



KNVM Virology News

Dear fellow virologist,

In 2023, the **DAVS** will (hopefully) be held face-to-face at the OBA again on Friday March 10. Abstract submission is now [open](#) for talks and posters.

Abstract submission is also [open](#) for the **Scientific Spring Meeting** of the KNVM/NVMM, which will be held at Papendal on April 4 and 5.

Researchers from AUMC are **performing a survey** to investigate *in vitro* and *in vivo* models used in virology research in the Netherlands and which factors play a role in model choice. Your input is very much appreciated!

The board of the Virology division of the KNVM
(Emmanuel Wiertz, Jolanda Smit, Ronald van Rij, Bart Haagmans,
Katja Wolthers, Martijn Langereis, and Puck van Kasteren)

Virology events

Nov 17, 2022 Hendrik de Buhr
Utrecht | Lebbink/Wiertz

Dec 1, 2022 Maya Keuning
AUMC/UvA | Pajkrt

Dec 7, 2022 Thomas Langerak
EUR | Rockx/Koopmans/van Gorp

Jan 23, 2023 Andres Ramirez
RUG | Smit

Feb 13, 2023 José Rodriguez
RUG | Smit

May 4-7, 2023
ECV, Poland



Virology Double-Interview

Dhanushika Ratnayake
Postdoctoral researcher
Tanenbaum Group
Hubrecht Institute

Kyle Mason-Jones
Junior group leader
Terrestrial Ecology
NIOO-KNAW



What is your main research focus?

My research focuses on the very early stages of viral infection and aims to gain an understanding of virus and host cell factors contributing either to a successful infection or halting infection progression. Specifically, I work on respiratory syncytial virus (RSV), and develop single-molecule imaging technologies that allow identification of individual viral genomes, mRNA and protein to visualise viral infection dynamics in real-time in living cells.

What is your favourite virus?

I find the equilibrium that is established between a virus and host during persistent viral infections utterly fascinating. Especially when this relationship has positive implications for the host. My favourite example is the non-pathogenic Human pegivirus (HPgV-1, also known as GB virus C/ hepatitis G virus). HPgV-1 can persist benignly in healthy individuals and afford significant beneficial clinical outcomes in diseases such as those caused by HIV-1, hepatitis C virus and Ebola virus by a diverse array of protective mechanisms.

Why is your research important?

RSV is an important human pathogen which can cause severe disease in infants and vulnerable adults. While extensive research has taught us much about RSV, there are still aspects of its pathogenesis that remain elusive. Gaining a detailed mechanistic understanding of the RSV viral life cycle, especially the early stages of infection (when the cell is not completely dominated by viral RNA and proteins), may yield insights about this virus that can potentially be harnessed to aid in developing effective therapeutic interventions.

What is your main research focus?

Bacteriophages can have an enormous influence on bacterial communities, but their roles in soil ecology are virtually unknown. I research how soil bacteriophages influence bacterial growth and death, and what that means for soil ecosystem functions like carbon sequestration and plant nutrient supply.

What is your favourite virus?

Ironically it's not a bacteriophage. I think the fungus-infecting Narnavirus genus is beautiful for its simplicity: RNA coding just a replicase. For me that exemplifies the fascinating, bizarre borderland between biology and chemistry in which viruses exist.

Why is your research important?

Soils play a major role in some of the most pressing challenges facing society: water quality, food production, climate protection and more. We can take better care of soils if we understand how soil microbial communities work, and why they respond to our management (or mismanagement) in the ways they do. We won't reach that understanding if we continue to neglect soil viruses.

Recent publications

Aguilar Briseño, J. A., Ramos Pereira, L., van der Laan, M., Pauzuolis, M., Ter Ellen, B. M., Upasani, V., Moser, J., de Souza Ferreira, L. C., Smit, J. M., & Rodenhuis-Zybert, I. A. (2022). TLR2 axis on peripheral blood mononuclear cells regulates inflammatory responses to non-infectious immature dengue virus particles. *PLoS pathogens*, 18(10), e1010499. doi.org/10.1371/journal.ppat.1010499

Boezen, D., Ali, G., Wang, M., Wang, X., van der Werf, W., Vlak, J. M., & Zwart, M. P. (2022). Empirical estimates of the mutation rate for an alphabaculovirus. *PLoS genetics*, 18(6), e1009806. doi.org/10.1371/journal.pgen.1009806

Rosu, M. E., Lexmond, P., Bestebroer, T. M., Hauser, B. M., Smith, D. J., Herfst, S., & Fouchier, R. A. M. (2022). Substitutions near the HA receptor binding site explain the origin and major antigenic change of the B/Victoria and B/Yamagata lineages. *Proceedings of the National Academy of Sciences of the United States of America*, 119(42), e2211616119. doi.org/10.1073/pnas.2211616119

