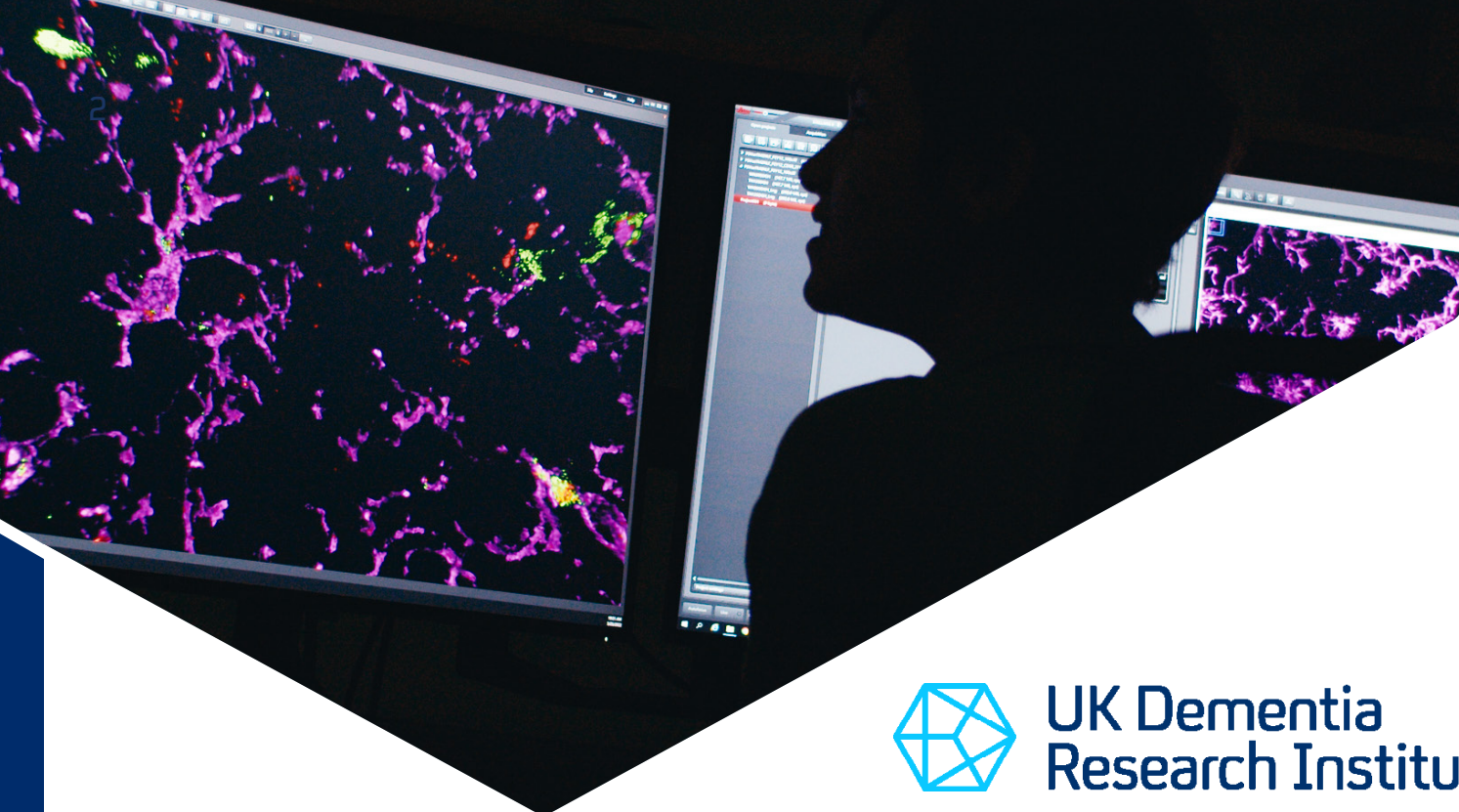
# Group Leader Candidate Pack



Principal funder:



Medical  
Research  
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## UK Dementia Research Institute

Dementia and related neurodegenerative diseases represent one of the most pressing medical and economic challenges facing society today, affecting 45 million people worldwide, with this number projected to triple by 2050. One in four hospital beds in the UK is currently occupied by someone with dementia, and dementia is now the leading cause of death in the UK.

