



AUSTRIAN
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JANUARY 19, 2023
START: 16:30
AUSTRIAN ACADEMY OF SCIENCES
FESTIVE HALL
DR. IGNAZ SEIPEL-PLATZ 2
1010 VIENNA

ACADEMY LECTURES

RUTH S. NUSSENZWEIG LECTURE



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ANTIBODY RESPONSES TO VACCINATION AND INFECTION IN MICE AND HUMANS

MICHEL NUSSENZWEIG

The Rockefeller University and Howard Hughes Medical Institute

WELCOME

HEINZ FASSMANN

President of the Austrian Academy of Sciences

As initially pointed out by Landsteiner in his work on haptens, immune systems are able to respond to a very diverse group of potential pathogens. Two molecular and cellular mechanisms underlie the diversity, V(D)J recombination during lymphocyte development and somatic hypermutation. This lecture will focus on how the study of human immune responses to SARS-CoV-2 infection and vaccination revealed an additional feedback mechanism controlled by antibodies that fosters an additional layer of diversification that is protective against disease caused by SARS-CoV2 variants.

Michel Nussenzweig was born in Sao Paulo, Brazil. During his PhD with Ralph Steinman at Rockefeller University, he discovered that dendritic cells are antigen presenting cells. He returned to Rockefeller University in 1990 as an assistant professor and Howard Hughes Investigator to head an independent laboratory. He was promoted to professor in 1996 and holds the Zanvil A. Cohn and Ralph M. Steinman Chair of Immunology. Nussenzweig's laboratory studies the molecular aspects of the immune system's innate and adaptive responses using a combination of biochemistry, molecular biology, and genetics. In his work on adaptive immunity, he focuses on B lymphocytes and antibodies to HIV-1, while his studies of innate immunity focus on dendritic cells. His work led to the rapid development of new antibody-based therapies for infections by HIV and the novel SARS-CoV-2 coronavirus. He is member of the OeAW's high-ranking research board, and has received numerous awards and prizes including the Robert Koch Prize, and the Sanofi-Pasteur Award. He is a member of the American Academy of Arts and Sciences, the US National Academy of Medicine and the US National Academy of Sciences.

Named after the Austrian-Brazilian immunologist, the Ruth S. Nussenzweig Lectures examine topics from the fields of immunology, vaccine research, medicine, parasitology and microbiology. By introducing this lecture series, the Austrian Academy of Sciences aims at honoring a great scientist, Michel Nussenzweig's mother, for her seminal work on the development of a malaria vaccine and, at the same time, to commemorate an Austrian citizen who was forced to leave her home country to escape from Nazi terror.

Please register at: www.oeaw.ac.at/anmeldung/akademievorlesungen

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