

7th World Congress on

# Virology- Immunology Vaccines

June 18-19, 2026 | New York, USA

Volume: 17

## Virus-Host Interactions and Immune Responses in Emerging Viral Infections

### Olivier Schwartz

Institut Pasteur, France

Understanding the complex interactions between viruses and host immune systems is fundamental for developing effective antiviral therapies and vaccines. This presentation examines the molecular mechanisms by which emerging viruses invade host cells, evade immune defenses, and establish infection. Particular attention will be given to innate and adaptive immune responses, inflammatory pathways, and viral immune evasion strategies.

Recent advances in cellular imaging, immunology, single-cell sequencing, and systems biology have revealed critical host factors involved in viral replication and disease progression. The presentation highlights how these discoveries are supporting the development of targeted antiviral therapies, monoclonal antibodies, and improved vaccine strategies. The integration of immunological research with clinical studies is accelerating translational approaches that improve patient outcomes during viral outbreaks.

Future directions include precision immunology, host-directed therapeutics, and collaborative international research aimed at combating emerging infectious diseases.

### Biography

Olivier Schwartz is Head of the Virus and Immunity Unit at Institut Pasteur, France. His research focuses on virus-host interactions, viral immunology, and emerging infectious diseases. He has made important contributions to understanding immune responses against highly pathogenic viruses.