Established in 2017, the UK Dementia Research Institute (UK DRI) is the UK's largest programme dedicated to understanding the causes of dementia and translating that understanding into ways of preventing and treating it.

The UK DRI is a world class institute that brings together the expertise of 60+ Group Leaders and 800+ staff who work in cutting edge research facilities based at UCL, University of Edinburgh, University of Cambridge, Imperial College London, King's College London and Cardiff University.

We do original, ground-breaking research that will transform lives. We attract the brightest minds and provide them with the best technology, research tools and technical support. Our work is highly collaborative—we work with people affected by dementia, the wider academic research community, the NHS and industry to translate our findings into treatments. We are renowned for the quality of our discovery science, our translational agenda, a willingness to share data, ideas and resources, and our unwavering commitment to patients and those at risk of developing dementia.

The nationwide reach of the UK DRI promotes and grows partnerships not only within our host universities but also the wider UK research landscape. We are the nexus for an engaged and collaborative UK community of people working to end dementia. Our researchers are connected, regardless of where their labs are based. Ideas, tools, technologies and data flow between UK DRI teams.

Each of our Centres is overseen by a tenured, professorial-level Centre Director. Our Centre Directors are also part of the UK DRI's national leadership team, supporting the Institute Director's vision.

Read more about the UK DRI:  
[www.ukdri.ac.uk](http://www.ukdri.ac.uk)

## We operate as a single institution



For more than 60 years, the British Heart Foundation (BHF) has been at the forefront of cutting-edge cardiovascular research that has saved countless lives. When the BHF was founded, heart and circulatory diseases caused over half of all deaths in the UK. Sudden death from a heart attack at the age of only 50 or 60 was so common that it was thought to be a simple fact of life. Seven out of ten would die.

With the unwavering support of the public, BHF-funded researchers pioneered a revolution in the understanding and treatment of conditions like coronary heart disease. Today, thanks in part to our research, seven out of ten people survive a heart attack. Despite this progress, our work is needed more than ever to support the 7.6 million people across the UK living with heart and circulatory diseases, including vascular dementia.

Guided by our Strategy to 2030, our vision is a world free from the fear of heart and circulatory disease. We know that the best way to achieve this is to continue to fund groundbreaking cardiovascular research. With over £410 million of research underway and an aspiration to invest over £1 billion in research over the next ten years, we are making strong progress in support of our vision.

As the largest non-commercial funder of cardiovascular research in the UK, supported entirely by generous charitable donations, we:

- Fund research into all heart and circulatory diseases, and their risk factors
- Fund research across the full spectrum, from discovery science to innovation in practice

- Attract, nurture, and support the brightest minds and the best ideas
- Make strategic investments to address unmet needs and seize new opportunities
- Actively develop new national and international partnerships to maximise our impact

Our new partnership with UK DRI, launching the UK's first dedicated Centre for Vascular Dementia Research, will accelerate our ambition to find new ways to prevent and treat vascular dementia. Integrating over six decades of BHF's rich experience in cardiovascular research within the UK's flagship investment in dementia research, together we will give hope to the individuals and families that have been devastated by vascular dementia.

