N-RENNT

Niedersachsen-Research Network on Neuroinfectiology (N-RENNT)

N-RENNT aims to start a neuroinfectiology research network in Lower Saxony fostering and boosting this young and important interdisciplinary field. N-RENNT will be established by implementing both focused research projects and an advanced and specific training program for graduate students. Structure-building measures as well as sustainability of the project are guaranteed by lasting support by the Speaker University (University of Veterinary Medicine Hannover, TiHo).

Infectious diseases as well as neurodegenerative and inflammatory disorders of the central nervous system (CNS) represent major medical challenges of the health care systems in the coming decades. Numerous CNS diseases are triggered directly or indirectly by infections or a misdirected immune response against their causative agents. Additionally, some emerging diseases, many of them arising from zoonotic pathogens, like spongiform encephalopathy (new variant of Creutzfeldt-Jacob disease in humans), influenza, tick-borne encephalitis, and West Nile disease, are neurotropic to a varying degree. Moreover, several neuro-degenerative diseases including Alzheimer s disease and multiple sclerosis (MS) are suspected to be caused or aggravated by infections.

To develop new strategies for diagnosis, prevention, and treatment of these neurological disorders, the complex interactions between CNS and pathogen urgently require a more profound understanding. This is not limited to a better understanding of the pathogenesis of neurological disorders and associated infections, but should also encompass their epidemiology by studying routes of transmission within and between species. These scientific challenges will be efficiently addressed by an interdisciplinary approach bridging neurosciences and infection medicine. The translational One Health - one Medicine research setting of N-RENNT, which reflects the intimate and synergistic connection between human and animal medicine, offers perfect conditions.

For establishing N-RENNT, outstanding scientists of Lower-Saxony from the TiHo, the Hannover Medical School, the Georg-August-University in Göttingen, the Technical University Braunschweig and the non-university research institutions Helmholtz Center for Infection Research in Braunschweig, Hannover Center for Experimental and Clinical Infection Research (Twincore), Max-Planck-Institute for Experimental Medicine in Göttingen, and Boehringer Ingelheim Veterinary Research Center in Hannover will join forces in this unique network. Furthermore, we were able to attract Prof. A.D.M.E. Osterhaus for a professorship as a leading network scientist who will substantially ensure the success of the proposed network. Prof. Osterhaus is an internationally highly recognized expert in infectious and zoonotic disease and with profound knowledge in the field of human and veterinary medicine.

Further support for N-RENNT will come from the Hannover Graduate School of Veterinary Pathobiology, Neuroinfectiology, and Translational Medicine (HGNI) at the TiHo by offering outstanding teaching and training opportunities for graduate students.

The sustainability of the N-RENNT idea will be ensured by the TiHo by providing the novel Center for Infection Medicine and Zoonoses Research, the recently established graduate school with focus on neuroinfectiology, and four professorships. N-RENNT aims to be a nucleus for the foundation of a novel European consortium of neuroinfectiologists.

In conclusion, N-RENNT brings together a unique consortium of experts and institutions, joining forces with an unparalleled expertise and knowledge in the integrated fields of neuroscience and infectious diseases in a combined One Health One Medicine medical and veterinary setting in Lower-Saxony. This will lead to the establishment of a highly skilled, globally unique and versatile expertise center that

will address in a multidisciplinary way, challenges posed by infectious agents that target the CNS and cause largely unresolved neurological disorders.