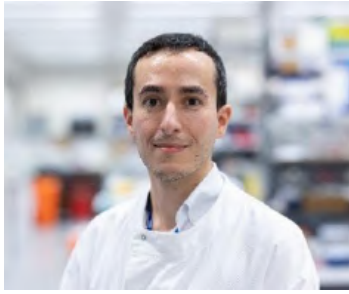


Régis Joulia, Acteria Early Career Prize in Allergology



Dr Régis Joulia obtained his PhD in the lab of Dr. Eric Espinosa and Dr. Salvatore Valitutti at the University Toulouse Paul Sabatier, France in 2016. Following a 5-year postdoctoral position in the laboratory of Prof. Sussan Nourshargh, Queen Mary University of London, he became an independent researcher within the team of Prof. Clare Lloyd at the National Heart and Lung Institute (NHLI), Imperial College, in 2021. Régis has made seminal scientific contributions published in *Immunity*, *Journal of Clinical Investigation*, *Nature Communications* and *Journal of Allergy and Clinical Immunology*. His postdoctoral work was supported by the Foundation for Medical Research (FRM, France), Foundation Bettencourt-Schueller (France), WHRI-ACADEMY International Fellowship, EU Marie-Curie Action (Europe) and the British Heart Foundation (BHF, UK). Régis' current work is funded by an Imperial College BHF CRE Research Fellowship (UK) and the Imperial Biomedical Research Centre (BRC, UK).

Régis' work focuses on the **impact of inflammation on the network of blood vessels**. Indeed, in addition to ensuring supply of oxygen and nutrients, blood vessels are the main reservoir of immune cells that will enter the tissue during inflammation. Due to this constant movement of fluid and cells, blood vessels and their cellular components (i.e. **endothelial cells** and **pericytes**) have the ability to adapt their functions and 3D organisation to every immune response. Central to the activation and remodelling of blood vessels are the resident leukocytes, such as **mast cells**. This critical cell type is capable of detecting threats and is able to swiftly trigger the inflammatory process during allergic responses. During his postdoctoral work, Dr. Joulia demonstrated that the hyperactivation of mast cells in close proximity of blood vessels leads to an aberrant mode of **neutrophil** migration where neutrophils "reverse" back into the blood circulation to disseminate inflammation to other parts of organism such as the lungs.

Recently, Régis discovered that mast cells have a unique ability to interact with pericytes, structural cells surrounding endothelial cells, and their essential role in maintaining blood vessel stability. In addition, his latest research demonstrated that mast cell activation in the context of lung allergic asthma leads to the destabilisation of pericyte functions and disruption of blood vessel organisation in the lungs. Moving forward, Régis' research will focus on **understanding how activation of immune cells impact blood vessel functions in the context of respiratory disorders**. Within the team of Prof. Clare Lloyd, he has developed a trans-disciplinary approach combining spatial imaging and transcriptomic methods with in vivo models and human patient samples to answer challenging questions and unravel new mechanisms driving the progression of lung disorders such as allergy and asthma.

Régis pursues his research on **the impact of respiratory disorders on the lung vasculature** at the National Heart and Lung Institute (NHLI), Imperial College London.

<https://www.imperial.ac.uk/people/r.joulia>