PI profile

## Yang Luo

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| A person smiling for the camera  Description automatically generated with medium confidence | **Dr. Yang Luo**  **Titles**: Group Leader  **Location**: Kennedy Institute of Rheumatology  **Department**: Nuffield Department of Medicine  **Group**: Statistical genomics and computational immunology  **Webpage**: https://www.kennedy.ox.ac.uk/team/yang-luo  **Email**: yang.luo@kennedy.ox.ac.uk |

### GMS themes:

[Please retain any that describe your research, deleting others:]

* Genomic and –omic technologies
* Functional genomics
* Genome biology (genomes and genetic variation)
* Genomics of disease
* Genomic analysis (bioinformatics and statistical genetics)
* Application of genomics in the clinic (diagnostics and therapeutics)

### Research Overview

Our group develops statistical and computational methods for understanding the contribution of genetic variations to immune-mediated traits. We focus in particular on the major histocompatibility complex (MHC) region. The MHC region encodes proteins that play a vital role in our immune response. For a vast number of immune-mediated traits, MHC accounts for more genetic heritability than all other genomic variations combined. However, the exact molecular mechanisms behind MHC disease risk are yet unsolved. Knowledge of this would have an impact on subsequent cellular and clinical outcomes. We leverage large biobank data (e.g. UK Biobank and Biobank Japan), gene expression data (e.g. from GTEx), and protein concentrations (e.g. from Omicscience), to understand the precise biological mechanisms through which genetic variation is mediated to modulate risk of immune-mediated traits.

Project areas:

HLA, autoimmune diseases, eQTL, pQTL, single cell RNA-sequencing

### Specific project proposals:

* ‘What is the effect of genetic variation on XXX?’
* ‘Second project title’.

etc.

Please contact directly for further information.

*These pages were reviewed/updated: [insert date]*

Project proposal

# **Title**: [Project title here]

Supervisors: [name and title of relevant individuals]

Wet/dry lab mix (approx): X% wet lab, X% dry lab

### Description:

[Write a ~ half-page page description of the project here].

### Training Opportunities:

[Write a brief description of the training opportunities the project will provide].

### Background reading / references:

Please include references as desired. Suggested format:

* [Surname] [Firstname], [other authors]… (year in bold) . [Title]. [Journal name], [other details]. Available at: [link]

Insert any additional project description(s) on subsequent pages if applicable. Please use the same template and use separate pages for each project.