



# 11th Annual BELVIR Symposium

Thursday December 14, 2023 - Palace of the Academies, Brussels



- 8:00 - 8:45 Registration
- 8:45 - 9:00 Welcome address and General Assembly of VZW/ASBL BELVIR  
Lieve Naesens (Chair of BELVIR)

- 9:00 - 9:45 **KEYNOTE LECTURE**  
**Host range barriers to influenza pandemics**  
Wendy Barclay (Imperial College London)



*Chair: Lieve Naesens (KU Leuven) & Benoît Muylkens (UNamur)*

## Session I **Viral genomics and evolution**

*Chairs: Owen Donohoe (ULiège) & Simon Dellicour (ULB)*

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|-------------|---------------|--|
| Short talks | 9:45 - 10:00  | <b>Ulcerative colitis patients possess an unstable gut virome, and faecal microbiota transplantation only results in a minimal phage engraftment dominated by microviruses</b><br>Daan Jansen (KU Leuven)  |
|             | 10:00 - 10:15 | <b>The prevalence of back-and-forth substitutions in the evolutionary landscape of human viruses</b><br>Florian Poulain (UNamur)   |
| Pitch talks | 10:15 - 10:20 | <b>Optimization of a long-read sequencing assay for near full-length HIV-1 proviral genome characterization</b><br>Sofie De Braekeleer (UGent)   |
|             | 10:20 - 10:25 | <b>Predicting viral modules of “mass” transmission: Learning novelties in the functional roles of intrinsically disordered regions, folding dynamics and allostery in biologically diverse viral glycoproteins via explainable AlphaFold2-generated conformational ensembles across evolution</b><br>Rachid Tahzima (ILVO) |
|             | 10:25 - 10:30 | <b>Viralgenie, a nextflow pipeline for viral metagenome sequencing data</b><br>Joon Klaps (KU Leuven)  |

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10:30 - 11:00 *Coffee break in the Marble Room*

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## Session II **Viral pathogenesis and immune response**

*Chairs: Nick De Regge (Sciensano) & Nicolas Gillet (UNamur)*

Short talks	11:00 - 11:15	<b>Establishment of a novel HEV infection model using human intestinal enteroids</b> Nanci Ferreira (KU Leuven)
	11:15 - 11:30	<b>Virus host-interaction networks to identify cellular factors required for the adaptation of avian influenza viruses to humans</b> Antoine Gerodez (Sciensano)
	11:30 - 11:45	<b>Gammaherpesvirus infection shape the development and functional programming of bone marrow monocytes</b> Arthur Poncelet (ULiège)
	11:45 - 12:00	<b>Comparative analysis of Asian-lineage derived Zika virus strains reveals differences in fetal brain pathogenicity</b> Mailis Darmuzey (KU Leuven)
Pitch talks	12:00 - 12:05	<b>Role of goblet cells and intestinal mucus in human norovirus infection and pathogenesis in zebrafish larvae</b> Emma Roux (KU Leuven)
	12:05 - 12:10	<b>Respiratory gammaherpesvirus infection exacerbates experimental model of inflammatory bowel disease</b> Alexis Balthazar (ULiège)
	12:10 - 12:15	<b>Impact of the phosphorylation of viral RNA-dependent RNA polymerase on viral replication</b> Camille Duflos (UCLouvain)
	12:15 - 12:20	<b>IL-4 receptor signaling regulates lung macrophages during helminth coinfection resulting in enhanced gammaherpesvirus permissiveness</b> Georgios Petrellis (ULiège)
	12:20 - 12:25	<b>Survival of shrimp (<i>Litopenaeus vannamei</i>) during an infection with white spot syndrome virus by behavioral fever</b> Mostafa Rakhshaninejad (UGent)
	12:25 - 12:30	<b>Opposite innate immune signatures in VZV- and SeV-infected hiPSC-derived neurospheroids</b> Jonas Govaerts (UAntwerp)

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12:30 - 13:30 *Lunch in the Marble Room*

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13:30 - 14:15

**KEYNOTE LECTURE**

**Using multidisciplinary approaches to improve the understanding of varicella-zoster virus pathophysiology**  
Benson Ogunjimi (University of Antwerp)



*Chairs: Peter Delputte (UAntwerp) & Bénédicte Machiels (ULiège)*

**Session III Clinical virology, epidemiology and surveillance**

*Chairs: Philip Meuleman (UGent) & Koen Vercauteren (ITM)*

Short talks

14:15 - 14:30

**New insights into the honeybee virome, bacteriome and immune priming by an epidemiological follow-up of a honeybee apiary, using third-generation nanopore sequencing**

Cato Van Herzele (UGent)

14:30 - 14:45

**Phenotypic and genomic variability among contemporary clinical RSV isolates is limited, but noticeable**

Kim Stobbelaar (UAntwerp)

Pitch talks

14:45 - 14:50

**How do successive vaccinations and SARS-CoV-2 infections impact humoral immunity dynamics: an 18-month longitudinal study**

Claire Gourzones (ULiège)

14:50 - 14:55

**Surveillance of SARS-CoV-2 variants in wastewater of aircrafts**

Elke Wollants (KU Leuven)

14:55 - 15:00

**Bovine herpesvirus 4 infection impacts the immune response of its host to vaccination**

Célia Darimont (ULiège)

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15:00 - 15:30

*Coffee break in the Marble Room*

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**Session IV Antiviral therapy and prevention**

*Chairs: Leen Delang (KU Leuven) & Isabelle Desombere (Sciensano)*

Short talks

15:30 - 15:45

**A novel class of small molecule SARS-CoV-2 inhibitors that target the M-protein with activity in a SCID mouse infection model**

Manon Laporte (KU Leuven)

15:45 - 16:00

**Confidential**

Arne Matthys (UGent)

16:00 - 16:15

**Drug-based inhibition of ER co-translational polyprotein translocation of Dengue virus**

Marijke Verhaegen (KU Leuven)

16:15 - 16:30

**Inhibition of Chikungunya virus replication in mosquitos by dsRNA-triggered RNA interference**

Koen Bartholomeeusen (ITM)

- 16:30 - 16:35 **New antivirals against human parainfluenza virus**  
Ilebe Rossey (UGent)
- 16:35 - 16:40 **Preclinical antiviral profile of ALG-097558, a novel pan-coronavirus 3CL protease inhibitor**  
Jochmans Dirk (KU Leuven)
- 16:40 - 16:45 **Antiviral and biochemical mechanism of action of a novel nucleoside analogue possessing dual activity against coronavirus and influenza virus**  
Nikolai Bakirtzoglou (KU Leuven)
- 16:45 - 16:50 **CD4 T cell targeting lipid nanoparticles in the search for a genetic HIV cure**  
Maaïke De Cock (UGent)
- 16:50 - 16:55 **Molecular mechanism of latency reactivating versus latency promoting activities of BRD4 modulators JQ1 and ZL0580**  
Eline Pellaers (KU Leuven)
- 16:55 - 17:00 **Combination therapy with approved drugs potentiate antiviral activity against CHIKV in human skin fibroblasts and mice**  
Sam Verwimp (KU Leuven)
- 17:00 - 17:15 Closing words and declaration of best presentation awards by Lieve Naesens
- 17:15 - 18:30 Reception