Centre for Emerging Viral Diseases

Newsletter n°1, 2024

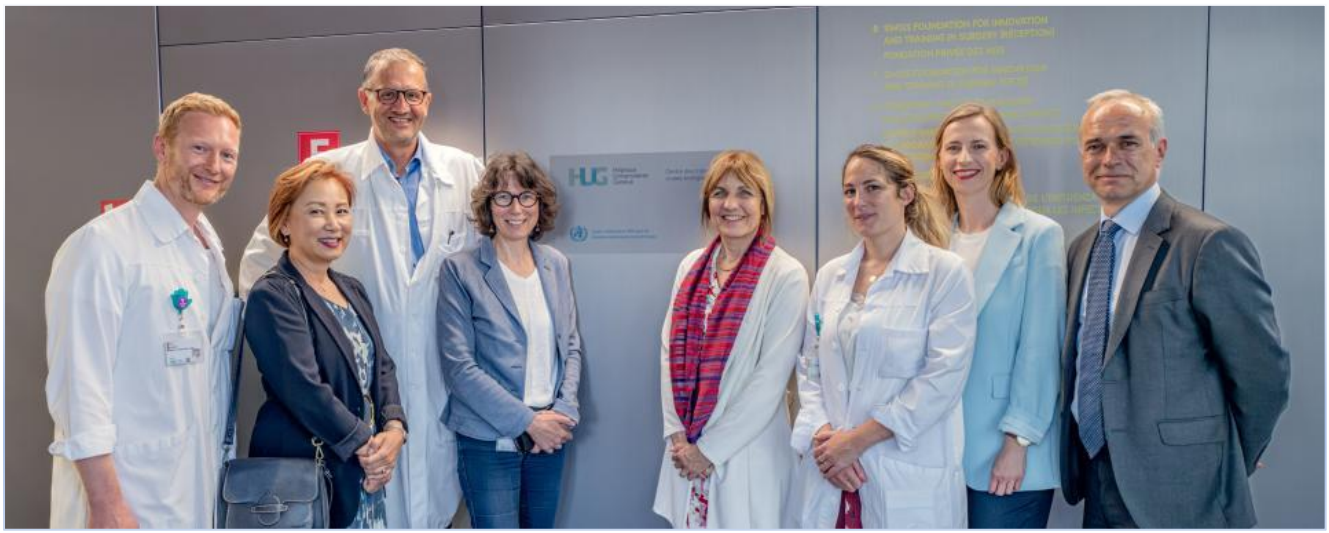
Dear collaborators and friends of our Centre!

2023 has been an exciting and successful year for the Centre for Emerging Viral Diseases! We want to take this opportunity to thank you all for excellent collaboration and for your support. From now on, we want to inform you twice-yearly with this newsletter about our activities – and we start today with a look back at the year 2023 and some highlights of our activities. Enjoy reading!

Highlights of our Centre in 2023

WHO Collaborating Centre for Epidemic and Pandemic Diseases

In January, the World Health Organization (WHO) officially nominated the University Hospital Centre for Emerging Viral Diseases as a WHO collaborating centre. On June 8th, 2023, an official inauguration was held, with many colleagues, friends, collaborators, and partners of the Genève international celebrating our success with us!

