

Die Charité – Universitätsmedizin Berlin ist eine Einrichtung der Freien Universität Berlin und der Humboldt-Universität zu Berlin. Sie hat als eines der größten Universitätsklinika Europas mit bedeutender Geschichte eine führende Rolle in der Forschung, Krankenversorgung und Pflege. Aber auch als modernes Unternehmen mit Zertifizierungen im medizinischen, klinischen und im Management-Bereich tritt die Charité hervor.

At the Institute of Tropical Medicine and International Health (Director: Univ.-Prof. Dr. Gundel Harms-Zwingerberger) we wish to employ from 1st September an

Anthropologist (post-doc)

Project „Lassa Fever in Guinea and Sierra Leone: rodent control, and seasonality of human exposure to rodents (LAROCS)”

(ID no: DM.112.13)

Tasks:

In the context of the DFG-funded project “Lassa Fever in Guinea and Sierra Leone: rodent control, and seasonality of human exposure to rodents (LAROCS)”:

- Independent development and execution of the anthropological component of the research project mentioned above (details in the annexe)
- Possibly (Co-)Supervision of BSc, MSc or PhD students working for LAROCS
- Representing the interests of the Institute of Tropical Medicine and International Health in the project countries Guinea and Sierra Leone, particularly oversight of research activities and use of funds also beyond the anthropological project component
- Communication with project partners in Hamburg, Guinea, Sierra Leone and the United Kingdom
- Communication with the principal investigator and other staff dealing with the project at Charité
- Contribution to scientific reports
- Drafting research papers, to be submitted to peer-reviewed journals for publication

formal and professional requirements:

Essential

1. a PhD in social or cultural anthropology with an appropriate specialisation (e.g. African studies, medical anthropology, food and agriculture, human-animal studies, public health/development)
2. ability to develop and manage an innovative research plan within the auspices of the project
3. ability to independently write academic anthropological texts
4. ability to publish in peer review anthropological journals
5. excellent and proven written and verbal French and English
6. substantial experience of ethnographic fieldwork
7. good organisational and communication skills
8. ability to work in a multidisciplinary team
9. ability to engage with epidemiology and applied anthropology as well as critical anthropological theory and method

Desirable

1. work or research experience from West Africa or similar economically deprived societies
2. previous exposure to quantitative scientific methods or research environments (e.g. epidemiology)
3. previous exposure to public health intervention research
4. proficiency in German, or willingness to learn German.

During the data collection period, i.e. most of the contract period, the post is located in Faranah/Guinea. The post holder is likely to spend 3-4 months per year in Kenema/Sierra Leone. During write-up the post is located in Berlin.

The salary will be determined taking into account the individual circumstances (e.g. relevant professional experience) in salary group 13 of the TV-Charité salary scale, full time, limited to 31st March 2016.

Charité – Universitätsmedizin Berlin decides on employment on the grounds of qualification, ability and professional achievement. If these are equal we prefer employment of severely handicapped people. Applications from individuals with migration background, who fulfil the employment conditions, are explicitly encouraged.

Please send your complete application in English by 31.07.2013 specifying the ID no. DM.112.13 to the following address:

**Charité – Universitätsmedizin Berlin,
Institut für Tropenmedizin und Internationale Gesundheit,
Dr. Matthias Borchert, Spandauer Damm 130, 14050 Berlin.
For further information please call +49(30) 30116820**



Documents will only be returned if a sufficiently stamped envelope has been added. Travel costs cannot be reimbursed.

