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ESM Steering Committee

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Subject: Nomination of Dr. Viola Dreyer for the Gertrud Meissner Award 2025.

Dear madams, dear Sirs,

It is with great enthusiasm that I recommend Dr. Viola Dreyer for the Gertrud Meissner Award of the European Society of Mycobacteriology in recognition of her outstanding and interdisciplinary contributions to the field of mycobacteriology.

Dr. Dreyer has performed her PhD thesis in my group (Molecular and Experimental Mycobacteriology Group) at the Research Center Borstel. Based on her outstanding PhD work (final grade summa cum laude, year 2017), she has already obtained the PhD award of the administrative district Bad Segeberg.

In her postdoc work, she has focused her research on the application of genome-based method for rapid diagnosis, and transmission of tuberculosis, particularly drug-resistant tuberculosis (TB). She has developed several tools allowing advanced analysis of next generation sequencing (NGS) data incl. an online tool (PhyResSe) which was the first globally available tool for automated resistance prediction, allowing non specialized users NGS data analysis, and is used worldwide. She also developed the tool binoSNP, which enables the detection and statistical evaluation of low-frequency variants in NGS datasets. The established methods have already been evaluated in initial clinical studies and are currently being further tested and developed in international studies."

She also has made significant contributions to the application of genome sequencing as a 'culture-free' diagnostic method. This topic is of outstanding importance in light of the global spread of drug-resistant *Mycobacterium tuberculosis* complex (MTBC) strains for the more effective future control of drug-resistant TB. In several collaborative

studies with researchers from all over the world, she is using genome sequencing based approaches to study transmission and evolution of drug resistant MTBC strains e.g. in Mumbai.

Importantly, Dr. Dreyer's research has not remained confined to theoretical/laboratory advances; it has contributed substantially to the translation of scientific findings into clinical practice, enabling earlier resistance detection and the design of more personalized treatment regimens for patients with resistant TB. Also, she also engaged in training and capacity building and performed several trainings e.g. in the application of tNGS for drug resistance prediction and bioinformatic analysis of NGS data.

In summary, Ms. Dreyer's research has made a decisive contribution to the establishment of highly innovative NGS-based methods for the early detection of resistance in TB patients, and to the translation of these findings into more effective, individualized treatment approaches—particularly for drug-resistant, MDR/pre-XDR/XDR tuberculosis. Further, she is highly engaged in several international studies (e.g. TB Portals) using high resolution genome sequencing to study emergence of resistance, population structure and transmission rates of MTBC strains in different areas of the world. Importantly, she has always aimed at translating her work directly into practical application, e.g. by developing standardized easy to use data analysis tools and by helping colleagues in high incidence settings in application. Her work led to several publications including those in high-ranking journal such as Genome Medicine, Lancet Microbe, Lancet Infectious Diseases.

She has established a large number of international collaborations and is an active member of the European Society of Mycobacteriology with presentation at several ESM meetings.

Based on her comprehensive, interdisciplinary, and outstanding contributions to various aspects of mycobacteriology, I strongly recommend that Dr. Dreyer be awarded the Gertrud Meissner Award.

Thank you very much for your consideration.

Sincerely,

Prof. Dr. Stefan Niemann