

Lucy Ochola

P.O. Box 25291, Nairobi-00603

Work: +254-41-522063/ 525043

Mobile: +254 721 486000

Email: laochola@gmail.com, lochola@primateresearch.org

EDUCATION: 2005, University of Basel, Switzerland, PhD
Medical Parasitology and Infection Biology
1998, University of Manchester, UK, MPhil
Department of Medicine and Chemistry
1996, University of Manchester, UK, BSc (Hons) in Plant Sciences

EMPLOYMENT:

August 2016- date	Head of Department of Tropical and Infectious Diseases, Institute of Primate Research (IPR)
March 2013- July 2016	Senior Research Scientist, IPR
March 2010- March 2013	Postdoctoral position, IPR
May 2005- October 2009	Postdoctoral position, KEMRI/ Wellcome Trust Research Labs, Kilifi/ Liverpool School of Tropical Medicine, UK
March- December 2000	Lab technologist, ICIPE
July 1998-December 1999	Lab technologist, F2G Ltd, Manchester, UK

RESEARCH EXPERIENCE:

- **Institute of Primate Research**
 - Evaluating novel diagnostics platforms for use in determining water purity/ contamination with parasites (malaria, Schistosomiasis mansoni)
 - Nano formulation and evaluation of antimalaria drugs
 - Assessing efficacy of HPV vaccine responses in the presence of helminth infections
 - Providing scientific support to malaria, dengue, HIV and HPV vaccine studies
 - Providing scientific support to junior scientists, coordinating scientific discussions.
 - Member of ethics review board committee
- **Liverpool School Tropical Medicine (KEMRI/ Wellcome Trust Research Labs, Kilifi)**
 - Worked on a project that analysed the involvement of ICAM-1 (human gene) in *P. falciparum* malaria. Role: project coordinator, assay development, assessing binding phenotypes, Flow cytometry analysis, in vitro culture of parasites and endothelial cells. Data analysis in STATA.
 - Supervised interns (BSc level) on 6-month lab placements
 - Member of program management committee, which coordinates and oversees unit wide activities
 - Member of Malaria Immunology management group. Ensuring smooth running of malaria research groups and coordinating shared resources.
 - Involved in coordination of sample collection, handling and storage of samples from the field and hospital.
- **KEMRI-Wellcome Trust Research Labs Kilifi and Swiss Tropical Institute, Basel Switzerland**
 - Development of enzyme assays (D-lactate), ELISAs (pLDH, HRP2) and real time PCR for parasite DNA quantification towards improving malaria diagnosis.

- Actively liaised with hospital staff in collection of blood samples.
- Lab technologist, **ICIPE, Kenya** and **F2G Ltd, Manchester UK**. Screening for mosquito repellents, larvicidal and insecticidal agents for malaria vector control. Developing control methods to deter termites using the Fungi, *Metarhizium anosopliae*,
- Synthesis and screening of antifungal agents against human *Candidiasis* and *Tinea spp.*

TEACHING EXPERIENCE:

- Research Associate, Department of Environmental Health, Nelson Mandela University, South Africa 2018- to date
- Part time Lecturer JKUAT 2015-2018- Research methodology
- Part time Lecturer Pwani University (2009), University of Nairobi and JKUAT (2014-2015)- General Biology, Basic and applied Immunology, Parasitological techniques, Immunological techniques, immunodiagnosis, immunoprophylaxis
- Assisted with tutoring on a course called “Capacity Building in Malaria, with a focus on e-Learning” April 21st to 19th May 2012; October 2014

SUPERVISION/ REVIEWER:

- PhD theses examined
 - Identification of regulatory factors of liver fibrosis in schistosomiasis- diseased children in Cameroon UCT, South Africa (2020)
 - Polymorphisms in the P. falciparum erythrocyte membrane protein 1 gene at two malaria endemic sites in Kenya, JKUAT (2017)
 - Immunizing the Olive baboon against S. mansoni with snail soluble proteins and characterization of the proteins UoN (2017)
 - Epidemiology, genetic diversity and diagnostic procedures of cryptosporidium species in Bungoma county, Kenya, JKUAT (2016)
 - Epidemiology, genetic diversity and diagnostic procedures of cryptosporidium species in Bungoma county, Kenya, JKUAT (2016)
- MSc theses examined
 - Recombinant expression of P. falciparum sexual-stage proteins and assessment of naturally acquired transmission blocking immunity UoN (2019)
 - Molecular mechanisms of reversal of piperazine and lumefantrine resistance in P berghei ANKA PAUSTI (2019)
 - Study in the activity of dengue virus and co-infection with Chikungunya virus before and after the 2013 outbreak on the Kenyan coast JKUAT (2017)
 - Quantitative buffy coat malaria test, QVC FAST test and SD Bioline malaria rapid test in malaria diagnosis at Ahero subcounty hospital in Kisumu county, JKUAT (2017)
 - Evaluation of efficacy of Plasmodium berghei expressed interferon gamma in mice, Pan African University, 2017
 - A comparison of two recently developed molecular based methods for the detection of Wucheria bancrofti in mosquito vectors, University of Nairobi, 2011.
- Supervised MSc theses
 - Impairment of Human papillomavirus vaccine induced responses during helminth infection (JKUAT) July 2019
 - Molecular characterization of influenza A virus subtypes in Olive baboons as potential vaccine targets (Pan African University), July 2018

- An investigation of the effect of worm infections (Schistosomiasis) on protective potential of candidate HIV vaccines in a primate model, May 2016
- P. knowlesi ligand-receptor process in placenta of baboons with malaria in pregnancy, April 2015.
- Assessing role of *S. mansoni* eggs in protecting against *P. berghei* infected mice, October 2013
- Peer reviewer
 - Invited to review a study protocol BMJ open. July 2020
 - Invited by The Medical Research Council to the UK-Kenya: Partnership on Non-communicable Diseases Panel Meeting 17th -18th October 2018, London.
 - Invited to review papers, published by Plos One, Journal of Infectious diseases and immunity

CONFERENCES AND COURSES ATTENDED:

- AIBBC Workshop and Conference 2017, 2019, 2020 (Nairobi, Kenya).
- SAALAS Conference, Cape Town, 1st- 3rd November, 2017. The Current state of Laboratory animal sciences in Kenya.
- 10th FAIS Conference, Tunisia December, 2017.
- 9th FAIS Conference, Nairobi, 1-4th December, 2014,
- International Scientific conference organized by IPR, Nairobi, September 2013
- December 2011: ASTMH Meeting, Baltimore. Presentation on Diagnostic Dilemmas in a changing malaria epidemiology. Sponsored by Novartis.
- January 2011: attended workshop on Financial and Grants management, Nairobi
- August 2010: attended a course on “Effective scientific communication and publishing” held at University of Nairobi
- November 2009: attended MIM meeting, Nairobi Kenya.
- May 2009: attended a 2 day workshop on understanding malaria infection and targeting interventions (Baltimore, USA) presented a poster
- September 2008: Attended a 2 day course on “Good Practice in Leading People”, organized by University of Oxford, Learning Institute (Kilifi, Kenya)
- December 2006: Attended a workshop on “Working with Pathogen Genomes”, organized by Wellcome Trust Advanced Courses (Kilifi, Kenya)
- November 2005: Attended a Multilateral initiative on Malaria (MIM) Meeting in Yaounde, Cameroon Nov 2005 (presented a poster on my PhD findings)

PUBLICATIONS:

Anthony O. Etyang, Ruth Lucinde,--- **Lucy B. Ochola**, Nelson Kilimo, Sande Charo, Namdala Emukule, et al. Seroprevalence of Antibodies to SARS-CoV-2 among Health Care Workers in Kenya medRxiv 2021.03.12.21253493; doi: <https://doi.org/10.1101/2021.03.12.21253493>