Annexe

Summary

Lassa fever is a viral haemorrhagic fever, endemic in parts of rural West Africa including Guinea and Sierra Leone, affecting 200,000-300,000 persons with 5,000-10,000 fatalities per year. Lassa virus has a rodent reservoir, *Mastomys natalensis*, and is transmitted to humans through contact with *Mastomys*, their body fluids or droppings. Treatment options are limited. There is no vaccine, so that prevention has to be based on reducing the contact between humans and infectious *Mastomys*. From earlier studies in Guinea we know that *Mastomys* aggregates in houses during the dry season, thus presumably increasing the risk for transmission to humans. Mathematical modelling has shown that transmission between rodents occurs predominantly between adults, and less so between pregnant females and fetuses. Therefore, reducing the abundance of rodents could decrease the occurrence of Lassa fever in humans by decreasing the exposure of humans to *Mastomys*, and by decreasing the proportion of infectious *Mastomys*. In Guinea, we suggest evaluating rodent trapping as intervention to reduce the abundance of *Mastomys*, the prevalence of Lassa virus in *Mastomys*, and the incidence of Lassa infection in humans. We will explore whether rodent trapping could be complemented by other means of rodent control like environmental hygiene. In Sierra Leone, we suggest to investigate whether the same seasonal pattern of *Mastomys* aggregation occurs as in Guinea.

State of the art and preliminary work (excerpt, most relevant for the anthropological component)

Rodent control in African villages is more than a technical challenge: its long term success will depend to a large extent on the knowledge, attitudes, beliefs and behaviours of the local population. There have been very few studies looking into the anthropological aspects of the interaction between humans and rodents. Kirkland (2003) has suggested that villagers in Sierra Leone perceive rodents as nuisance, but it is unclear whether this relates rather to the damage they cause to harvest and stored food, or to the risk that they pose to health – this is an important distinction to inform education activities on rodent control. The same study found a positive attitude towards rodent control to prevail, but a lack of local knowledge how to achieve it. We shall therefore explore whether in the future villagers can participate in rodent control efforts safely and sustainably. At the same time, rodents are being hunted and butchered for consumption, which was found to be a risk factor for Lassa transmission (ter Meulen et al 1996). We will investigate how important rodents are as a food source, and how expendable their hunting is. The importance of human behaviour is furthermore highlighted by the finding that maintaining houses in good order and keeping their surroundings clean protects against Lassa infection (Bonner et al. 2007). We will therefore explore whether complementary interventions like improved food storage, house maintenance and cleanliness are realistic options to enhance the effectiveness of rodent trapping.

More broadly, we are interested in obtaining detailed ethnographic data which enriches our understanding of the ways in which the social lives of rodents and humans are entangled, for example through the shared use of domestic spaces and through farming, hunting, food storage and agricultural practices. The post-holder will be expected to build upon recent theoretical developments in anthropology, for example relating to the study of human-animal encounters, material worlds and the anthropology of global health (e.g. Brown and Kelly, forthcoming). The post holder should also have a commitment to working and thinking across the boundaries of applied and theoretical anthropology, and between epidemiology and anthropology. S/he should be open to the theoretical and methodological potential of bringing into conversation the concerns, methods, theories, approaches, and experimental techniques of these different fields of academic practice.

References:

- BONNER, P.C., W.P. SCHMIDT, S. BELMAIN, B. OSHIN, D. BAGLOLE, M. BORCHERT (2007). Poor housing quality increases risk of rodent infestation and Lassa fever in refugee camps of Sierra Leone. *Am. J. Trop. Med. Hyg.*, 77: 169-175.
- BROWN, H. and ANN H. KELLY (forthcoming) Towards an anthropology of viral haemorrhagic fevers *Medical Anthropology Quarterly*
- KIRKLAND D (2003). Socio-economic factors of Lassa fever: a qualitative study. London: Merlin.
- TER MEULEN, J., I. LUKASHEVICH, K. SIDIBE, A. INAPOGUI, M. MARX, A. DORLEMANN, M. L. YANSANE, K. KOULEMOU, J. CHANG-CLAUDE & H. SCHMITZ (1996). Hunting of peridomestic rodents and consumption of their meat as possible risk factors for rodent-to-human transmission of Lassa virus in the Republic of Guinea. *Am. J. Trop. Med. Hyg.*, 55: 661-666.