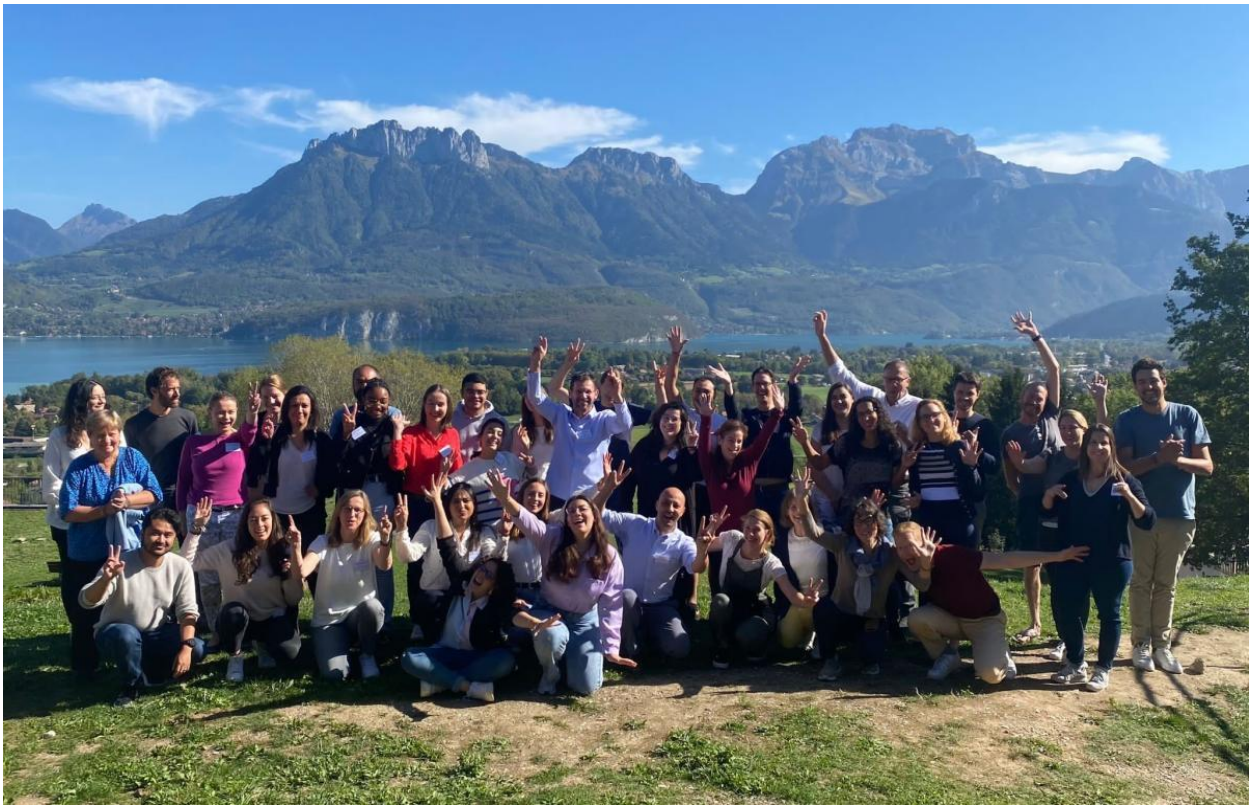


From left to right: Dr M. Schibler, Dr. N. Shindo, Pr L. Kaiser, Dr F. Jaquerioz, Dr. S. Briand, Dr P. Vetter Pr I. Eckerle and Mr B. Levrat.

Read more here.

First joint retreat of the Centre for Emerging Viruses and the Centre of Vaccinology

In October 2023, we organized our first joint retreat of the Faculty and Hospital Centres for Vaccinology and Emerging Viral Diseases to strengthen our links.