R. Lucinde, D. Mugo, C. Bottomley, R Aziza, J. Gitonga, ----**L. B. Ochola**, E. Barasa, P. Bejon, et al. Sero-surveillance for IgG to SARS-CoV-2 at antenatal care clinics in two Kenyan referral hospitals medRxiv 2021.02.05.21250735; doi: <https://doi.org/10.1101/2021.02.05.21250735>

Debes JD, Quadri NS, Sultan A, Ibrahim S---**Ochola**, Moussa A. 2021. Annals of Global Health, Risk of healthcare worker burnout in Africa during the COVID-19 pandemic. Annals of Global Health 87(1), p.5 DOI: <http://doi.org/10.5334/aogh.3150>

- Shemal M. Shah, Rodin H ---**Ochola Lucy** et al 2020. Hepatitis B Awareness and vaccination patterns among healthcare workers in Africa. *Am J Trop Med Hyg* 103(6): 2460-2468
- Gent V, Waihenya R, Kamau L, Nyakundi R, Ambala P, Kariuki T, **Ochola L** 2019 An investigation into the role of chronic *Schistosoma mansoni* infection on human papillomavirus (HPV) vaccine induced protective responses. *Plos Negl Trop Dis* 13(8): e0007704
- Nyariki JN, **Ochola L** et al (2019). Oral administration of coenzyme Q10 protects mice against oxidative stress and neuro-inflammation during experimental cerebral malaria. *Parasitology International* 71: 106-120
- Lázaro Gil, Ernesto Marcos, Alienys Izquierdo, Laura Lazo, Iris Valdés, Peris Ambala, **Lucy Ochola** et al. (2015). The protein DIIIC-2, aggregated with a specific oligodeoxynucleotide and adjuvanted in alum, protects mice and monkeys against DENV-2. *Immunol Cell Biol*; 93(1):57-66
- Joab O Nyamagiri, Faith I Onditi, **Lucy Ochola** et al. (2014) Plasmodium ligand receptor process in baboon (*Papio anubis*) placenta. *Biology Agriculture and Healthcare* 4(14):107-125
- Opi DH, **Ochola LB**, Tendwa M, Siddondo BR, Ocholla H, Fanjo H, Ghumra A, Ferguson DJ, Rowe JA, Williams TN. Mechanistic Studies of the Negative Epistatic Malaria-protective Interaction Between Sickle Cell Trait and α -thalassemia. *EBioMedicine*. 2014 Nov 1;1(1):29-36.
- Lázaro Gil; Alienys Izquierdo; Laura Lazo; Iris Valdés; Peris Ambala; **Lucy Ochola** et al. (2014). Capsid protein: Evidences about the partial protective role of neutralizing antibody-independent immunity against dengue in monkeys. *Virology* 456-457: 70-76
- Mutuiiri Shem P. M., Chege Gerald, **Ochola Lucy A.**, Munene Elephas W., Kiiio Maria, Mwethera Peter G., and Kariuki Thomas M. Serial in vivo passage of CXCR4-tropic simian/human immunodeficiency chimeric virus (SHIV_{89.6P}) in *Papio anubis*: a preclinical diseases model. *AIDS Research and Human Retroviruses*. October 2014, 30(S1): A183-A183.
- I. Valdés, L. Gil, J. Castro, D. Odoyo, R. Hitler, P. Kimiti, E. Munene, Y. Romeroa, **L. Ochola** et al (2013). Olive baboons: a non-human primate model for testing dengue 2 virus replication. *International Journal of Infectious Diseases* 17(12): e1176-81
- J. Anthony G Scott, J.A. Berkley, I. Mwangi, **L. Ochola** et al (2011). Relationship between falciparum malaria and bacteraemia in Kenyan children: a population-based, case-control study and a longitudinal study. *Lancet* 378 (9799): 1316-1328
- Lucy B. Ochola** et al. Specific receptor usage in *Plasmodium falciparum* cytoadherence is associated with disease outcome (2011). *Plos One* 6(3): e14741
- Mburu DM, **Ochola L**, et al (2009). Relationship between virulence and repellency of entomopathogenic isolates of *Metarhizium anisopliae* and *Beauveria bassiana* to the termite *Macrotermes michaelseni*. *J Insect Physiol.* 55(9):774-80.
- Ochola LB**, Vounatsou P, Smith T, Mabaso ML, Newton CR (2006). The reliability of diagnostic techniques in the diagnosis and management of malaria in the absence of a gold standard. *Lancet Infect Dis* 6(9): 582-8

