**Emerging Infectious diseases and related environmental, clinical**

**and translational challenges**

**Coimbra, Portugal, 27th of April 2021**

This international conference organised by the Portuguese EU presidency and EMBL will focus on key aspects that have emerged during the last years but which became even more pressing during the SARS-CoV-2 pandemic in 2020. Despite significant advances in knowledge and treatment, infectious diseases remain a leading cause of death worldwide. The speed with which infectious diseases spread today due to international travel is unprecedented. Climate change, loss of living surfaces, and decreasing biodiversity are some pressing and of immense concern issues, which in addition have strong repercussions for public health and the global economy. Fundamental research can help understand and address these phenomena and their interconnectedness by studying them on multiple levels, from molecules to cells to tissues, organisms, populations, and ecosystems.

The SARS-CoV-2 pandemic has exposed the severity of infectious diseases, and the impact they can have on public health and global economy. Scientific research can help to dissect infectious agents and to identify treatment and vaccines in record times, as recent experience has shown. Similar levels of political support could propel scientific research to tackle other infectious agents, known for much longer and which continue to rampage developing countries, and to address in time looming public health threats, such as that of antimicrobial resistance. Yet, new infectious agents and epidemics emerge constantly and catch us by surprise. The 21st century has provided ample evidence for this, even before SARS-CoV-2: SARS-CoV-1, MERS, Zika, Ebola to name a few. Therefore, understanding the sources and causes for pathogen (re-)emergence is equally important. Dissecting the complex inter-relationships between societal and environmental changes and the spread, evolution, and transmission of pathogens is critical to anticipate emerging infectious diseases. Only through fundamental research that transcends several disciplines can such global challenges for humanity be addressed.

This conference aims to bring together leading international experts in molecular biology of viruses, infectious diseases, immunology and vaccine development to showcase the progress that the scientific community has achieved in tackling the SARS-CoV-2 pandemic and discuss the importance of the scientific infrastructure and funding for research. A particular focus will be on the progress made in vaccine development: from the success story linked to new technological advances in the field to safety aspects and the importance of gaining public trust for the vaccines to be effective. Lessons learnt and future planning for preparedness in case of emergence of unknown infectious diseases will also be part of the agenda. For this, a discussion in the form of a round table for the general public will touch upon the pressing issues of public health that have emerged as a result of the SARS-CoV-2 pandemic.

**Audience:** Broad scientific and medical audience, science journalists, policy makers;

**Agenda**: 1 day, 4 sessions with 20 mins talks ending with round table

**Sessions**: Molecular & cell biology of infection; Immunity and host genetics; Epidemiology; Vaccines.