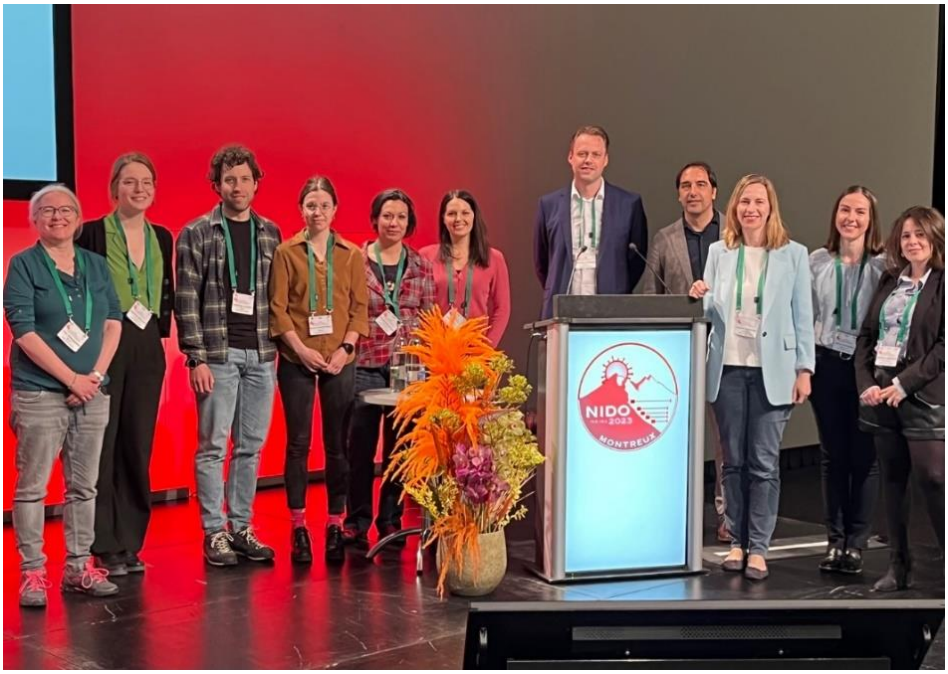


More than 40 researchers, technicians, clinical doctors, and project coordinators came together to present their projects and give an overview of existing technical capabilities and infrastructures.

Read more here.

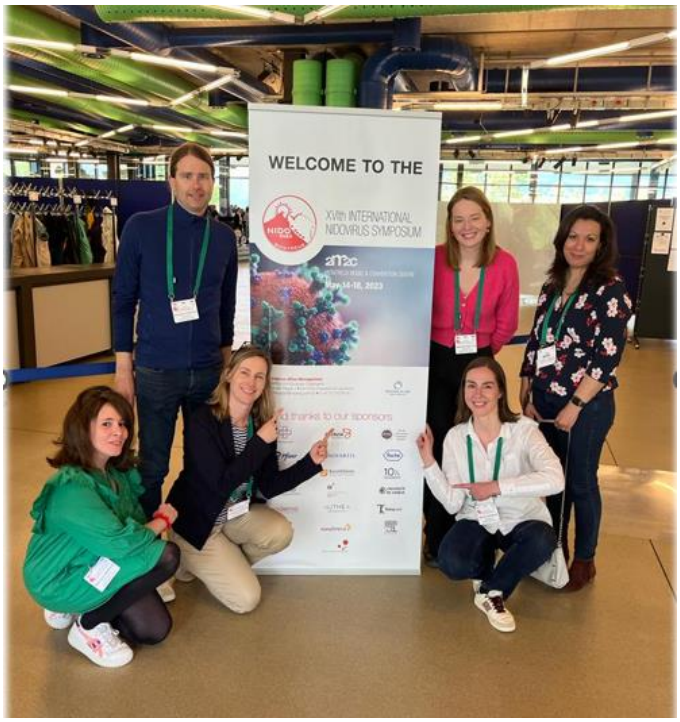
16th International Symposium on Nidoviruses in Montreux

Together with the Institute of Infectious Diseases (IFIK) and the Institute of Virology and Immunology (IVI) of the University of Bern, our Centre has co-organised the 16th International Symposium on Nidoviruses from 14th to 18th May 2023 in Montreux.



From left to right: Dr L. Thomann, M. Bellon, M. Licheri, M. Wider, Dr M. Essaidi-Laziosi, Dr J. Kelly, Prof. R. Dijkman, Prof. V. Thiel, Prof. I. Eckerle, Dr. O. Puhach, Dr. M. Bekliz.

Over 300 researchers from all over the world exchanged their latest findings on corona- and arteriviruses. A special episode of the podcast **"This week in Virology"** was recorded there and is available here.

