



KNVM Virology News

Dear fellow virologist,

It was recently [announced](#) that six talented researchers are awarded a **VENI grant** to work on a virology-related subject for the coming years: Zach Armstrong (Leiden University), Y. Cong (Groningen University), Carmen Embregts (Erasmus MC), Vera Kemp (LUMC), Paula Dalcin Martins (Radboud University), and Daniel Hurdiss (Utrecht University). Congratulations to all! See below for a short interview with Paula and Daniel.

If you have an interest in **virus ecology**, make sure to check out the [NAVE initiative](#).

The next **DYVS** is scheduled for Wednesday February 16th: Sels Bots (LUMC) and Daryl Geers (Erasmus MC) will present their work on oncolytic viruses and SARS-CoV-2 vaccine-induced immunity, respectively. Make sure to [register](#) to receive updates and the meeting link.

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

Feb 16, 2022

[DYVS](#)

March 3, 2022

[DAVS](#)

March 11, 2022

[NAVE meeting](#)

April 20, 2022

[DYVS](#)

June 22, 2022

[DYVS](#)



Virology Double-Interview

Paula Dalcin Martins

Postdoc

Dept. of Microbiology

Radboud University Nijmegen

Daniel Hurdiss

Assistant professor

Veterinary Medicine

Utrecht University



What is your main research focus?

For the past 8 years, I have researched environmental factors that impact microbially-regulated greenhouse gas emissions from [marine](#) and [terrestrial](#) ecosystems. My VENI research will focus on a largely unaccounted factor - viruses! I will investigate how viruses that infect soil microorganisms influence greenhouse gas emissions from agricultural peat soils in the Netherlands.

Why is your research important?

The problem. Due to intensive agriculture, soils are losing organic carbon - vital for plants by retaining water and nutrients - via microbial activity of organic matter degradation into greenhouse gases. Global warming is expected to accelerate soil carbon loss, leading to decreased crop productivity and increased greenhouse gas emissions - which could further accelerate global warming.

The solution. By unraveling how viruses impact microorganisms regulating soil greenhouse gas emissions, my VENI research aims to find novel ways to retain soil carbon and decrease soil greenhouse gas emissions.

Of which accomplishment are you most proud?

I was born and raised in the violent, poor countryside of Brazil, and today I am a scientist - my childhood dream! - in one of the leading research groups in my field in the world.

What is your main research focus?

I use cryo-electron microscopy, biochemistry and molecular virology to understand how viruses interact with their cellular receptors, replicate their genomes and assemble progeny virions. Ultimately, I aim to use these mechanistic insights to develop novel antivirals which can interfere with these processes. Currently, I am trying to understand the structure and function of the enterovirus 2C protein which is an attractive target for antiviral drug development.

What is your favourite virus?

That's a tough question, but I would have to say BK polyomavirus (BKV), the first virus I determined the structure of during my PhD. From a clinical perspective, BKV is very important because it is a major cause of kidney transplant rejection. From a structural virologist's point of view, BKV has a very interesting capsid architecture. The remarkably porous virion is composed of donut-shaped 'building blocks' linked together via protein 'tentacles'. It's ironic that my favorite virus is a double-stranded DNA virus when I now primarily work on RNA viruses!

Of which accomplishment are you most proud?

During the COVID-19 pandemic, my UU colleagues and I worked together with a company called Molecular Partners to develop a DARPIn-based therapeutic targeting the SARS-CoV-2 spike protein. This molecule, now named ensovibep, has remained potent against all known variants of concern, and has recently been shown to reduce the risk of severe/fatal disease by 78% in a phase 2 clinical trial. Seeing something you contributed to make its way to sick patients is incredibly exciting and rewarding!

Recent publications

Hurdiss DL, El Kazzi P, Bauer L, Papageorgiou N, Ferron FP, Donselaar T, van Vliet ALW, Shamorkina TM, Snijder J, Canard B, Decroly E, Branciale A, Zeev-Ben-Mordehai T, Förster F, van Kuppeveld FJM, Coutard B. Fluoxetine targets an allosteric site in the enterovirus 2C AAA+ ATPase and stabilizes a ring-shaped hexameric complex. *Sci Adv.* 2022 doi: [10.1126/sciadv.abj7615](https://doi.org/10.1126/sciadv.abj7615).

Hasiów-Jaroszewska B, Boezen D, Zwart MP. Metagenomic Studies of Viruses in Weeds and Wild Plants: A Powerful Approach to Characterise Variable Virus Communities. *Viruses.* 2021 doi: [10.3390/v13101939](https://doi.org/10.3390/v13101939).

Petersen JM, Bézier A, Drezen JM, van Oers MM. The naked truth: An updated review on nudiviruses and their relationship to bracoviruses and baculoviruses. *J Invertebr Pathol.* 2022 doi: [10.1016/j.jip.2022.107718](https://doi.org/10.1016/j.jip.2022.107718).

