

## Introduction

Our immune system provides defense against microbial pathogens. In contrast, some pathogens exploit our immune system and modulate or evade immune responses that would otherwise eradicate them. This relationship has evolved during our evolutionary life span and for the larger part of mankind. However, not all microbes are pathogenic. Some commensal microbes have an important role in programming and educating our immune system on what is harmful or harmless.

In the past, infectious diseases were the biggest threat and the main cause of death, but in our modern society, infectious diseases are not as deadly anymore, due to vaccines programs, antimicrobial treatments and improved surveillance. Still, novel infectious agents increasingly appear in the human and animal population.

The need for innovative solutions is as urgent as ever, especially since the emergence of antimicrobial resistance in bacteria, viruses, parasites and fungi. Additionally, we are now facing a different epidemic in the form of hyperinflammatory disorders, such as auto-immunity, allergies, asthma, cardiovascular diseases, type 2 diabetes and obesities. The question remains whether we can exploit pathogen / microbe induced mechanisms of immunomodulation to combat these disorders.



*Helminth H. Polygyrus*

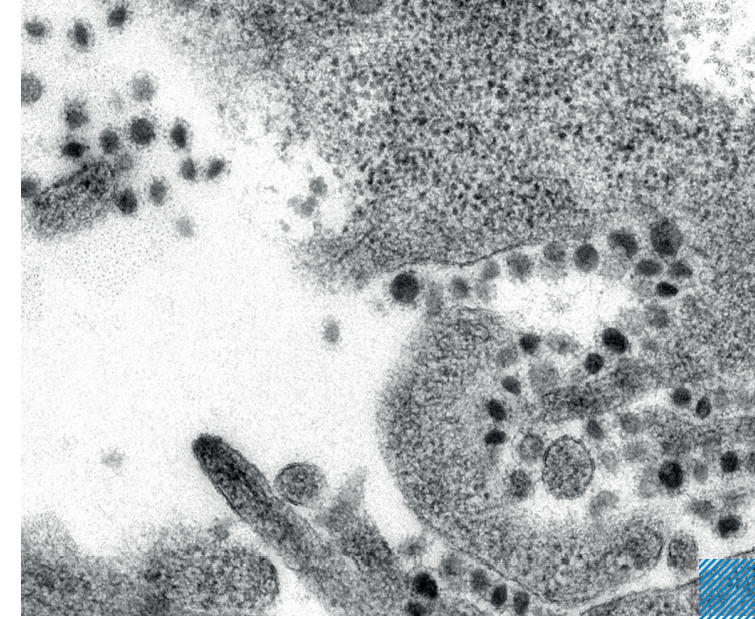
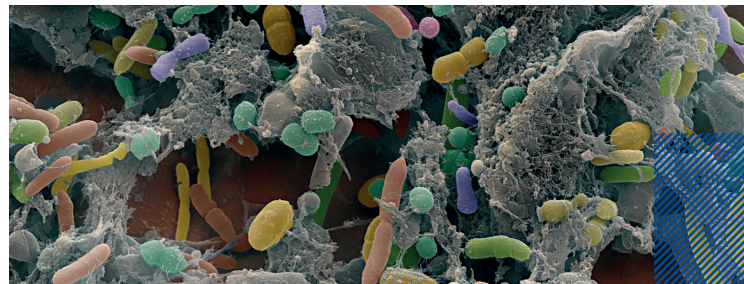
## Organisers

The LUMC Center of Infectious Diseases is collaborating with Edinburgh Infectious Diseases in the design and execution of the Summer School. We will combine elements on immune modulation, host-directed therapies, antimicrobial resistance, biodiversity and One Health, and vaccine development that utilize the strengths of both Leiden and Edinburgh. The course will also feature speakers from the Leiden Bioscience Park (e.g. the vaccine company Johnson & Johnson), as well as from the NCOH initiative on One Health, and a variety of other companies and institutes.

## Main themes and objectives

- Introduction to current standards in (emerging) infectious disease control
- The molecular mechanisms of immune modulation by infectious agents
- Antimicrobial resistance in bacteria, viruses, parasites and fungi and new approaches for treatment of drug resistance
- The role of microbiome in health and disease
- Novel host-directed and personalised therapies for infectious and immune diseases
- Controlled human and (large) animal infection models (combined with entrepreneurship)
- Infectious disease vaccine design and preclinical validation
- Develop a research proposal in small tutor-guided sessions on a topic related the themes of the Summer School

*Gut bacteria communities in a human fecal sample*



*Virus particles on cell surface*

## How to attend the Summer School?

This Summer School is suitable for (bio)medical Master students, PhD students, as well as early stage post-doctoral scientists who are interested in increasing their knowledge on human and animal infectious diseases, immunotherapy for inflammatory diseases, microbiota interventions and host-directed therapies against infectious diseases, clinical trials, and the industrial production of vaccines and antimicrobial therapies.

Applicants are required to provide a CV, some background to the research they are engaged in, a motivation letter and letter of recommendation from their current supervisor.

Applications can be sent to:  
[boerhaavascholing@lumc.nl](mailto:boerhaavascholing@lumc.nl)

Closing date for applications

1 June 2019

Registration fee

€ 200,00

The number of applicants is limited to

30





# Summerschool

Immune modulation in human and animal infections: *Impact on health, disease and therapy*

08-12 JULY 2019

## Summer school 2019

The 5-day Summer School will focus on immunotherapy, vaccinology, microbiota interventions and drug development as intervention for infectious and hyperinflammatory diseases in humans and animals. The overall aim of the course is to give participants an understanding of immunomodulatory mechanisms induced by pathogens and commensals and how to exploit this for the development of interventions, like immunotherapy, host-directed personalized therapies and novel vaccines.



**LUMC**  
Albinusdreef 2  
2333 ZA Leiden  
The Netherlands

T 071 - 526 8500  
E [Boerhaavenascholing@lumc.nl](mailto:Boerhaavenascholing@lumc.nl)  
[www.boerhaavenascholing.nl](http://www.boerhaavenascholing.nl)

