

DBMR Research Conference

Langhans Auditorium
Murtenstrasse 31, 3008 Bern

Date: Monday, May 6, 2024, 5 pm – 6 pm

Title: Evolution, Demographics, Geographic Spread and Pandemic Disruption of Enterovirus D68

Speaker: Recipient of the Johanna Dürmüller-Bol DBMR Research Award 2022

Dr. Emma Hodcroft, Swiss Tropical and Public Health Institute, Epidemiology and Viral Evolution, Allschwil

Bio: Dr Emma Hodcroft began working in molecular epidemiology, phylogenetics, and modelling in HIV at the University of Edinburgh, where she investigated the heritability of viral load and developed an agent-based model simulating HIV phylogenies during her MSc, PhD, and a post-doc. In 2017, she moved to Basel as a post-doc and joined the Nextstrain project, becoming a co-developer of the project. Prior to the pandemic, Dr Hodcroft worked on projects with tuberculosis, campylobacter, influenza, and RSV, but primarily studied Enterovirus D68, where she has formulated new hypotheses about its evolution and transmission patterns. From February 2020, Dr Hodcroft worked full-time on SARS-CoV-2, including identifying a key variant that dominated Europe in the summer of 2020 despite not being more transmissible (EU1). This work led to her website CoVariants.org (recognised as an SIB Remarkable Output), which tracks SARS-CoV-2 variants. Her work also focused on better combining modelling & phylogenetics and the post-pandemic-restriction re-emergence of other respiratory viruses. Dr Hodcroft has been very active in science communication during the pandemic, gaining over 82,000 twitter followers, and contributing to two BBC radio programmes every week in 2020 and 2021. Thanks to a successful Swiss National Science Foundation Starting Grant application, Dr Hodcroft started her own lab at the Swiss Tropical and Public Health Institute in November 2023, where she's switching back to her pre-pandemic work on endemic respiratory viruses.

Abstract: Enterovirus D68 (EV-D68), a virus generally acquired in childhood, is usually associated with mild respiratory symptoms, but attracted attention due to its link with acute flaccid myelitis (AFM), a serious paralyzing condition. EV-D68 has been observed to have biennial outbreaks in Europe and North America in 2014, 2016, and 2018 – a further outbreak was predicted in 2020, but never realised due to pandemic restrictions. Using pre-pandemic public data, we were previously able to investigate between-outbreak diversification, geographical mixing, and evolutionary signatures such as those indicating antigenic evolution. Further, we were able to examine the association between age and specific EV-D68 clades, finding that patients infected with subclade A2 were significantly older than patients infected with other clades. Since the lessening of pandemic restrictions, EV-68 case detection has resumed, but the impact of the reduced circulation on the viral evolution, demographics, and biennial cycle are still uncertain. Using case data and sequences from both before and after the pandemic, I am able to highlight some of the recent changes in epitopes, diversification patterns, and possible changes in the biennial cycle. In addition, I will talk about the work in progress to look at EV-D68 circulation in Basel from sequencing of wastewater samples collected during the pandemic.

Host: Prof. Dr. Volker Enzmann, Regenerative Neuroscience, Department for BioMedical Research, University of Bern & president of the Johanna Dürmüller-Bol DBMR Research Award committee.

The DBMR Research Conference takes place from 5 pm – 6 pm and will be followed by an apéro.

Next DBMR Research Conference

Monday, June 3, 2024, 5 pm – 6 pm

Speaker: Prof. Dr. Antje Grosche

Title: Focus on Glial Cells: New Gene Therapy Approaches for Retinal Diseases



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