

A lecture series offered by the Jena Alliance "Life in Focus"

Guest Professor

PROF. PASCALE COSSART

Institut Pasteur, Paris



After studying chemistry in Lille and Washington DC, Pascale Cossart arrived in 1971 for her PhD at the Pasteur Institute where she pursued her whole career. She first studied DNA-proteins interactions and their specificity, then undertook in 1986 to study the molecular and cellular basis of host-pathogen interactions, taking as a model the intracellular bacterium *Listeria monocytogenes*. Her research led to multiple discoveries, in particular the molecular and cellular mechanisms allowing bacterial entry into cells, crossing of the intestinal and feto-placental barriers by the bacterium, and also factors mediating bacterial actin-based motility as well as several novel mechanisms of gene regulation, in particular the discovery of the first thermo-sensor regulating expression of virulence factors and of riboswitches involved in antibiotic resistance. She discovered the regulatory role of cellular mitochondria in infection and unveiled several host post-translational modifications controlling infection, in particular histone modifications, paving the way to new targets against bacterial infections.

Cossart's contributions were recognized by international prizes e.g. the Robert Koch prize, the Jeantet prize or the Balzan prize. She is a member of NAS and NAM, of the Royal Society, the Leopoldina and the French Academy of sciences for which she was Secrétaire perpétuel from 2016 to 2022. She was a visitor at EMBL- Heidelberg in 2022 and 2023. She was in May 2024 a visiting professor at Harvard Medical School (USA).

HOW WE RAISED A BACTERIUM TO THE RANK OF A MODEL SYSTEM : THE *LISTERIA* PARADIGM.

PROF. DR. PASCALE COSSART

Wednesday, June 19, 2024, 3pm
Leibniz-HKI, Seminar room Louis Pasteur
Beutenbergstraße 11a, 07745 Jena

In nearly four decades, using several multidisciplinary approaches and cutting-edge technologies we have unveiled a number of sophisticated mechanisms used by the bacterial pathogen *Listeria monocytogenes* to survive in the environment and/or infect mammals. Our results have led to a series of new concepts in infection biology, in fundamental microbiology -in particular RNA mediated regulation-, in cell biology and also in epigenetics, paving the way to the understanding of the basis of many other infections. An historical perspective with most striking findings will be presented.

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