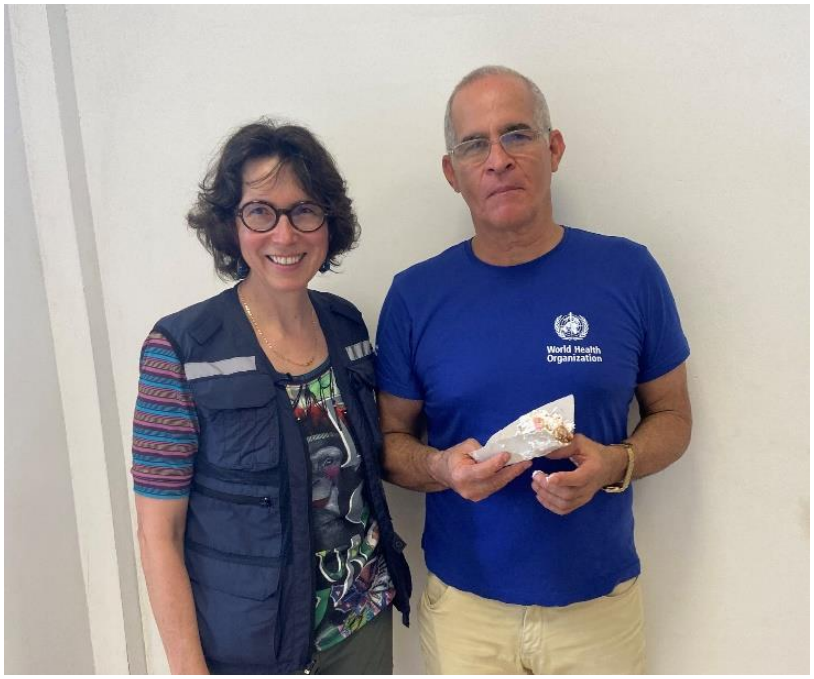


From left to right: Dr. M. Bekliz, Dr B. Meyer, Pr. I. Eckerle, Dr. M. Bellon, Dr. O. Puhach, Dr. M. Essaidi-Laziosi.

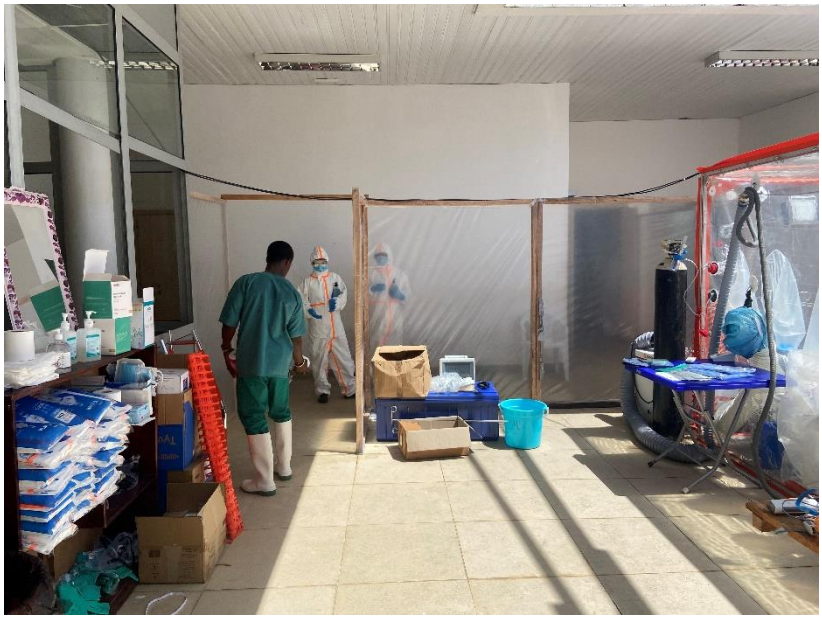
Read more in our CEVD Newsfeed.

Field mission, Marburg virus outbreak in Equatorial Guinea.

