

**Invitation to a guest lecture
at the joint colloquium of the Institute of Biology and Environmental Sciences and the
Department of Neuroscience**

Module bio890: Current topics in biology

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Ecological drivers for the (re-)emergence of mosquito-borne viruses in Europe

Mosquitoes (Diptera: Culicidae) are vectors of various zoonotic pathogens (e.g. viruses, nematodes or protozoans). At least four different mosquito-borne viruses (Sindbis virus, Batai virus, Usutu virus and West Nile virus) and two filarial parasites (*Dirofilaria repens*, *D. immitis*) are endemic in Central Europe. In addition, globalisation and climate warming allowed the worldwide spread of exotic mosquito species. The Asian tiger mosquito (*Aedes albopictus*) is established in Europe since the 1990s, causing repeated epidemics of tropical viruses, e.g. Chikungunya virus and Dengue virus. Just recently, populations of the Asian tiger mosquito are also detected for different sites in Germany.

The basis for the spatial risk assessment for the (re-)emergence of mosquito-borne pathogens in Europe is a comprehensive surveillance system of mosquitoes, birds, and humans. However, on the other hand, there is still a huge lack regarding the basic ecology of native mosquito species, which are important drivers for the spatial-temporal risk of local pathogen transmission. These gaps are filled in current studies on the host-feeding patterns, temperature-dependent resting sites, or experimental infection studies to determine the species-specific vector competence. These data are used in mechanistic and correlative models for an integrated risk assessment for Europe.

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Host: Prof. Dr. Ellen Kiel (Aquatic Ecology) IBU

Members of all institutes are cordially invited to join the lecture.