

Cyril Buhler, Ph.D

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Senior consultant laboratory systems and diagnostic of infectious diseases

EXPERTISES AND COMPETENCIES

- Deep understanding of laboratory systems issues linked to public health interventions in resource limited settings in sub-Saharan Africa and Asia.
- Scientific and technical expertise to assist countries and organisations in the design and implementation of projects and programs to strengthen laboratory and disease surveillance capabilities
- Technical advice in grant portfolio development and implementation for a bilateral funding agency: development of request for proposals, proposal evaluation and grant progression reviews
- Evaluation of disease surveillance systems, laboratory diagnostic capabilities, Laboratory Quality Management Systems, Biosafety and Biosecurity standards at institution and national levels
- Technical expertise in the selection and specification of advanced laboratory equipment and reagents for procurement plans of infectious diseases diagnostics
- Project management and research studies on vector borne disease for various stakeholders including international NGOs, public research institutes and biotech companies.
- Ability to work collaboratively with teams in a multidisciplinary environment, including One Health projects and programs in low and middle-income countries
- Strong analytical and problem-solving skills with a track record of scientific publications in peer-reviewed journals. Ability to produce concept notes to support evidence-based decisions making
- Excellent communication, interpersonal and teamwork skills
- Excellent written and oral English and French language skills

PROFESSIONAL EXPERIENCES

Scientific and technical consultancies – Self-employed

Laboratory technical advisor – Mott MacDonald, The Fleming Fund, London UK

Oct 2016 – present

The Fleming Fund is a UK Government programme that seeks to strengthen antimicrobial resistance (AMR) surveillance systems in Africa and Asia to gather and share AMR data.

Main roles and responsibilities:

- Led the development of needs assessment tools for the AMR national system and laboratory surveillance sites in human and animal health facilities
- Led the development of a procurement catalogue for equipment and reagents for bacteriology laboratories adapted to AMR surveillance.
- Provided technical input in Monitoring and Evaluation at the central level (selection of KPIs) and for individual Fleming Fund country and Regional Grants (technical specialist on annual review panels)
- Member of country evaluation teams in Ghana, Nepal, Bhutan and Nigeria to develop request for proposals in collaboration with AMR inter-ministerial coordination committees
- Developed a resource handbook of guidance documents on antimicrobial resistance (AMR), antimicrobial stewardship (AMS) and infection prevention and control (IPC) resources in a One Health context with a specific focus on LMICs
- Produced technical memos to assist the decision making process by the Managing Agent

Subject Matter Expert – Quality in Laboratory – The Open University, Milton Keynes UK

Sept 2020 – Dec 2020

- Co-author of the module on “Quality in laboratory” as part of the curriculum on AMR for the Fleming Fund

Laboratory advisor for a comparative study on diagnostic methods for Cutaneous Leishmaniasis in Afghanistan – FINDdx, Geneva CH and HealthNet-TPO, Amsterdam, NL

Feb 2016 – June 2016:

- Conducted pre-trial laboratory and clinical capacity assessment for the comparison of diagnostic methods of Cutaneous Leishmaniasis (CL) in Kabul, Afghanistan.
- Advised and supported laboratory staff at the National Malaria & Leishmaniasis Control Program in Kabul on the implementation of a LAMP assay and a Rapid Diagnostic Test for CL detection
- Developed the terms of reference and scope of work for the laboratory staff
- Adapted guidelines and SOPs for DNA sample extraction, LAMP assay and RDT.
- Supervised shipment of the human samples from Afghanistan to Europe under Category B (UN 3373) regulation
- Provided QA on laboratory results and participated in the drafting of a manuscript for publication in the journal *EBioMedicine*

Technical Consultant on improving capacity for safe and secure detection of select febrile diseases in Afghanistan – HPRO, Kabul, Afghanistan (Study sponsors: LSHTM, Dstl UK DoD)

Sept 2014 – April 2015

- Developed the clinical study to evaluate the prevalence of Q fever and Rickettsial diseases among patient attending OPD with undifferentiated febrile illness
- Organized the procurement of laboratory reagents and supplies
- Supervised molecular diagnostic testing (ELISA) and performed data analysis
- Provided interim and final reports to stakeholders

Scientific and Technical consultant on an insecticide resistance study in 5 high-risk malaria provinces in Afghanistan – HealthNet-TPO, Amsterdam, NL

Feb 2014 – Mar 2015

- Provided technical support on insecticide resistance monitoring and methodologies
- Developed the study proposal and provide recommendations for project implementation to the laboratory staff in Kabul
- Identified and secured a collaboration for molecular genotyping of resistance mechanisms with researchers from the Liverpool School of Tropical Medicine
- Performed data analysis and actively participated in the final reporting and publication in *Malaria Journal*

Project Manager

Epidemiology study of the causes of non-malaria febrile illness in Afghanistan – HPRO, Kabul, Afghanistan (Study sponsors: LSHTM)

