UK Human Functional Genomics Initiative Doctoral Landscape Award (FGx-DLA)

Project Directory

The projects listed below are available through the UK Human Functional Genomics Initiative Doctoral Landscape Award (FGx-DLA).

Projects are grouped according to whether they are primarily wet lab, dry lab, or involve both wet and dry lab approaches.

Please select the individual project hyperlinks to view further details about each project, including the project description, supervisory team, research environment and relevant publications.

How to Apply

IMPORTANT: This is a two-stage application process. Please ensure that you have read the entry requirements for the programme to which you are applying before submitting your application.

Please complete both of the following steps:

1. Submit your programme application

To apply for a project, please use the **APPLY HERE** link. You will be provided with a **Student Applicant ID number** as part of the application process. Please make a note of this number, as you will need it to complete Step 2.

2. Complete the Student Application Questionnaire

Once you have submitted your programme application, please complete the **Student Application Questionnaire**. You will need to provide your **Student Applicant ID number** when completing the questionnaire. Student Application Questionnaire – Fill in form

Both stages must be completed for your application to be considered.

Project title	Lead supervisor	Institution
Wet lab		
Cellular phenotypes of in vivo grafted human neurons with autism risk mutations	Laura Andreae	King's College London
Deciphering protein post-translational modifications in neurodevelopmental disease	Joseph Bateman	King's College London
Decoding Human Genetic Variation in Zinc Homeostasis Using Functional Genomics	Michalis Barkoulas	Imperial College London
Decoding the functional role of glaucoma risk genes using advanced bioengineered models	Darryl Overby	Imperial College London
Decoding the nuclear role of Teneurin-3 in human neural development	Robert Hindges	King's College London
Decoding the rules of human gene interaction networks using combinatorial functional genomics	Benjamin Housden	University of Exeter
Enhancer-promoter communication and the origins of drug-resistant epilepsy	Srinjan Basu	Imperial College London

Project title	Lead supervisor	Institution
From Genetic Risk to Cellular Dysfunction: Decoding Lysosomal Pathways in Dementia	Brent Ryan	University of Oxford
From genetic risk to disease mechanism: functional genomics of steatotic (fatty) liver disease	Inês Cebola	Imperial College London
From variant to developmental phenotype: functional genomics and chromatin regulation in the human cortical environment	Katie Long	King's College London
Functional genomic characterisation of genetic risk for diabetic neuropathy using human stem cell models	Akshay Bhinge	University of Exeter
Functional genomics of IGF-1 signalling at the sensory neuron-connective tissue interface in carpal tunnel syndrome	Akira Wiberg	University of Oxford
Functional genomics of immune-epithelial communication at the human brain barrier	Joana F Neves	King's College London
Functional interpretation of human NF1 genetic variation using precision genome editing and in vivo phenotyping	Yosuke Ono	University of Exeter
Identifying Druggable Synthetic-Lethal Vulnerabilities in Primary Human VEXAS Blood Stem Cells	Paul Lehner	University of Cambridge
Dry lab		
Beyond Genes: AI models for isoform-resolved single-cell biology	Konrad Rawlik	University of Edinburgh
Decoding psychiatric risk: linking 3D genome regulation to calcium signalling in human brain cells	Jeremy Hall	University of Oxford
Developing a variant effect predictor for multiple missense variants in the same protein molecule to aid clinical interpretation	Caroline Wright	University of Exeter
From genes to brain networks: where do rare and common genetic risks for neurodevelopmental disorders converge?	Konrad Wagstyl	King's College London
From variants to placental function: using cell-free DNA to dissect the functional genomics of adverse pregnancy outcomes	Kiki Edith Cano-Gamez	University of Exeter
Multi-ancestry GWAS of drug-safety phenotypes across global biobanks	Junqing Xie	University of Oxford
Next-generation machine learning for genetic interaction prediction with lab-in- the-loop validation in pancreatic cancer	Magdalena Strauss	University of Exeter
One read, one cell: Decoding cell identity with long-read sequencing	Eilis Hannon	University of Exeter
The Hidden Landscape of Human Protein Variation	Matthew Child	Imperial College London
Understanding how genetic variation causes disease through cell-specific protein interactomes	Alessia David	Imperial College London
Understanding the molecular pathogenesis of psychiatric illness by combining functional genomics and artificial intelligence	Andrew Bretherick	University of Edinburgh
Which Isoforms Matter? Using AI and Human Genetic Variation to Decode Splicing in Disease	Joseph Marsh	University of Edinburgh
Both		
A dual-MAVE framework for the interpretation of natural and synthetic transcription factor variants	Grzegorz Kudla	University of Edinburgh
A Splice of Life: From Novel Brain mRNA Isoforms to Functional Proteins	Rosemary Bamford	University of Exeter
Allele-resolved genetics and epigenetics in type 2 diabetes	Nick Owens	University of Exeter
Bridging genomics and disease biology in Alzheimer's disease and glioblastoma using living human brain tissue	Claire Durrant	University of Edinburgh
Chromatin gating of human interneuron maturation: how SETD1A mutations disrupt the parvalbumin gene regulatory programme	Oscar Marín	King's College London
Data-driven development of in vitro models of immature human lung cell types	Sara Clohisey Hendry	University of Edinburgh
Decoding cell-type-specific splicing: linking protein–RNA binding maps to saturation mutagenesis	Jernej Ule	King's College London
Decoding cellular diversity in the brain: functional annotation of neuronal subtypes across development and disease	Jonathan Mill	University of Exeter
Decoding immunogenetic risk in psychiatric disorders	Mary-Ellen Lynall	University of Cambridge
Defining Causal Genetic Drivers of Fibroinflammation in Human Chronic Liver Disease via Single-cell eQTL Analysis	Prakash Ramachandran	University of Edinburgh
Dissecting Metabolic Heterogeneity in Severe Mental Illness Through Genetic Clustering and Single-Cell Functional Genomics	Jess Tyrrell	University of Exeter

