



Nicole Doria-Rose

Vaccine Research Center (VRC) of
the National Institutes of Health

Talk title:

Development of COVID-19 Vaccines at the
NIH Vaccine Research Center



Mattias Forsell

Umeå University

Talk title:

The immunology of COVID-19 vaccination:
from basic mechanisms to population-based
responses

Wednesday, March 23, 2022, at 15:15-16:45

Online via Zoom

Dr. Nicole Doria-Rose received her PhD in Biochemistry, Molecular, and Cell Biology from Cornell University, and did a postdoctoral fellowship with Dr. Nancy Haigwood at the Seattle Biomedical Research Institute, developing DNA vaccines for HIV. In 2006 she moved to the NIH, and is currently the Chief of the Humoral Immunology Core at the Vaccine Research Center. Her program evaluates the immune responses to novel immunogens, and investigates the clinical use of broadly neutralizing antibodies for prevention of HIV-1. In 2020 her group developed a neutralization assay to measure antibodies in COVID vaccine recipients, and has used this method to assess the potency and durability of mRNA vaccines and the impact of virus variants.

Mattias Forsell is Associate Professor of Immunology and Senior Lecturer in Biomedical Laboratory Sciences at Umeå University. Since the start of his research career at Karolinska Institutet and the National Institutes of Health, USA, he has been focused on studies of basic and applied B cell responses to virus infection and vaccination, a line of research he has continued to pursue at Umeå University. His laboratory is currently fully dedicated to studies on COVID-19 vaccination.

Abstracts



Nicole Doria-Rose

Talk title:

Development of COVID-19 Vaccines at the NIH Vaccine Research Center

Since the onset of the COVID-19 pandemic, the Vaccine Research Center (VRC) of the National Institutes of Health, USA has pioneered the use of mRNA vaccines. The VRC leveraged previous work on the coronaviruses that cause SARS and MERS, and an existing partnership for mRNA vaccines, to rapidly develop and test the mRNA-1273 vaccine. We developed antibody binding and neutralization assays that allowed the assessment of immune responses in animal models and the first-in-human clinical trials of mRNA vaccines. Continuing efforts look at the durability of vaccine-induced antibodies over time, effect of boosting doses, and the impact of variants such as delta and omicron. Insights from this work have enabled authorization of an mRNA vaccine and impacted health policy in the United States.

Mattias Forsell

Talk title:

The immunology of COVID-19 vaccination: from basic mechanisms to population-based responses

The use of several different strategies to vaccinate individuals against COVID-19 has provided ample opportunities to expand on our knowledge of the human immune response to vaccination. By the use of a dynamic platform for translational research at Umeå University, we have been able to rapidly respond to the everchanging conditions of COVID-19 vaccination, with aim to address questions of high interest for Public Health Agencies and for future vaccine development. Here, we will demonstrate recent findings from two of our focus areas; the immunology of heterologous vaccine regimens and a nation-wide prospective open cohort study of mRNA vaccination at Swedish Elderly Care Homes. Within thin the context of these studies, we will discuss the potential benefits and caveats to how the immune system responds to derivatives of the SARS-CoV-2 Spike protein and what this may mean for the induction of immunity against future variants of concern.