Dr. Frédérique Jacquerioz spent one month in Equatorial Guinea to support the response to the Marburg virus epidemic as part of the Center for Emerging Viral Diseases' collaboration with WHO.
The outbreak came to an end in June, after 17 confirmed and 23 probably cases, with 12 of the 17 cases with a fatal outcome.



Dr Frédérique Jaquerioz and Dr Dimitri Caceres Plasencia (clinical trainer).



View on the entrance to the red zone from the donning area, on the right installation of an ALIMA cube for monitoring of severely ill patients.

Read more:

- WHO website: Marburg virus disease.
- CEVD Newsfeed: Field deployment of Dr. Jacquerioz to participate in the Marburg virus disease response in Equatorial Guinea - 12 April 2023

MiViral – A new study on mucosal immunity and its influence in infectious viral load.

In January 2023, we have launched the MIViral (**M**ucosal Immunity: Influence on **I**nfectious **Vira**l **L**oad) study, a joint research project between the Centre for Emerging Viral Diseases and the Centre of Vaccinology, PATIM/Unige. The study is an investigator-initiated trial funded by Moderna Inc., in which we investigate how the mucosal immunity limits infectious virus shedding of SARS-CoV-2, influenza virus and RSV and influences disease severity. The study, which follows 320 volunteers, was run during a first phase from January to July 2023, and currently runs in its second phase from September 2023 to May 2024.

We have just completed the completed the (re-)enrolment of the 320 participants for the second phase, and in total have recorded more than 200 respiratory infection episodes! Until now, we have collected more than 5000 samples, including mucosal antibodies, mucosal cells, serum, and peripheral blood mononuclear cells (PBMCs) at baseline (before infection) as well as during the acute and convalescent disease stages. This unique sample set will allow us to elucidate mechanisms on how the human mucosal immune system prevents infection and modulates the course of respiratory infectious diseases. Our results will deepen our understanding of the mucosal immunity and will guide the development of novel mucosal vaccine approaches in the future.

The MiViral team, from left to right: N. El Merjani, Dr. B. Meyer, K. Samir, W. Adouan, Y. Sarmiento, S. Harnal, Dr O. Puhach, Pr I. Eckerle, J. Lamour, D. Rochat, J. Villers, M. Zaballa.

The genomic surveillance program.

Switzerland instituted a national SARS-CoV-2 genomic surveillance program in March 2021 to provide meaningful and actionable data to support public health efforts. The program relies on a newly created network of Swiss laboratories connected with sequencing platforms, coordinated by the Geneva Center of Emerging Viral Diseases, under the umbrella of the Federal Office of Public Health. Fifteen centers have participated in this effort, although currently there are only 7 participating. In its first three years, these centers performed nearly 4 million PCR tests and produced over 75'000 genomic sequences, of which over 15'000 come from the HUG.

Data from this program has informed decisions taken at the national and international levels on a variety of issues from testing and isolation strategy to vaccination programs and updates, and patient treatment. The program also served as the core driver of many other national and international collaborations, which led to public health related output, such as the validation of rapid diagnostic tests or the sharing of virus isolates, such as XBB.1.5 and JN.1, with the WHO BioHub located in Spiez.

