



Call for Fellowships Afrique One-ASPIRE

TTP2: Thematic Training Program on Brucellosis Control and Prevention

[Ref: TTP2-Brucellosis-PhD1](#)

Project Title: Development and field-testing of novel brucellosis diagnostic tests for human populations and livestock

Enrolment: The PhD fellow will be enrolled at SUA, Tanzania or EISMV, Senegal.

Project Description: Current diagnostics for brucellosis (for both humans and animals) have several constraints which impact on planning and delivery of control programmes for brucellosis. A focus of this project will be to develop and field trial a range of novel diagnostic tools for human and/or animal populations.

This PhD project will build on and strengthen collaborative links between on-going projects within different countries involved in Afrique One-ASPIRE. In Tanzania SUA, NMAIST and KCRI/KCMC are all partners in the ongoing BBSRC-DfID funded Zoonoses in Emerging Livestock Systems (ZELS) *Brucella* project and are all involved in Afrique One-ASPIRE going forward. EISMV is also part of a ZELS brucellosis program. Through partnerships with Animal and Plant Health Agency (APHA) in the UK, the ZELS consortium and Afrique One-ASPIRE there are also opportunities to coordinate research activities and share techniques and approaches between East and West African countries. Possible lines of investigation for this studentship include:

1) APHA are currently developing and validating several novel carbohydrate- based serodiagnostic antigens for brucellosis. These include a range of antigens that are designed to differentiate i) sera that are positive in conventional serodiagnostic tests into those that are true positives and those that are false, and ii) between the antibody response induced by field infections and by vaccination with *B. abortus* S19 or *B. melitensis* 16M.

2) With a focus on human diagnostics the project could also explore application of proteomics or metabolomics approaches to identify biomarkers of brucellosis that

work in real patients, building on existing sample sets and samples collected through ongoing research studies.

3) Colleagues at Glasgow and APHA are currently developing and validating novel paper based DNA detection assays for *Brucella* and a range of other pathogens, which could be developed to provide field level data on infecting *Brucella* species.

4) The ZELS West Africa project has developed a training and proficiency testing programme for brucellosis and delivered this in several countries in West Africa. Extension of this programme to include Tanzania and other East African countries is something that could be included in this project plan.

5) Longer term options for this project include field evaluation of novel vaccine tools (e.g. as developed by APHA) that are promising options for a DIVA vaccine for *Brucella*.

Mentorship Team: Rudovick Kazwala (SUA); Joram Buza (NM-AIST); Bassirou Bonfoh (CSRS); Jakob Zinsstag (Swiss TPH); Jo Halliday, Simon Babayan, and Dan Haydon (UoG)

Potential Project Partners (outside the existing consortium members): John McGiven, Adrian Whatmore and colleagues at Animal and Plant Health Agency (APHA), UK and Simon Babayan (UoG)

Qualifications: The candidate must be a citizen of an African country. Candidates from any discipline contributing to One Health (e.g. public health, veterinary and animal sciences, epidemiology, molecular biology or immunology) will be considered. Candidates with an MSc degree in a different relevant field are preferred.

Training: Training will be provided within the Afrique One-ASPIRE consortium and with supervisory partners in the UK and Switzerland depending on needs and internal budget considerations.

For more information, contact the Co-leads:

Rudovick Kazwala, SUA, Tanzania, kazwala@gmail.com

Gilbert Fokou, CSRS, Côte d'Ivoire, gilbert.fokou@csrs.ci