Feb 2014 – Mar 2014

- Participated in the development of the clinical study proposal for the differential diagnosis of febrile illness in 100 patients in a district hospital in Kabul
- Led the procurement of laboratory reagents and supplies
- Implemented and supervised commercial or in-house Real-Time PCR assay for the detection of virus (15) in biological samples
- Analysed laboratory data and draft interim and final reports to the sponsor of the study

Epidemiological study on the causes brucellosis and Q fever in the Herat province Afghanistan – HPRO, Kabul, Afghanistan

Jan 2013 – Mar 2013

- Provided scientific and technical assistance in the selection of immunoassays (ELISA) for the diagnostic of both diseases in 1000 human collected samples
- Implemented SOPs and guidelines for the sampling, transportation and processing of blood samples

Training in advance clinical diagnostic of infectious disease

HPRO, Kabul, Afghanistan – Henry Jackson Foundation, USA

Sept 2012 – Mars 2013

- Project coordinator of the training: responsible for the development of the curriculum and organised the planning for 20 invited speakers and lecturers
- Provided lectures on immunology and molecular biology including hands-on training on molecular diagnostic methodologies (ELISA and real-time PCR)
- Organised a student conference (2 days) on endemic infectious diseases in Afghanistan

Development of innovative cancer drugs based on therapeutic nucleic acids

DNA Therapeutics SA, Evry, France

Sept 2009 – July 2012:

- Team leader with responsibility of the R&D laboratory (2 research technicians, 1 PhD student)
- Designed and led research projects on the development of therapeutic nucleic acids for the treatment of solid tumors (formulation and targeting); cancer predispositions and response-to-treatment biomarkers
- Developed and Implemented the laboratory Quality Management System including Quality control assays for the quantification of nucleic acid from biological samples, bioactivity and integrity of the molecules
- Organised collaborations with industrial partners and research institutes

Scientific and technical laboratory support – Malaria Research and Training Center, Bamako, Mali

July 2008 – Jan 2009

- Organised the work of the laboratory on Leishmaniasis composed of 3 laboratory technicians
- Implemented a PCR-based method for the detection of *Leishmania major* from field-collected sandflies
- Managed laboratory activities including training in Molecular Biology and Good Laboratory Practice
- Organised oversees shipments of biological samples for the US National Institute Of Allergy and Infectious Disease

Post Doctoral Researcher

Development of single molecule next generation sequencing approaches

Postdoctoral scientist, Wellcome Trust Centre for Human Genetics, Oxford, UK

May 2009 – July 2009

- Performed overexpression and purification of DNA and RNA polymerases
- Performed DNA sequencing assays using single molecule

Development of innovative cancer therapies based on small DNA molecules

Postdoctoral scientist, Institut Curie, Orsay, France

Nov 2007 – March 2008

- Identified biomarkers using genomic and proteomic approaches.
- Performed gel shift assay and immune-detection of protein-DNA complex

Analysis of DNA double strand break during meiosis in the yeast *S. cerevisiae* using ChIP-chip assay and whole genome DNA microarrays

Visiting Fellow, National Cancer Institute, Bethesda, MD US

Sept 2002 – June 2007:

- Implemented high throughput DNA microarray analysis and quality control using real time PCR
- Developed of bioinformatic tools for DNA microarray data processing using MATLAB and File maker
- Drafted scientific publication in peer-reviewed journal and book chapter on molecular biology methodologies (qPCR and high throughput DNA microarrays)

EDUCATION AND QUALIFICATIONS

2002 PhD. Molecular and cellular biology University Paris VI Pierre et Marie Curie – France

1997 MSc. Molecular and cellular biology University Paris VI Pierre et Marie Curie – France

1996 BSc. Genetics and molecular biology – University Paris XI – Orsay, France

1995 BSc. Biochemistry and microbiology– University Paris XI – Orsay, France

Additional trainings and workshops

- Quality auditor for ISO 15189 biomedical laboratory using ISO 19011–*French Normalization Association (AFNOR) – La Plaine Saint-Denis, France 2020;*
- Biosafety and Biosecurity in biomedical laboratories – *Société Française de Microbiologie (SFM), Paris France, 2018;*
- Workshop on the WHO tricycle project: Integrated Global Survey on ESBL-producing *E. coli* using a "One Health" approach. *Utrecht University of Veterinary Science and World Health Organization, 2017;*
- Workshop on the FAO Assessment Tool for Laboratory and AMR Surveillance System (ATLASS) *Food And Agriculture Organization of the United Nations HQ, Rome, Italy, 2017;*
- ISO15189:2012 - Quality approach and accreditation for biomedical laboratory – *French Normalization Association (AFNOR) – La Plaine Saint-Denis, France 2015;*

- 5th Advanced Course on Diagnostics (ACDx) - *the Fondation Mérieux and the London School of Hygiene & Tropical Medicine – Les Pensières Annecy* – France 2014

Languages

- French: mother tongue
- English: proficient user (C2)

Memberships and affiliations

- Sfm – Société Française de Microbiologie (2017-present)
- BSF – Biologie sans Frontière (2021- present)
- SEDRIC – The Surveillance and Epidemiology of Drug-Resistant Infections Consortium (2021- present)

Additional information available at:

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