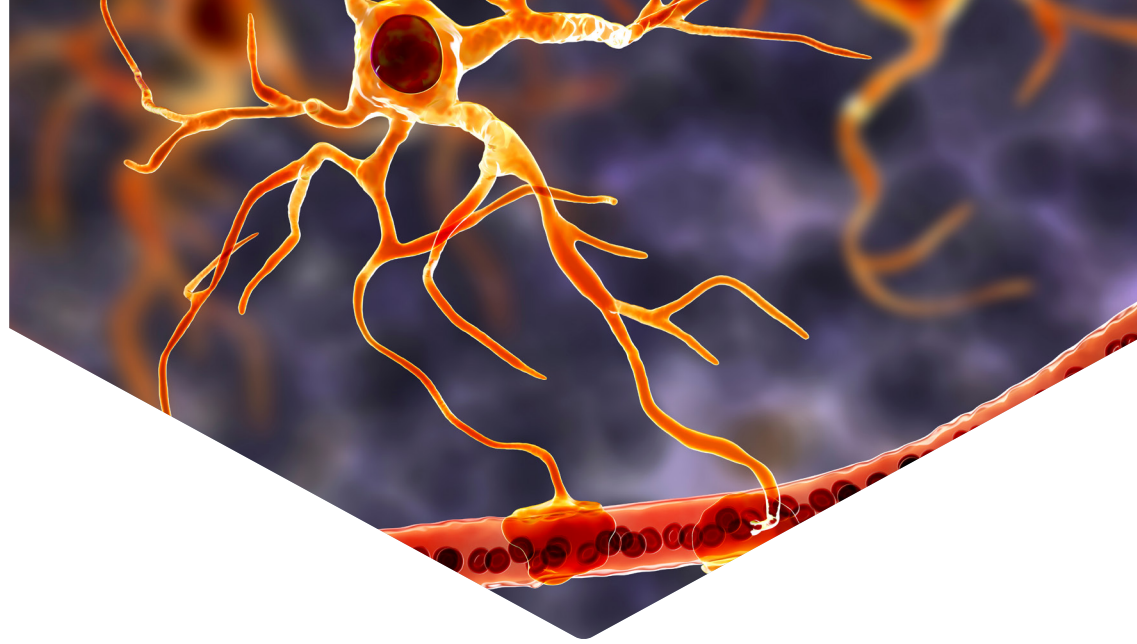
Read more about the BHF:

[www.bhf.org.uk](http://www.bhf.org.uk)

"We're proud to be joining forces with UK DRI to launch the BHF-UK DRI Centre for Vascular Dementia Research, bringing together the brightest minds to drive forward pioneering research into this devastating condition. By combining our expertise and resources, the Centre will provide an international platform for world-leading collaborations that will accelerate the global search for a cure."

**Dr Charmaine Griffiths**  
BHF Chief Executive Officer





# A new partnership to tackle vascular dementia

It has been estimated that 30% of dementia cases worldwide could be attributable to risk factors such as diabetes, midlife hypertension, hypercholesterolemia and obesity among others. Specifically, midlife hypertension is one of the major contributors to vascular dementia. There is also growing recognition that Alzheimer's disease and vascular dementia present in many cases as 'mixed dementias'—they share the same risk factors and both neuropathology and vascular dysfunctions can be observed in both types of dementia. Crucially, it appears that vascular dysfunction can occur early in the course of cognitive decline, potentially before neurodegenerative changes, highlighting the brain's vasculature as an attractive and accessible target for intervention.

Recognising these opportunities, UK DRI invested early in areas such as cerebral small vessel disease, as well as vascular contributions to other types of dementia such as Alzheimer's disease. This commitment included welcoming established world leaders in the field to the UK DRI and the targeted recruitment of rising stars to grow the UK's vascular dementia research community, providing significant core awards, project grants and relevant tools and technology to support their work, establishing an Institute-wide "Vascular Theme" bringing together clinical and preclinical expertise from across the UK DRI and beyond, and hosting seminars and workshops to explore new directions and partnerships. Ongoing areas of UK DRI research include vascular contributors to neurodegeneration and dementia, understanding the mechanisms

behind decreases in cerebral blood flow and blood-brain barrier dysfunction during ageing and disease (with a strong focus on pericytes and endothelial cells), and a greater understanding of the role of glial cells in vascular dysfunction. Moreover, UK DRI researchers run clinical studies into the causes and risk factors that progress vascular dementia, as well as preventative clinical trials.

Despite our ongoing work in this area, we recognise that there are many other areas of investigation that we should be studying if we are going to understand how the brain vasculature is involved in brain function and dysfunction, and translate that knowledge into treatment and prevention. Within this framework, the British Heart Foundation and UK DRI have entered into an exciting new partnership to significantly expand our work in this area.



*"This new collaboration represents a major step forward in our efforts to address the knowledge gap in vascular dementia. With the BHF's wealth of experience in vascular research and the UK DRI's expertise in dementia, I am confident that discoveries made at the new Centre will dramatically improve clinical care and quality of life for the millions of people around the world affected by the condition."*

**Prof Siddharthan Chandran**  
UK DRI Director

# Centre for Vascular Dementia Research

In partnership with the British Heart Foundation, the UK DRI has established a new research centre: the “BHF – UK DRI Centre for Vascular Dementia Research” (CVDR). The CVDR will provide a critical mass, visibility and long-term commitment to this important area of research.

