DIFFUSIBLE SIGNALS

Biosketches of the speakers

Prof. Dr. Yanjie Chao

Institute Pasteur of Shanghai, China

Dr. Chao is a molecular biologist and microbiologist who obtained his PhD at the Max-Planck Institute for Infection Biology and Humboldt University in Berlin, Germany in 2014. He had been a postdoctoral associate with Jörg Vogel at the University of Würzburg, Germany (2014-2016), and with Andrew Camilli at the Howard Hughes Medical Institute and Tufts University, Boston, MA, USA (2016-2020). Since 2020 Dr. Chao leads his own lab at the Institut Pasteur of Shanghai, Chinese Academy of Sciences, China.

Dr Chao's research interest is to understand how pathogenic and commensal bacteria control their gene expression to colonize the host and cause disease, especially the gene regulations at the post-transcriptional level mediated by RNA-binding proteins and small noncoding RNAs (sRNAs).
Using high-throughput sequencing and systems-biology approaches, he has recently identified a novel class of sRNAs that are derived from the 3'-UTR of bacterial mRNAs (see Chao *et al*, 2012, 2016, 2017; Wang *et al*, 2020). He investigates the general mechanisms dictating the fate of cellular RNAs from transcription to translation and to degradation, but also the different aspects of bacterial pathogenesis involving high-throughput genetics and translational medicine.

DIFFUSIBLE SIGNALS

Biosketches of the speakers

Prof. Dr. Jose Bangoechea

Queen‘s University Belfast, UK

Prof. Dr. Bengoechea, who originated from and started his scientific career in Spain, holds the chair in Molecular Microbiology at Queen’s University, Belfast, UK, since 2013. In addition, he is the founding director of the Wellcome-Wolfson Insitute for Experimental Medicine (WWIEM) since 2016. His group is one of the world leaders in *Klebsiella pneumoniae* infection biology, a pathogen that has been singled out as an "urgent threat to human health" by WHO. Research from his lab has led to a paradigm shift in the understanding of the virulence of the pathogen, and has provided the foundation for new treatment against this microbe.

His long term goal is to decipher the network of interactions between pathogenic bacteria and various cell types contributing to the onset of the innate immunity responses by applying a multidisciplinary approach interfacing immunology, cell biology, molecular microbiology, and functional genomic approaches. He is keen in defining the mechanisms by which pathogens manipulate for their own benefit early innate immune responses. His work involves the use of animal and tissue culture models (macrophages, and epithelial cells in 2D and 3D cultures), and translational models of research (mice, ex vivo lung perfusion model).

DIFFUSIBLE SIGNALS

Biosketches of the speakers

Prof. Dr. Jeffrey Schorey

University of Notre Dame, Indiana, USA

Jeff Schorey obtained his Ph.D. in 1992 from the University of Texas Health Science Center, San Antonio, Texas. He did his Postdoc at the Washington University School of Medicine, St. Louis, Missouri where his work focused on *Mycobacterium avium*. Since 1998, Prof. Schorey has been a faculty member at the University of Notre Dame, South Bend, Indiana and he is presently the George B. Craig Jr. Collegiate Professor of Biological Sciences.

His research focuses on defining the molecular interaction between mycobacteria and the macrophage. Ongoing studies aim at characterizing the macrophage signaling pathways activated upon infection by pathogenic and non-pathogenic mycobacteria species to help identify the virulence mechanisms used by pathogenic mycobacteria.

Another major area of investigation in the Schorey laboratory is deciphering the role of secreted extracellular vesicles in disease transmission. Using cell and animal models, his lab was the first to show that some mycobacterial components can be released from infected cells via small membrane vesicles called exosomes, and exosomes in turn can modulate the host's innate and acquired immune response. His group continues to define the importance of exosome biogenesis in *M. tuberculosis* and *M. avium* pathogenesis as well as leverage this knowledge to develop new TB diagnostics and vaccines.