Objectives (excerpt)

In the absence of a vaccine, rodent control and human behavioural changes are currently the only options to prevent Lassa fever. Therefore our project aims at producing the evidence needed for effective and sustainable rodent control interventions in the Mano river region. Initially we plan to focus our activities on Guinea, where we have a longstanding scientific collaboration with the Institute of Microbiology (Faculty of Medicine, University of Guinea), and on Sierra Leone, where we have collaborative links with the University of Sierra Leone (Department of Microbiology, Department of Zoology) and the Ministry of Health and Sanitation (Department of Primary Health Care, Department of Disease Prevention and Control). ... The research activities in Guinea and Sierra Leone are diverse and reflect the different state of knowledge in the two respective settings:

- In rural Upper Guinea, where rodent dynamics have been studied already, we plan to introduce and evaluate rodent management in an area of high endemicity. Demonstrating feasibility and effectiveness of such an intervention to reduce rodent infestation and Lassa prevalence in rodents as well as exploring options for achieving sustainability will provide an indication whether a full-scale cluster-randomised controlled trial to assess the effectiveness of community-based rodent control to reduce Lassa incidence is worth undertaking in a later stage following this three years program.
- In Eastern Sierra Leone, namely in the Kenema district, we plan to investigate whether the seasonality in rodent dynamics found in Guinea also prevails in Sierra Leone. A better understanding of such seasonality would help to design a rodent control intervention in Sierra Leone in the future.

Since rodent control ultimately is a behavioural intervention, we plan to recruit a scientist with anthropological expertise [this is the post the advertisement is about] to investigate in both settings the perceptions and attitudes of the local population on rodents as well as on rodent trapping and complementary interventions.

General objective

To investigate the seasonality of rodent dynamics and rodent-to-human transmission of Lassa virus and the potential of rodent control to prevent Lassa fever in humans (proof of principle).

Specific objectives

In Guinea:

1. To evaluate whether rodent trapping is feasible and acceptable
2. To assess the effectiveness of rodent trapping on the abundance of *M. natalensis* in communities where Lassa fever is endemic
3. To assess the impact of rodent trapping on the Lassa virus prevalence in *M. natalensis*
4. To estimate the incidence of human Lassa seroconversion in communities with and without rodent control

In Sierra Leone:

5. To assess the abundance of *M. natalensis* in the dry and in the rainy season
6. To estimate murine Lassa virus prevalence in the dry and in the rainy season
7. To estimate the human Lassa seroprevalence by age and sex

In both settings:

8. To collect detailed ethnographic data on forms of human-rodent encounter and the shared social worlds of *M. Natalensis* and humans
9. To understand perceptions and attitudes of community members towards rodents and rodent trapping
10. To explore options for the safe and sustainable involvement of community members in rodent trapping
11. To explore whether complementary behavioural interventions could sustainably enhance the effectiveness of rodent trapping

Work schedule (Excerpt)

Anthropology

The anthropological component of this study will use the standard ethnographic research methods of participant observation as well as other methods including in-depth key informant interviews, semi-structured interviews, and focus group discussions. Study participants will include community leaders, groups of community members homogenous with respect to sex and age group, members of families affected by Lassa fever and those who were not, and individuals who have been identified to be involved in rodent-related activities like hunting, butchering and cooking. In Guinea, the research will attempt to capture changes over time as the rodent control intervention evolves.

Organisational set-up

The post holder will have two different roles.

- Firstly, he/she will lead the anthropological component of the project. In Guinea, where he/she will likely spend 8-9 months a year, he/she will lead the team of anthropological research assistants. In Sierra Leone, where he/she will likely spend 3-4 months a year, he/she will likely support and supervise the local team leader. Exact arrangements are still up for modification. Two senior anthropologists from Exeter and Durham University, respectively, are available for advising the post holder.
- Secondly, he/she will represent Charité's principal investigator, a medical epidemiologist, in all matters concerning the project. This requires an interest in other components of the study, particularly in epidemiology on which Charité also leads, and either basic competence in this discipline, or the willingness to acquire it. Since Charité also has responsibility for its own funds and the ones allocated to the University of Sierra Leone, the post holder may also be requested to follow up on financial matters.