At the heart of the new Centre will be five new UK DRI Group Leaders (principal investigators) to be recruited via an international search, whose salary and research programmes will be supported by this new partnership. The first of these positions has been filled by the new Director, Professor David Attwell, FRS, FMedSci, who is located at UCL.

The remaining 4 Group Leader positions are now to be filled. In addition, existing UK DRI Group Leaders whose research is primarily focused on vascular contributions to dementia will also be affiliated with the new Centre (see page 6), contributing to a critical mass of collaborating researchers.

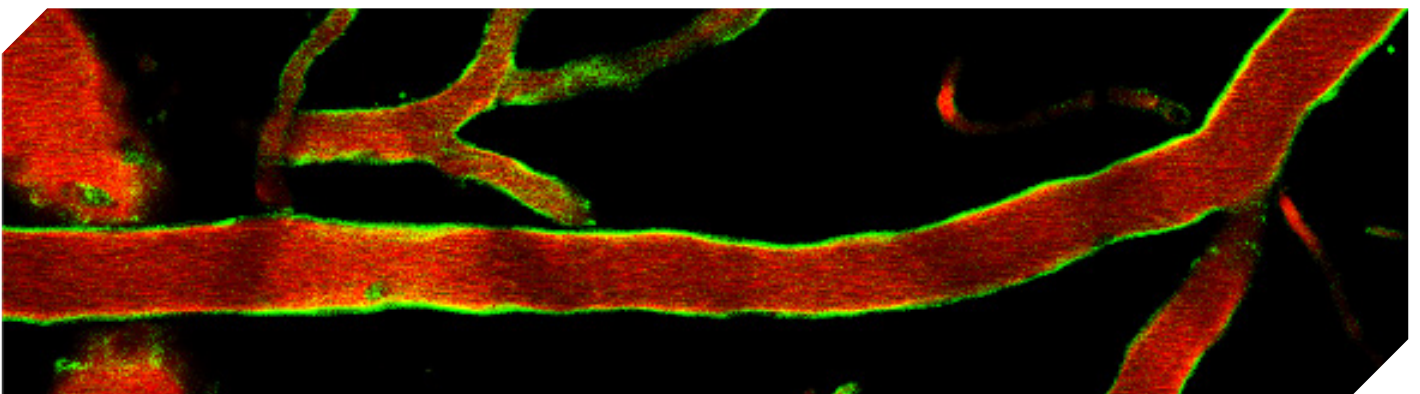
The CVDR Group Leaders will benefit from all of the established UK DRI resources including our phenomenal discovery-to-patient research community, technology platforms and expertise, funding opportunities, partnerships, training and tech transfer.

The CVDR will tap into UK DRI’s many existing tools and techniques and will pioneer new research approaches to understand the vascular causes of cognitive impairment and dementia and how to slow or prevent vascular dementia. Collectively the new Centre’s researchers will investigate the fundamental mechanisms of disease, delivering new insight, novel diagnostics and therapeutic treatments. This research will build upon the UK DRI’s significant existing expertise in blood-brain barrier integrity, vascular contributions to AD and molecular analyses of the interplay between different vascular cells in health and disease.

The CVDR will adopt a distributed, network structure. Its Group Leaders will be able to choose to be physically located at one of our existing UK DRI host universities (Cardiff University, Imperial College London, King’s College London, UCL, University of Cambridge, and University of Edinburgh) or at certain BHF Centres of Research Excellence, depending on which provides the optimum intellectual environment, access to critical technology and infrastructure, proximity of intended close collaborators and other tangible benefits for the research to be performed. CVDR members will be involved in the wider UK DRI “Vascular Theme”, binding together UK research in vascular dementia as well as promoting the consideration of vascular contributions to dementia for researchers studying a variety of diseases and disease processes.

