

Send us your news to evbc@uni-jena.de.

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Selected Publications by EVBC Members publications on Pubmed

 All

Prediction tools

🔗 Machine learning models based on genome-wide mutation data, particularly random forest and logistic regression, effectively predict the host origin of Group B Streptococcus, providing insights into host-specific adaptations and aiding in outbreak identification and containment efforts. (Comput Biol Med: [10.1016/j.combiomed.2024.108185](https://doi.org/10.1016/j.combiomed.2024.108185))

🔗 PoxiPred, an AI tool, predicts antigens and T-cell epitopes for various poxviruses from a single proteome file, identifying thousands of potential targets, primarily reactive to CD8+ T-cells. (Biology (Basel): [10.3390/biology13020125](https://doi.org/10.3390/biology13020125))

🔗 PRFect is a novel machine-learning tool that accurately detects and predicts programmed ribosomal frameshifts (PRFs) in coding genes by integrating various cellular properties, providing researchers with a user-friendly approach to uncovering the complexities of PRFs with high sensitivity, specificity, and an accuracy exceeding 90%. (BMC Bioinformatics: [10.1186/s12859-024-05701-0](https://doi.org/10.1186/s12859-024-05701-0))

Viromics / metagenomics

🔗 Fecal immunochemical test (FIT) samples from a Norwegian colorectal cancer screening study revealed over 18,000 DNA viruses, with associations found between lifestyle factors and viral diversity, showcasing FIT's potential for large-scale gut virome studies and offering insights into their role in health and disease. (Nat Commun: [10.1038/s41467-024-46033-0](https://doi.org/10.1038/s41467-024-46033-0))

🔗 Analysis of metagenomes from various habitats revealed a significant diversity of viral auxiliary metabolic genes (AMGs) related to methane metabolism, particularly prevalent in rumen environments, suggesting a complex interplay between viruses and methane cycling that varies across ecological contexts. (Nat Commun: [10.1038/s41467-024-46109-x](https://doi.org/10.1038/s41467-024-46109-x))

Viral Pathogenesis

🔗 In immunocompromised hosts, Human cytomegalovirus (HCMV) infiltrates monocyte-derived dendritic cells, triggering a cascade of interactions involving viral gene expression, interferon response regulation, and virus sensing, ultimately dictating the permissiveness of these cells to the virus. (Nat Commun: [10.1038/s41467-024-45614-3](https://doi.org/10.1038/s41467-024-45614-3))

Surveillance / Monitoring

🔗 Impact of climate change on the expansion of West Nile virus in Europe, revealing a significant increase in the area conducive to virus circulation and highlighting climate change as a critical factor alongside human population changes. (Nat Commun: [10.1038/s41467-024-45290-3](https://doi.org/10.1038/s41467-024-45290-3))

Virus Evolution

🔗 Deep sequencing identified unique and shared genetic variations, including a significant deletion, in African swine fever virus (ASFV) from experimentally infected pigs, highlighting the importance of deep sequencing for understanding ASFV evolution and its impact on disease severity. (Pathogens: [10.3390/pathogens13020154](https://doi.org/10.3390/pathogens13020154))

Therapeutics


Recent findings suggest that bacteriophage therapy shows promise as an adjunct treatment for bronchiectasis, as evidenced by successful case reports and series utilizing personalized phage preparations alongside antibiotics. (Curr Opin Pulm Med: [10.1097/MCP.0000000000001050](https://doi.org/10.1097/MCP.0000000000001050))

🔗 Importance of understanding the molecular diversity of betacoronaviruses, particularly the 5'-proximal region, revealed through advanced imaging techniques, aiding in the development of broad-spectrum antiviral therapeutics. (Nucleic Acids Res: [10.1093/nar/gkae144](https://doi.org/10.1093/nar/gkae144))

🔗 Drug-repurposing library screen against respiratory syncytial virus identified 21 potential candidates, including lonafarnib, a farnesyltransferase inhibitor originally intended for hepatitis delta virus therapy, which showed promising antiviral activity in vitro and in a murine infection model by inhibiting RSV fusion protein. (Nat Commun: [10.1038/s41467-024-45241-y](https://doi.org/10.1038/s41467-024-45241-y))

Tools and Resources

 Virus tools website

Tools that have been added to our [collection](#) this month have been newly released or updated. Tools developed by EVBC members are marked .

🌟 **PoxiPred:** Artificial-Intelligence-Based Method for the Prediction of Potential Antigens and Epitopes.

🌟 **PRFect:** predict the occurrence of programmed ribosomal frameshifting in bacterial, phage, and viral genomes.

ViBioM 2024

 Stay tuned

Deadlines:

Don't forget to submit an abstract to apply for a talk at ViBioM 2024. Poster registrations will stay open until mid of April.

Talk submission deadline: **15 March 2024**

Notification: **08 April 2024**

Poster submission deadline: **14 April 2024**

Invited Speakers:

We are thrilled to announce the full list of invited speakers:

- Yves Briens, Ghent University, BE
- Nathan Grubaugh, Yale School of Public Health, USA
- Lia van der Hoek, University of Amsterdam, NL
- Mart Krupovic, Institut Pasteur, FR
- Vera Van Noort, Leiden University, NL
- Houriiyah Tegally, CERI, SA
- Alexander Gorbalenya, Leiden University, NL

Conference Dinner:

We are pleased to announce that the registration for conference dinner is now [open!](#)

Schedule:

welcome get together: **Mon, 27. May 2024** 7 pm

approx. starting time: **Tue, 28. May 2024** 9 am

approx. finishing time: **Thu, 30. May 2024** 5 pm

Hotel Booking Recommendations:

We highly recommend booking your accommodation soon, as availability may become limited closer to the conference dates. You can find a list of hotel recommendations [here](#).

Job Market at ViBioM 2024:

Are you looking for new opportunities or seeking talented individuals to join your team? During ViBioM 2024, we will be hosting a job market for participants who are looking for a job or who are hiring. More information [here](#).

ECR Viromics Webinar Series

 Register

This lecture for early career researchers studying viruses in complex communities is organized together with the [Center of Microbiome Science](#) at Ohio State University and the [NSF EMERGE Biology Integration Institute](#).

Gut Phages – Guardians of Gut-laxy

13 March 2024 | 04-05 pm CET

Paula Istvan, University of Oslo, Norway

online