#4, August 2019

KNVM Virology News

Dear fellow virologist,

Dutch arbovirology is doing well, with two major grants having been awarded recently to the Netherlands Center for One Health (NCOH) from the NWA program and to Wageningen Bioveterinary Research from the CEPI project. Both projects received considerable attention in national media, for example here (in Dutch). As of July 2019 Ronald van Rij (RadboudUMC) has been appointed professor in Experimental Virology and Wim van der Poel (WUR) was inaugurated as professor of Emerging and Zoonotic Viruses last June, congratulations to both! Furthermore, we can look back on an excellent Keystone plus-strand RNA meeting with many Dutch contributions, organized by Frank van Kuppeveld and Andrea Gamarnik.

This fourth edition of the newsletter contains short interviews with Debby van Riel (ErasmusMC) who was recently promoted to associate professor and Vera Ros (WUR) who was recently awarded a VIDI grant. Finally, don't hesitate to let us know if you have any suggestions for future editions!

The board of the Virology division of the KNVM
(Emmanuel Wiertz, Jolanda Smit, Jeroen Kortekaas, Hélène Verheije, Bart Haagmans, Katja Wolthers, and Puck van Kasteren)

Upcoming events

Sep 12, 2019
Vaccine Symposium
UMC Utrecht

Oct 18, 2019
Thesis defense Liz van Erp van Baarle/de Groot
Radboud Univ. Nijmegen

May 10-14, 2020
Nidovirus meeting
Egmond aan Zee

Virology Double-Interview

Debby van Riel
Associate professor
Dept. of Viroscience
Erasmus MC

What is your main research focus?

The pathogenesis of respiratory virus infections, such as influenza A viruses and Enterovirus D68, with a focus on systemic responses and involvement of extra-respiratory tissues such as the central nervous system and heart.

Who inspires you in your scientific career?

I have been fortunate to be inspired by many different people during the different stages of my career. These people were not only inspirational scientifically, but also - or maybe especially - in the development of my soft skills. In addition, the enthusiasm, curiosity and teamspirit of the people within our group have a motivating effect on me.

How do you engage with the lay public?

Science communication is a challenge, but I realize the importance of it. With the Young Erasmus Academy we started a graphic story pilot project to visualize our research in a cartoon.

To check out my cartoon:
twitter.com/DebbyvanRiel/status/1135621592535437312

Vera Ros
Assistant professor
Laboratory of Virology
Wageningen University & Research

What is your main research focus?

I study interactions between insects and insect-specific viruses. Some viruses manipulate insect behaviour to enhance their own transmission, and I aim to clarify which viral genes modify host behaviour and which host pathways are involved. In addition, I investigate the role of viral invasion of insect brains in behavioural manipulation. Furthermore, I study covert (persistent or latent) virus infections in insects. Numerous new viruses are discovered in insects, however, many of these do not cause any disease but reside in a covert state. How do these viruses remain 'undercover', and what is the impact of such infections throughout the insect's lifecycle?

What is your favourite virus?

Baculoviruses, these cause 'zombie-behaviour' in caterpillars. Infected caterpillars become hyperactive, and climb to elevated positions on plants, just prior to death. The caterpillars then liquefy, releasing the virus progeny in the field, which is then consumed by other caterpillars. An amazing example of viruses manipulating host behaviour.

Why is your research important?

Covert viruses are increasingly recognized as a major problem in mass rearing of insects, currently a booming industry. Conditions linked to intensive rearing may trigger the transition from covert to overt virus infections, leading to major disease outbreaks. To prevent such problems, a thorough understanding of covert infections is crucial.

Recent publications

Merat SJ, Bru C, van de Berg D, Molenkamp R, Tarr AW, Koekkoek S, Kootstra NA, Prins M, Ball JK, Bakker AQ, de Jong MD, Spits H, Beaumont T, Schinkel J. 2019. Cross-genotype AR3-specific neutralizing antibodies confer long-term protection in injecting drug users after HCV clearance. J Hepatol. doi: 10.1016/j.jhep.2019.02.013

Widagdo W, Okba NMA, Li W, de Jong A, de Swart RYL, Begeman L, van den Brand JMA, Bosch BJ, and Haagmans BL. 2019. Species-specific co-localization of MERS-CoV attachment and entry receptors. J. Virol. doi:10.1128/JVI.00107-19

Melia CE, Peddie CJ, de Jong AWM, Snijder EJ, Collinson LM, Koster AJ, van der Schaar HM, van Kuppeveld FJM, Bárcena M. 2019. Origins of Enterovirus Replication Organelles Established by Whole-Cell Electron Microscopy. MBio. doi: 10.1128/mBio.00951-19

de Wilde AH, Boomaars-van der Zanden AL, de Jong AWM, Barcéna M, Snijder EJ, Posthuma CC. 2019. Adaptive mutations in replicase transmembrane subunits can counteract inhibition of equine arteritis virus RNA synthesis by cyclophilin inhibitors. J Virol. doi: 10.1128/JVI.00490-19