## £9M

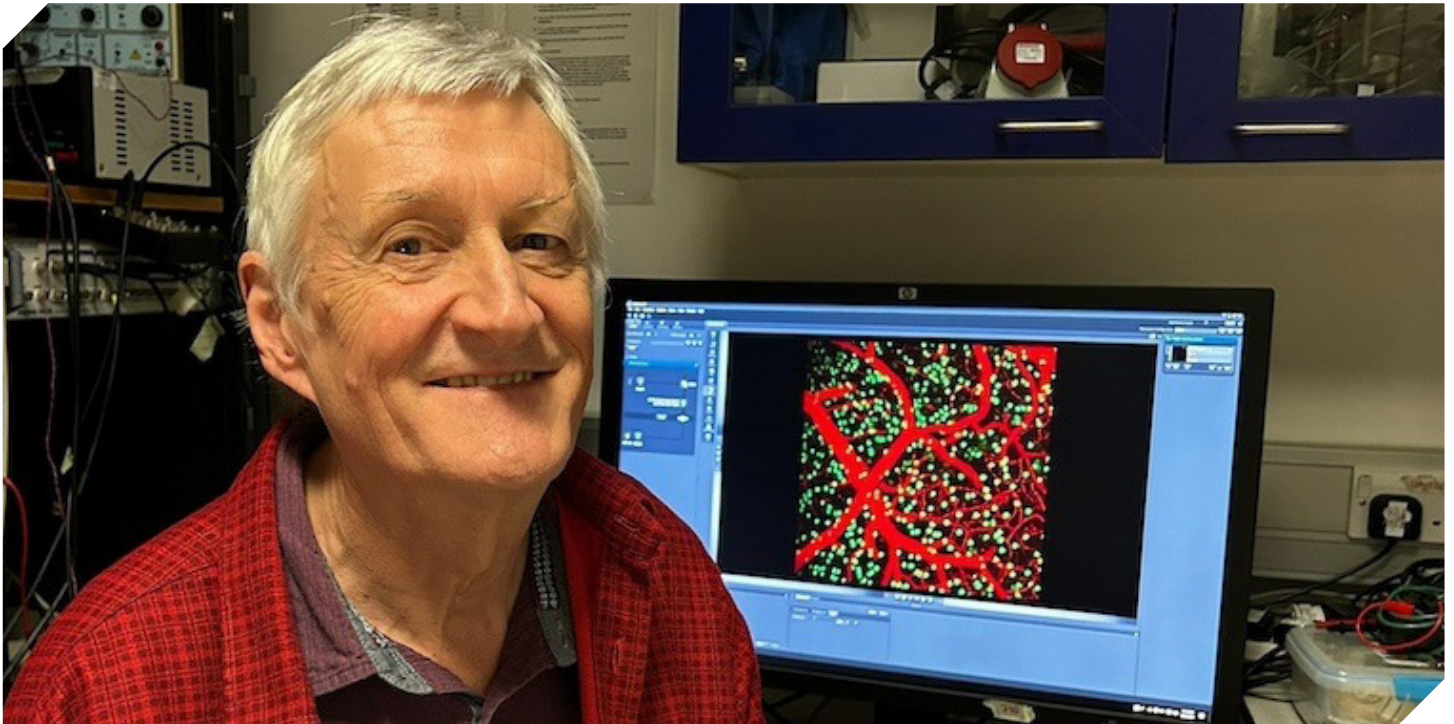
will be invested in the new  
Centre over 5 years



Brain blood vessels of a mouse under a 2-photon microscope (Red = vessel marker, Green = inflamed vessels) courtesy of Dr Axel Montagne

