The **Leibniz Institute for Zoo and Wildlife Research (IZW)** in the Forschungsverbund Berlin e. V. (www.izw-berlin.de) together with the Research Institute of Wildlife Ecology (FIWI) at the University of Veterinary Medicine, Vienna (www.vetmeduni.ac.at/fiwi), the Weierstraß Institute for Applied Analysis and Stochastics (WIAS, www.wias-berlin.de), the Institut for Virology of the Freie Unversität Berlin (FU, www.vetmed.fu-berlin.de) and the Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB, www.igb-berlin.de) have formed a consortium to implement the AQUAVIR project funded by the Leibniz Association. Water is required for life. We have accumulated evidence suggesting it may be an overlooked viral vector. In climatic zones with seasonally limited precipitation such as east Africa and central Asia, animals congregate at high densities at scarce water sources. We hypothesize that viruses shed in water in this ecological setting would gain a fitness advantage if they evolved traits permitting the retention of their infectivity in water and a reduction in host specificity. The AQUAVIR project will determine whether water is a significant viral vector and how viruses behave mechanistically in such settings, and develop mathematical models to understand the epidemiology and evolution of this phenomenon. We therefore seek to fill the following positions: - 2 doctoral positions in evolutionary disease ecology - 1 postdoc in molecular virology - 1 postdoc in mathematical modeling in epidemiology

Specifically: 1 doctoral student in evolutionary disease ecology: African waterholes (05/15) â IZW

1 doctoral student in evolutionary disease ecology: Asian waterholes

(06/15) â IZW/FIWI

Specific tasks: Determine the distribution, persistence and species usage

of water sources; determine the effect of water source characteristics on virus presence; non-invasively determine if physiological stress is correlated with virus excretion in potential host species; analyse environmental DNA of water samples to compare genetic diversity of potential viral host sequence diversity obtained directly from animals compared to their drinking sources. Requirements: Veterinary degree or completed masterâs / diploma degree in biological sciences; clean driverâs licence; competence in statistical methods; ability to work independently in challenging environments and to interact with scientists from a wide variety of fields; strong interest in wildlife, conservation and evolutionary biology; a background in ecology, previous experience with wildlife, experience in field research and off-road driving experience would be highly advantageous. Position 05/15 will be supervised by Prof Alex

Greenwood (IZW Dept of Wildlife Diseases) and Dr Marion L East (IZW Dept of Evolutionary Ecology), position 06/15 by Prof. Alex Greenwood and Prof. Christian Walzer (FIWI). **1 Postdoc in molecular virology (07/15) â IZW/ FU**

Specific tasks: Serological analysis of mammalian samples using species-specific viral peptide-based ELISA; next generation sequence characterization of equine herpesviruses from water and animal samples; evolutionary analysis of viral sequences obtained to determine phylogenetic affiliations and estimate evolutionary dynamics of viral populations, including evaluation for positive selection on sequences relevant to virulence or stability in water and/or novel recombination events that might influence viral phenotype; viral mutagenesis to determine whether positively selected sites or recombination events identified in field samples alter viral phenotype, e.g. virulence or stability; coordinate with two field doctoral students and a postdoc mathematical modeller. Requirements: The successful candidate will have a completed doctoral degree, extensive experience in molecular virology, a strong interest in wildlife, conservation and evolutionary biology and interact with scientists from a wide variety of fields. Previous experience in evolutionary biology and next generation sequencing analysis will be considered a major advantage. The postdoc will be supervised by Prof. Alex Greenwood (IZW) and Prof. Nikolaus Osterrieder (FU).

1 Postdoc in mathematical modeling in epidemiology (08/15) â IZW/WIAS

Specific tasks: Develop and analyze epidemiological models incorporating water as a viral vector, temporal changes of water sources and interactions between different species; simulate individual-based models in the ecological setting of the project. Requirements: The successful candidate should have a completed doctoral degree and be experienced in epidemiological modeling using probabilistic concepts. Candidates with a strong background in mathematical modeling within other contexts may also apply. The successful applicant will combine probabilistic, analytical and numerical approaches to study the effect of the spatio-temporal variability in the abundance of host and water sources upon the evolution of virulence and other epidemiological outcomes. Good communication skills and a strong interest in evolutionary biology are required as theory will be developed in close collaboration with biologists from IZW and mathematicians from WIAS. The postdoc will be jointly supervised by Drs Stephanie Kramer-Schadt (IZW Department of Evolutionary Ecology), Alex Courtiol (IZW Dept of Evolutionary Genetics) and Prof. W. König (WIAS Research Group 5: Interacting Random Systems). The working location of the candidate could be situated at either IZW, WIAS, or in both institutes.

Applications and working environment

In our consortium we offer state-of-the-art methodology and a stimulating international research environment within an interdisciplinary, collaborative context. The doctoral positions are initially limited to two years, with the possibility for extension to a maximum of three years. The postdoctoral positions are limited to three years. All positions start on June 1, 2015 at the earliest. Salary is according to TVöD (65% for doctoral students, 100% for postdocs). As a member of the Leibniz Association, and lead institution of the AQUAVIR consortium, the IZW is an equal opportunity employer, determined to increase the proportion of women in successful scientific careers, and particularly encourages women to apply. Preference will be given to disabled applicants with the same qualifications. Enquiries or questions should be directed to Prof. Alex Greenwood, email:
greenwood@izw-berlin.de
(05-08/15), Dr. Marion East, email:

east@izw-berlin.de
(05/15), Prof. Chris Walzer, email:
Chris.Walzer@vetmeduni.ac.at
(06/15), Prof. Nikolaus Osterrieder, email:
no.34@fu-berlin.de
(07/15), Prof. Wolfgang König, email:
koenig@wias-berlin.de
(08/15), Dr Stephanie Kramer-Schadt, email:
kramer@izw-berlin.de
(08/15), or Dr Alexandre Courtiol, email:
courtiol@izw-berlin.de
(08/15). Please email complete application documents as a single pdf-file including the position reference number, a letter of motivation, CV, copies of relevant degrees, and names and contact details of two referees as soon as possible but
no later than March 20, 2015
via the IZWâ□□s online-job-market (button â□□Apply onlineâ□□). Stephanie Vollberg
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