

PhD Position in Immunology: Type 2 Cytokines and Immune Cell Development

We are seeking a **highly motivated and talented PhD candidate** to investigate how type 2 cytokines shape the development and function of the immune system.

Project Overview

Type 2 immunity plays a central role in host defence against parasites and toxins, while also driving prevalent immune-mediated diseases such as eosinophilic asthma. This arm of immunity is orchestrated by key cytokines, including IL-4, IL-5, and IL-13 - now major therapeutic targets of monoclonal antibody-based therapies.

Despite their clinical importance, **how type 2 cytokines influence immune cell development and long-term function remains poorly understood**. Emerging evidence suggests these cytokines actively shape hematopoiesis, including myelopoiesis and lymphopoiesis, thereby influencing immune responses at their origin.

This project aims to uncover fundamental mechanisms linking type 2 cytokine signalling to immune cell development, with potential implications for both immunology and therapeutic interventions.

The project integrates **cutting-edge experimental and computational approaches**, including:

- Transgenic and disease mouse models
- High-dimensional and spectral flow cytometry
- Single-cell transcriptomics and epitranscriptomics
- Analysis of patient-derived samples

You will work at the interface of **immunology, systems biology, and translational research**.

You will:

- Design and perform in vivo and ex vivo experiments in mouse models of type 2 inflammation
- Generate and analyse high-dimensional cytometry data
- Perform integrative bioinformatic analyses of (epi)transcriptomic datasets
- Contribute to collaborative and translational projects involving clinical samples
- Present your work at international conferences and publish in leading journals

Training in animal work (FELASA certification) and bioinformatics will be provided where needed.

Research Environment:

You will join the Laboratory of Cellular and Molecular Immunology, led by Profs. Fabrice Bureau, Nathalie Jacobs and Christophe Desmet at the [GIGA Institute](#) of the University of Liege in Belgium. Our group is embedded within a **vibrant, internationally recognized life sciences institute (>600 researchers)** with direct links to the university hospital, enabling strong translational research in collaboration with clinical departments (Pneumology,

Hematology). The project is a joint effort with Prof. Benjamin G. Dewals' lab of Parasitology at the [FARAH Institute](#) of the Faculty of Veterinary Medicine of the University of Liege and builds on recent high-impact publications from our teams ([Immunity 2024](#), [Sci Immunol 2025](#)).

The institute provides access to **state-of-the-art infrastructure**, including:

- Advanced flow cytometry and cell sorting platforms
- High-throughput single-cell sequencing technologies
- Confocal imaging facilities
- SPF animal facilities and BSL-2/3 laboratories

The institute is located on a green, modern campus within easy reach (20–30 minutes) of Liege city centre. Liege offers **affordable living, a vibrant cultural scene, and excellent connectivity to major European hubs** (Brussels, Köln: 1hr, Paris: 3hrs, London, Amsterdam: 4hrs).

Candidate profile:

We are looking for candidates who:

- Hold (or will soon obtain) a Master's degree in Biology, Medicine, Pharmacy, Biomedical Sciences, or a related field
- Have a strong academic track record and a clear interest in immunology
- Having undergraduate experience in flow cytometry, genomics, or computational biology is a plus
- Demonstrate intellectual curiosity, critical thinking, and rigor
- Thrive in collaborative, interdisciplinary environments

Excellent command of English is required.

What we offer:

- A **high-impact, interdisciplinary PhD project** at the forefront of immunology
- Access to **cutting-edge technologies and training** (wet lab + computational)
- A **supportive, international research environment** with strong mentorship
- Opportunities to present at conferences and build a competitive academic profile
- Competitive salary and full funding for the duration of the PhD
- Flexible start date; applications reviewed on a rolling basis

Recruitment procedure:

Please send a motivation letter including the name of 2 academic references, a copy of your diploma and your curriculum vitae with academic grades to christophe.desmet@uliege.be. We will contact selected candidates for a virtual meeting before a potential on-site visit.