# Existing UK DRI Group Leaders in the vascular dementia research field

Prof David Attwell, FRS, FMedSci, MAE

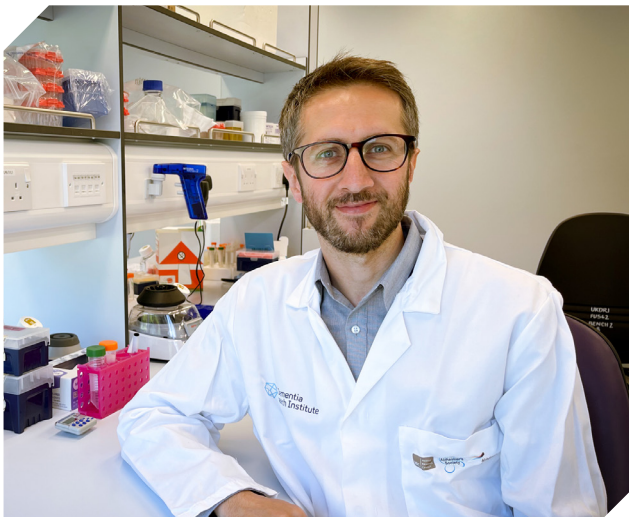


The CVDR Director, David Attwell, has worked on a wide range of CNS functions relevant to Vascular dementia, including brain energy usage, control of cerebral blood flow at the capillary level, Alzheimer's disease, stroke, and demyelination. He has previously co-directed a \$6M Fondation Leducq vascular grant involving 6 research groups, and directed 8 Wellcome or ERC Programme Grants and Investigator Awards. He is currently President of the Physiological Society, and was awarded the 2016 Fondation Ipsen Prize for Neuroenergetics and the 2016 FENS-Kavli award for mentoring neuroscientists. From 2019-2022 he was a highly cited scientist according to Web of Science (in the top 0.1% of cited scientists). He was made an FMedSci in 2000 and an FRS in 2001.

*“The influence of blood vessels in the brain has been massively underestimated in our understanding of the causes of dementia. It is a privilege to be involved in setting up a centre funded by both the UK Dementia Research Institute and the British Heart Foundation which will have the aim of understanding how blood vessel dysfunction leads to dementia, thus providing novel therapeutic targets for treatment.”*

## Prof Joanna Wardlaw CBE, FMedSci, FRSE

An internationally renowned researcher, and designated Clinical Director of the CVDR, Prof Joanna Wardlaw CBE is Chair of Applied Neuroimaging and Head of Neuroimaging Sciences and Edinburgh Imaging at the University of Edinburgh. After studying physiology and medicine, and graduating with honours, she specialised in cerebrovascular disease and brain imaging. Joanna has received numerous international awards for her work, and a CBE for services to medicine and neuroscience in 2016. She has established national imaging research facilities, led a \$6m Leducq Network, led large clinical trials, and is a Web of Science highly cited researcher 2018-2023. Joanna brings translational expertise to the UK DRI at Edinburgh and the CVDR, leading research investigating mechanisms and a Phase 3 trial in small vessel disease, the commonest vascular cause of dementia.



## Dr Axel Montagne

Dr Axel Montagne joined the UK DRI at Edinburgh in December 2020. He completed his PhD degree at the University of Caen Normandy (France) in 2012, followed by postdoctoral training at the University of Southern California (USC) in Los Angeles from 2013 to 2016. Axel rapidly became Assistant then Associate Professor at USC in 2016 and 2020, respectively. His career has focused on how cerebrovascular dysfunctions contribute to neurodegeneration and dementia in both animal models and humans. In this UK DRI programme, he combines molecular approaches with rodent non-invasive imaging, particularly MRI and PET, to study the causes and effects of blood-brain barrier dysfunction, with a particular focus on the pericyte-endothelial crosstalk, in the context of neurodegenerative disease.

## Dr Blanca Díaz-Castro

Dr Blanca Díaz-Castro joined the UK DRI at Edinburgh in October 2019. She obtained her PhD degree at the University of Seville - Institute of Biomedicine of Seville (IBiS) and after a brief stay at Northwestern University, Chicago, she completed her postdoctoral research at the University of California, Los Angeles. Her career has been centred on the study of molecular and cellular aspects of astrocyte biology that contribute to neuronal function in health and disease. In this UK DRI project, Blanca focuses on dementia research by using her expertise towards understanding how blood-brain barrier cells communicate with each other and act as a bridge between the periphery and the brain.



# Appointment of four CVDR Group Leaders

We wish to appoint four outstanding scientists as Group Leaders in the Centre for Vascular Dementia Research.

Researchers working in any scientific area relevant to Vascular Dementia are eligible to apply, including those:

1. studying molecular and cellular mechanisms underlying decreases in cerebral blood flow, blood-brain barrier function and myelination in vascular dementia, and comorbidities such as diabetes and hypertension;
2. carrying out in vivo imaging of brain function relevant to vascular dementia;
3. using genetic or epidemiological approaches to understand susceptibility to vascular dementia;
4. defining therapeutic approaches for prophylaxis or treatment of vascular dementia;
5. carrying out clinical trials on vascular dementia.