Project title	Lead supervisor	Institution
Editing the Alzheimer's Epigenome: From Human Brain Variation to Functional Mechanisms	Emma Dempster	University of Exeter
Epigenetic regulation of transcript choice across brain ageing and neurodegeneration	Mina Ryten	University of Cambridge
Epigenomic profiling of peripheral and brain-resident immune cells in Alzheimer's disease: from gene regulation to disease risk	Alexi Nott	Imperial College London
Establishing an Arrayed Synthetic mRNA Functional Genomics Platform	Catherine Wilson	University of Cambridge
Finding the machinery that builds TREM2: a genome-wide CRISPR screen for the biogenesis of an Alzheimer's risk receptor	Haoxi Wu	University of Oxford
From deletion to brain: AI-guided functional genomics of 22q11.2 deletion syndrome	Anthony Vernon	King's College London
From GWAS to mechanism to treatment repurposing: defining and testing NGF- signalling in human frozen shoulder	Dominic Furniss	University of Oxford
From RNA to synapses: uncovering how ZNF804A controls neuronal development	Deepak Srivastava	King's College London
From variant to function: defining how inherited STING1 variation controls persistent viral infection	Alexander Mentzer	University of Oxford
Functional genomic approaches to convergent mechanisms in chromatinopathies	M. Albert Basson	University of Exeter
Functional Genomics of Alzheimer's Risk: From Epigenetic QTLs to Functional Validation	Sarah Marzi	King's College London
Functional genomics of health and unhealthy fat distribution	Michael Weedon	University of Exeter
Functional Genomics of Microglial-Neuronal Lipid Crosstalk in Parkinson's Disease Target Discovery	Elena Navarro-Guerrero	University of Oxford
Functional genomics of organelle communication networks controlling human β- cell maturation	Shamith Samarajiwa	Imperial College London
Functional Genomics of safety of RNA therapeutics	Ritwick Sawarkar	University of Cambridge
Functional Genomics of SPHKAP Variants in Pancreatic β-Cells: Defining Causal Mechanisms Underlying Type 2 Diabetes	Alejandra Tomas	Imperial College London
Functional Stratification of Gene(s) Variants linked to Neurodegenerative disorders	Miratul Muqit	University of Edinburgh
Genome to Drug: Autonomous Functional Genomics for Personalised Cancer Vaccines	Lennard lee	University of Oxford
Gut instinct: investigating epigenetic regulation and dysregulation using epigenome editing in patient-derived organoids	Matthias Zilbauer	University of Cambridge
How does human genetic variation shape transposable element silencing?	Rebecca Berrens	University of Oxford
How Genetic Diseases of Lipid Metabolism Differently Impact Brain Cell Development and Function	Janet Deane	University of Cambridge
In vivo barcoding-enabled functional CRISPR screens to optimise CAR T cell therapy for cancer	Rahul Roychoudhuri	University of Cambridge
Integrating human genetics and TDP-43 functional genomics to prioritise therapeutic targets in ALS	Ahmad Al Khleifat	King's College London
Linking Alzheimer's Disease genetic loci to metabolic pathways through molecular epidemiology and functional genomics	Abbas Deghgan	Imperial College London
Mapping and functional interrogation of mitochondrial DNA modifications in Parkinson's disease	Katie Lunnon	University of Exeter
Mapping genetic variation in disease through pooled imaging screen	Catherine Tralau-Stewart	University of Cambridge
Mapping Pathological Isoform Switching in Parkinson's Disease for Precision RNA Therapeutics	Laura Parkkinen	University of Oxford
Molecular Characterisation of Early-Onset and Late-Onset Parkinson's Disease Using Multi-Omics	Laura Winchester	University of Oxford
Multiplexed assays of variant effect for sex hormone receptors in hormone- dependent cancer and rare disease	Robert Semple	University of Edinburgh
Nuclear genetic control of tissue-specific mitochondrial function: from human large-scale genomics to focused single-cell CRISPR screens	Alan Hodgkinson	King's College London
One gene, many transcripts; decoding RNA dysfunction in Parkinson's disease using single-cell 'omics, CRISPR, and stem cell models	Sophie L. Farrow	University of Oxford
Prime editing screens in appetite-regulatory neurons	Florian Merkle	University of Cambridge

Project title	Lead supervisor	Institution
Rare variant functional genomics for better understanding, prevention and treatment of musculoskeletal disorders	Harry Green	University of Exeter
Rescue rules: predicting protective and gain-of-function variant combinations in human disease genes	Xianghua Li	King's College London
SHISA6-mediated synaptic resilience in human neurons: From genetic risk to disease-related challenge	Kei Cho	King's College London
The immune repertoire as a window on the life course	Alex Clarke	University of Oxford
The role of ICOS and ICOSL in maintaining tertiary lymphoid aggregates in Discoid Lupus Erythematosus	Deborah Cunninghame Graham	King's College London
Tissue-specific selection of mosaic mutations in development and disease	Anne Goriely	University of Oxford
Uncovering the mechanism of minor spliceosome autoimmune diabetes	Matthew Johnson	University of Exeter
Why do immune killer cells fail in tumours?	Anneliese Speak	University of Cambridge
Wiring the human inhibitory neuron: how MEF2C mutations disrupt excitatory synapse formation onto parvalbumin interneurons	Beatriz Rico	King's College London