Brent AJ, Oundo JO, Mwangi I, **Ochola L**, Lowe B, Berkley JA (2006) Salmonella bacteremia in Kenyan children. *Pediatr Infect Dis J* 25(3): 230-6

Ochola LB, Marsh K, Lowe B, Gal S, Pluschke G, Smith T (2005) Estimation of the sequestered parasite load in severe malaria patients using both host and parasite markers. *Parasitology* 131 (Pt 4): 449-58

PROFESSIONAL MEMBERSHIPS:

- Member of the African Research Network for Neglected Tropical Diseases 2020-
- Member of both the Council and education committee, International Union of Immunological societies (IUIS) 2016-
- Member of various IPR institutional committees: ethical review committee, animal care and use (ACUC)
- Kenya Society for Immunology (KSI) member and current secretary (2011 to date)
- President of Rotary Club of Kilifi (2008-2009).
- Treasurer of Rotary Club of Kilifi (2007-2008)

FUNDING AND ACADEMIC AWARDS:

- ARNTD, designing a metallo-immunosensor for detection of Schistosoma antigens in water. (2020), PI USD 25,000.
- AIBBC Workshop and Conference 2019 (Nairobi, Kenya). Hosted 2-day workshop at IPR-molecular diagnostics, point of care diagnostics, flow cytometry and HIV/AMR. USD54,000
- NRF, Computer guided development of antifungal agents for candidiasis (2020), co-PI, KSh 20M
- KEMRI- Wellcome Trust Research Programme (Oxford) Estimating the current and future threat of emerging/ reemerging zoonoses from free-ranging non-human primates along the Kenyan coast (2019), co-PI, GBP 20,674
- Hitachi, Japan. Industry-academia research grant on evaluating plants for antimalaria activity (2019), Co-PI USD 27,706
- ImmunoKenya 2018 (funds to support a training workshop on “how viruses hijack the immune system and cause cancers”), USD 57,343
- NRF Funds for a project on nano-formulation and evaluation of antimalaria drug (2018), PI, KSh 18M
- NACOSTI/NRF South Africa research funds (2014), CoPI KSh 3M
- Postdoctoral position funded by Consortium for national health research (CNHR), Kenya (2010) KSh 3.2M
- Novartis travel award to attending ASTMH conference
- Postdoctoral position funded by Medical research council, UK
- PhD Funded by Swiss National Science Foundation

ADMINISTRATION:

- Member of the organizing committee, AIBBC 2020 ONLINE conference and training in the COVID-19 era, 5-6 November, 2020.
- Member of the organizing committee, AIBBC 2019, 26-30 August, 2019. Hosted and organized 2 day workshop at IPR.
- Member of the organizing committee, ImmunoKenya 2018 workshop on “How viruses hijack host immunity leading to cancers”, Nairobi, Kenya (23rd -28th September, 2018)
- Chair of steering committee that assisted IPR achieve international accreditation under the Association for the Assessment and Accreditation of Laboratory Animal Care international (AAALAC) in 2017.
- Invited to attend a PhD in immunology stakeholders meeting at Moi University Eldoret, September 2016
- Chair of steering committee for the 2nd IPR strategic plan (2014-2019)

- 19th International Scientific conference 2013, Chair of the organizing committee
- Kenya Society for Immunology (KSI) member and current secretary (2011 to date): member of the organizing committee 9th FAIS conference, organized a number of KSI Symposia, student trainings
- Member of various IPR institutional committees: ethical review committee, animal care and use (ACUC)
- Community work and development, undertakes projects aimed at alleviating poverty through humanitarian means.
- President of Rotary Club of Kilifi (2008-2009).
- Treasurer of Rotary Club of Kilifi (2007-2008).

REFEREES:

Available upon request