An emphasis on understanding human vascular dementia and translating mechanistic animal research into human therapies will be valuable.

Each successful candidate for Group Leader will bring an international reputation in a relevant research field, and will initially be funded for 5 years by a programme grant of approximately £1.5M (the precise amount depending on whether applicants already have their salary funded in any way). We anticipate this will fund the Group Leader's salary, two post-docs, animal and consumable expenses, travel to conferences, and overheads at the UKDRI-agreed rate. Application for further outside funding is encouraged, and there will also be small pump-priming grant awards available from within the CVDR for collaborations between different Group Leaders. Group Leaders who pass their 5 year review will be given tenure in their host university.

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## Role

- To establish and lead a research group of the CVDR.
- To carry out cutting edge research in vascular causes of dementia.
- To optionally apply for further funding to expand your group and further the CVDR's mission.
- To work with the CVDR Director and other CVDR members to establish a thriving research network, advancing our basic understanding of vascular dementia and identifying novel therapeutic opportunities.
- To attend and contribute to an annual multi-day retreat aimed at discussing science, developing new approaches, and mentoring researchers in vascular dementia
- To recruit, train and manage post-docs and PhD students, nurturing their career development.
- To champion inclusivity by supporting initiatives designed to promote greater diversity, and actively support our aim that all individuals should have equal opportunities for employment and advancement on the basis of their skills, aptitudes and abilities.
- To ensure that the CVDR's research fully meets current ethical standards and adheres to guidelines from our funding bodies and host universities.



## Selection criteria

- PhD, MD or equivalent – we welcome applications from established tenured researchers as well as those seeking independence for the first time.
- A track record of innovative research, with highly regarded papers, and (ideally) previous grant or fellowship funding.
- Creative ideas for understanding mechanisms underlying vascular causes of dementia, and for translating mechanistic discoveries into potential therapies.
- A commitment to training and developing the career of the people in your lab, and a willingness to embrace diversity in the lab.
- An ability to work co-operatively in a multidisciplinary setting.
- Resourceful and able to act on own initiative.
- Ability to communicate and deal effectively and professionally (i.e., with tact, diplomacy and sensitivity) with a wide range of people at all levels in and outside the university.
- Ability to lead people in an inspiring manner and to collaborate productively.



# How to apply

Group Leaders at the CVDR are employed by the university at which they are based.

As part of the application you should identify which of the following locations would be best suited to host your position and provide a justification:

## 19 July

Deadline for applications

### UK DRI Host Universities

- Cardiff University
- University of Cambridge
- University of Edinburgh
- Imperial College London
- King's College London
- University College London

### BHF Centres of Excellence

- University of Leicester
- University of Manchester
- University of Oxford
- University of Cambridge
- University of Edinburgh
- Imperial College London
- King's College London

Each request will be reviewed and the requested university will be engaged as part of the recruitment process should your application be taken forward.

Prospective applicants are invited to contact the CVDR Director, David Attwell ([d.attwell@ucl.ac.uk](mailto:d.attwell@ucl.ac.uk)), for an informal and confidential discussion about the role.

Applicants are asked to send the following documents to UK DRI Operations Manager, Liz Chambers ([l.chambers@ukdri.ucl.ac.uk](mailto:l.chambers@ukdri.ucl.ac.uk)), to arrive by 9am GMT on **Friday 19 July 2024**.

Please include your surname followed by 'CVDR Group Leader recruitment' in the subject line.

- A cover letter that explains your motivation for joining the CVDR.
- A description of your vision for your Vascular Dementia-related science. Describe your past and future (next 5 years) research programme, and the optimum university host for your future research programme. 6 pages maximum including references and all material.
- A full curriculum vitae and details of three referees whom we may approach before offering an interview.

Shortlisted candidates will be invited to attend a formal interview with the Appointment Committee.

Committees will include: the CVDR Director and Clinical Director, representatives of the UK DRI and BHF and a subject-related expert.



# UK Dementia Research Institute

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