

INSTITUT PASTEUR COURSE - EDUCATION CENTER

# Advanced immunology

Institut Pasteur, Paris, November 19, 2018 to January 11, 2019

The goal of this five-weeks intensive course is to present an in-depth analysis of main themes in cellular and molecular immunology through (1) a selection of theoretical lectures; (2) bibliography seminars; (3) a unique practical course that introduces a variety of state of the art experimental approaches for immunophenotyping of human immune response in biomarker discovery and translational medicine.

## Practical course (3 weeks)

Taking advantage of the *Institut Pasteur Center for Translational Science* and the *"Milieu Intérieur" Laboratory of Excellence project*, the practical course will focus on the characterization of age-dependent differences in the immune response of healthy individuals, in the presence or absence of chronic cytomegalovirus infection. The response of each individual to an array of immune stimuli, targeting innate or adaptive immunity, will be investigated by immunophenotyping of human blood samples, using multi-colour flow cytometry, imaging flow cytometry, single-cell sorting and real-time PCR, simple and multiplex ELISA, measurements of cell metabolism and NGS RNA-sequencing.

## Lectures (2 weeks)

Lectures will cover advanced studies on major immunological topics, such as: development of lymphoid tissue, lymphocyte differentiation, molecular basis of antigen recognition by B and T lymphocytes, lymphocyte homeostasis, tolerance, cellular communication, immune responses, innate immunity, vaccinology and various aspects of immunopathology. Lectures will be given by internationally renowned speakers.

## Bibliography seminars (3 days)

Groups of students, supervised by senior scientists, will be invited to give bibliography analysis on six main immunology subjects. These seminars aim at training students for the analysis and public presentation of a scientific work.

**Online registration:** [www.pasteur.fr/en/advanced-immunology](http://www.pasteur.fr/en/advanced-immunology)

## Co-directors:

Andres Alcover  
Ana Cumano

**Head of practical work:** Milena Hasan

## Practical information:

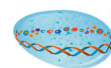
**Deadline** for application: June 15, 2018

**Attendees:** 24 students

**Contact:** [enseignement@pasteur.fr](mailto:enseignement@pasteur.fr)

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Milieu Intérieur  
Vers une médecine personnalisée



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