

## MASTER PROJECT

### About us

In the **Immunobiology Lab**, we integrate translational immunometabolism with fundamental immunobiology at a mechanistic level, by studying immune cell metabolism and linking these findings to key cellular readouts under both steady-state and pathological conditions. Our overarching goal is to uncover how metabolic pathways regulate cellular biology and modulate immune cell function, and how these mechanisms can be harnessed to develop molecular and cellular therapies for autoimmune diseases and tumours.

### Project outline

We recently discovered a non-enzymatic role for phosphoglycerate dehydrogenase (PHGDH), the key enzyme of the serine synthesis pathway, and identified it as an RNA-binding protein (RBP). While this RNA-binding function is critical for immune cell responses, its full dynamic range and precise molecular mechanisms remain to be explored.

**In this project, we will investigate how PHGDH RNA-binding activity operates across distinct cell subsets (both immune and non-immune) under normal and serine-deficient conditions.** To do so, we will leverage a range of in vitro and in vivo models of cellular differentiation and function, combining cutting-edge molecular biology assays that our lab has developed and optimised over the past decade. This work will be embedded within our broader research on PHGDH and conducted in close collaboration with other team members, ensuring constant support and progress.

### We offer

A dynamic environment that fosters networking, learning, and the development of your own ideas.

Mentorship to support career progression, including guidance for future applications after Master's (e.g., PhD).

Hands-on experience with research techniques such as flow cytometry, microscopy, cell culture, and cutting-edge molecular methods, that will be invaluable for your academic career beyond your Master's.

An opportunity to engage in the research publication process, with the potential to be included as a co-author, depending on contribution and involvement.

### Your profile

We are looking for highly motivated students who have great interest in immunology, metabolism, and/or cellular biology and wish to become a member of an international research team. The ideal candidate is expected to be highly motivated to work independently and have the initiative to develop their research project under the guidance of a postdoctoral researcher, Dr. **Yavuz Yazicioglu**, and the Principal Investigator, Prof. **Christoph Hess**.

### How to Apply

Please send us an updated CV, including previous lab experience and a motivation letter to [yfy21@cam.ac.uk](mailto:yfy21@cam.ac.uk) and [christoph.hess@unibas.ch](mailto:christoph.hess@unibas.ch).