



Academic years 2022-2026

Master LIVE Coordinator: Prof Christine DELPRAT, christine.delprat@univ-lyon1.fr

Master Sciences, Technologies, Santé Mention Biologie Moléculaire et Cellulaire

Parcours Master 2 Leading International Vaccinology Education

Erasmus+ Mundus Joint Master



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International Vaccinology





Academic year **2023-2024** M2 Teaching Units (TU, 3 ECTS)

Coordinator: Prof Christine DELPRAT, christine.delprat@univ-lyon1.fr



LIVE M2 S3 / S4

OPTIONAL CHOICES

BIO2649M (3 ects) - Vaccinology and infodemiology

2MBIG7 : M2 BMC prcs Leading international vaccinology education LIVE

Teaching unit co-heads:

Immuno Contact: **Prof Christine DELPRAT**, christine.delprat@univ-lyon1.fr
Infectio Contact: **Dr Emilie BOURDONNAY**, emilie.bourdonnay@univ-lyon1.fr

UCBL – M2 BMC

WHAT'S VACCINOLOGY ?

Vaccines are effective **public health interventions** to prevent viral and bacterial **infections** and, more recently, to control **chronic diseases**.

As lived again with Covid pandemic, **new challenges** are always proposed for vaccine developments to fight **emerging diseases** and /or to **target new (sub)populations** defined by their immune competencies or age group or work context.

Vaccinology is the science for **vaccine development & use** with **major safety and public health concerns**.

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WHAT'S INFODEMIOLOGY ?

During **epidemic or pandemic**, we observe a rapid and far reaching **spread of (mis)information**. **Infoveillance** (or surveillance of information) refers to public health concerns to **analyse online behaviours** by collecting, investigating, and visualizing data from various sources on the **Internet in real time** during epidemic or pandemic.

Infodemiology (or epidemiology of information) is the science that manages infoveillance, **actions of communication** and their impacts to **instruct public** with **global health challenges** and induce good **protective behaviours**.

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VACCINOLOGY and INFODEMOIOLOGY

Modules ABC contact: **Dr Emilie BOURDONNAY**, emilie.bourdonnay@univ-lyon1.fr

Modules DEF contact: **Prof Christine DELPRAT**, christine.delprat@univ-lyon1.fr

A MOOC course offers five modules (A-E) to train decision-makers in vaccinology while module F will introduce learners to the new multidisciplinary science called “infodemiology”:

- A. Vaccines, lessons from the past
- B. Vaccine efficacy and safety
- C. Overview of global vaccine access
- D. Vaccines for children, pregnant women, travelers and seniors
- E. Perception, monitoring and impact of immunization on Public Health
- F. In-person and video co-modal conferences on infoveillance and Infodemiology, partnership with WHO



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VACCINOLOGY and INFODEMOLOGY

- ✓ You will understand **basic clinical and social aspects of vaccinology** including: the different **kinds of vaccines** that exist and how they work, **herd immunity** and correlates of **protection**, how the vaccine is developed and how its **quality** and **safety** is assessed, challenges of vaccine **access** in the world, importance of vaccination for **different ages** and **social categories**, disease eradication and outbreaks, how **vaccination campaigns** are organized.
- ✓ Moreover, you will develop **decision-making skills** to: **discern quality information** from unreliable source, perform **risk-benefit analysis**, assess clinical **data** on vaccine safety and efficacy, exert good clinical and manufacturing **practices** thanks to a variety of **interactive exercises, videos and other resources available in this course**.
- ✓ Finally, you will discover the power of **facts, rumors, fears & syndromic surveillance** for **global health** infodemiology management.

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VACCINOLOGY and INFODEMOLOGY

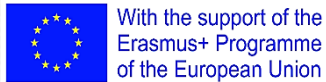
For the 3 ECTS certification, the parameters of the assessment methods will be:

- ✓ online, synchronous, written (+/- mini-video)
- ✓ 2 hour duration
- ✓ 3 sessions per year (January - May - June) so that students can access a second session if needed.
- ✓ planned in 4 consecutive sequences of 30 minutes
- ✓ with reading, survey, collaborative work, decisions and communication.

More details will be explained to the learners and will depend on the actual number of learners to remain within correction times compatible with the survival of the teaching unit heads because this UE is displayed in 11 courses.

UCBL – M2 BMC – BIO2649M (3 ects) VACCINOLOGY AND INFODEMOLOGY

INVITED SCHOLARS FUNDED BY EMJM LIVE



VACCINOLOGY AND INFODEMOIOLOGY

In charge: Emilie BOURDONNAY and Christine DELPRAT

emilie.bourdonnay@univ-lyon1.fr

UE BIO2649M – Distance learning (30 hours)

Organization of the TU

6 Modules : 5 Modules constituting the MOOC « Decision making in Vaccinology » and a final videoconference module.

100% of the content is in English

Optional TU

M1 Molecular and Cellular Biology, M1 Molecular Biology Biochemistry, M1 LIVE (S2)

TU assessment

3 ECTS: 1,5 ECTS MOOC Modules and 1,5 ECTS for the videoconference module

Different formats of activities to assess your knowledge and skills through quizzes, case studies as well as decision-making activities.

Remote exam (2h), in English

Discussed subjects

5 Modules constituting the MOOC « Decision making in Vaccinology » as such:

1. Module A: Cracking the Vaccine's Code
2. Module B: Vaccine Efficacy and Safety
3. Module C: Overview of Global Vaccine Access
4. Module D: Vaccines for Whom
5. Module E: Impact of Immunization on Public Health

Using your knowledge of immunology and infectiology, this unit will develop your ability to understand the context of a vaccine-preventable disease, to make communication (written and oral) and public health management decisions.

MOOC « Decision making in Vaccinology »: teaser



The latest video conferencing Module

6. Module F: Lectures on infodemiology and infoveillance

Infodemiology (or information and epidemiology) refers to the rapid and widespread dissemination of misinformation during an epidemic or pandemic. An infodemic is too much information, including false or misleading information in digital and physical environments during an outbreak.

Infoveillance refers to public health concerns to analyze online behavior by collecting, analyzing, and visualizing data from various sources on the Internet in real time during an epidemic or pandemic.

Bonus: Conferences on the new concepts of Infodemiology and Infoveillance will be organized. Speakers will be invited based on their excellence, supported by the World Health Organization.

Three pillars constituting Module F:

1. Introduction to the concepts:
 - § Introduction to infodemiology
 - § Introduction to infoveillance & the infodemic management
 - § Applying infodemiology to increase vaccine uptake to reach public health objectives
2. How infodemiology has co-evolved with the major social networks ?
3. Infodemiology practice at UNICEF:
 - § Tips to protect yourself from the Infodemic
 - § Field guide for managing vaccine misinformation
 - § The main skills of infodemic managers

Knowledge and skills to be acquired

- i) Knowledge of immunology, vaccines as well as Infodemiology and Infoveillance.
- ii) Communicate, orally and in writing, in a foreign language
- iii) Identify, select and critically analyze various specialized resources, and then synthesize those informations in order to broadcast them.
- iv) Assess your ability to make safe decisions for public health management.