Key research papers of our Centre in 2023

- *Puhach O, Bellon M, Adea K, Bekliz M, Hosszu-Fellous K, Sattonnet P, Hulo N, Kaiser L, Eckerle I, Meyer B. SARS-CoV-2 convalescence and hybrid immunity elicits mucosal immune responses. EBioMedicine. 2023 Nov 29;98:104893.*
- *Pérez-Rodríguez FJ, Laubscher F, Chudzinski V, Kaiser L, Cordey S. Direct Dengue Virus Genome Sequencing from Antigen NS1 Rapid Diagnostic Tests: A Proof-of-Concept with the Standard Q Dengue Duo Assay. Viruses. 2023 Oct 28;15(11):2167.*
- *Hosszu-Fellous K, Zanella MC, Kaiser L, Neofytos D. The present and future of blood virome in allogeneic hematopoietic cell transplant recipients. Curr Opin Infect Dis. 2023 Aug 1;36(4):243-249.*
- *Musumeci S, Najjar I, Amari EBE, Schibler M, Jacquerioz F, Yerly S, Renzoni A, Calmy A, Kaiser L. A Case of Mpox Reinfection. Clin Infect Dis. 2023 Jul 5;77(1):135-137.*
- *Flahault A, Calmy A, Costagliola D, Drapkina O, Eckerle I, Larson HJ, Legido-Quigley H, Noakes C, Kazatchkine M, Kluge H. No time for complacency on COVID-19 in Europe. Lancet. 2023 Jun 10;401(10392):1909-1912.*
- *Michielin G, Arefi F, Puhach O, Bellon M, Sattonnet-Roche P, L'Huillier AG, Eckerle I, Meyer B, Maerkl SJ. Clinical sensitivity and specificity of a high-throughput microfluidic nano-immunoassay combined with capillary blood microsampling for the identification of anti-SARS-CoV-2 Spike IgG serostatus. PLoS One. 2023 Mar 23;18(3):e0283149.*
- *Puhach O, Meyer B, Eckerle I. SARS-CoV-2 viral load and shedding kinetics. Nat Rev Microbiol. 2023 Mar;21(3):147-161.*

Outreach activities & our work in the media

We have presented the results of our SNF-funded projects on SARS-CoV-2 at the "Closing Conference NRP 78 and Special Call on Coronaviruses" in Thun, 21st to 23rd March 2023. In total, our Centre was part in three successfully funded projects on characterization of novel variants and development of novel diagnostics to better assess immunity against SARS-CoV-2!

Read more here.

The German TV broadcasting "ZDF" was visiting out Centre in January for a documentary on SARS-CoV-2, its origins and how novel emerging viruses' spillover. The documentary was broadcasted on 19th April 2023 at 8h15pm at «ZDF Info» and can be also watched in the media the link, here.

Interviews & guest articles

- « *Pandémie ? Se préparer aujourd'hui pour mieux répondre demain* ». Pre. Isabella Eckerle. Text co-signed by Dr. Frédérique Jacquerioz Bausch, from the Center for Emerging Viral Diseases (HUG). Tribune de Genève, Publish: 07/12/2023
- «*Das Virus ist noch nicht fertig mit uns*» Der Spiegel, 24/08/2023
- «*Das Problem ist, was in den Pelzfarmen passiert*» Süddeutsche Zeitung, 07/08/2023
- Virologin Isabella Eckerle: «*Wir Menschen leben heute fast wie Fledermäuse*» NZZ am Sonntag, 26/08/2023

New faces of our Centre

We have new team members!

- **Mr. Yoann Sarmiento**, technician in the research group emerging viruses
- **Ms. Severine Harnal**, study nurse Miviral
- **Mr. Samir Khadija**, study nurse Miviral
- **Ms. Núria Sagarra Ballesteros**, administrative assistant of the CEVD
- **Mr. Andrew Azman**, epidemiologist (biosketch Dr. Andrew Azman)
- **Mr. Javier Perez-Saez,** Scientific Collaborator (biosketch of Dr Javier Pérez-Saez)

More information about our Centre can be found here:

- Centre for Emerging Viral Diseases
- UNIGE DEMED Emerging viruses
- X: @gcevd

We are looking forward to further collaboration and engage with you, and we wish you a healthy start in 2024!

Pr. Laurent Kaiser **Pr. Isabella Eckerle** **Dr. Pauline Vetter** **Dr. Frédérique Jaquerioz**

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- Dr. Pauline Vetter, Attending Physician at the Centre for Emerging Viral Diseases 079 553 97 61, Pauline.vetter@hcuge.ch
- Dre Frédérique Jacquerioz, Senior Consultant of the Centre for Emerging Viral Diseases 079 553 81 99, Frederique.Jacquerioz@hcuge.ch