

Lucy Muthoni Kamau (BVM, MSc, PhD)

1.1 Personal Profile

1.1.1 PERSONAL Details

Name: Lucy Muthoni Kamau

Department: Animal Sciences, School of Agriculture and Environmental Sciences

Designation: Associate Professor and Postgraduate Coordinator, Department of Animal Sciences

Email: kamau.lucym@ku.ac.ke

Area of Specialization: Parasitology, Molecular Biology, Vector Biology, Recombinant vaccines and Vaccinology, infectious diseases.

Research Interests:

- Molecular parasitology focusing on host-parasite interactions.
- Isolation and characterization genes and Recombinant expression of gene products
- Vaccinology and genomics.
- RNA interference
- Vector Biology focusing on vector-borne and other infectious diseases.
- Drugs discovery research
- Microbiology
- Research on emerging livestock such as donkeys and camels
- Honeybee health and impact of Climate change

[Research Gate](#)

[Google Scholar](#)

<https://orcid.org/0000-0002-8076-3803>

1.1.2 ACADEMIC AND PROFESSIONAL QUALIFICATIONS

PhD. Applied (Molecular) Parasitology-Kenyatta University - **2000-2006**

Master of Science (Comparative Mammalian Physiology), University of Nairobi, College of Agriculture and Veterinary Sciences- **1989- 1993**

Bachelor of Veterinary Medicine - **1985- 1989**

Kenya Advanced Certificate of Education (K.A.C.E). Kaaga Girls High School, Meru, Kenya. -**1982-1983**

Kenya Certificate of Education (K.C.E). Kiambu High School, Kiambu, Kenya. - **1978- 1981**

1.1.2.1 ADVANCED TRAINING COURSES AND PROFESSIONAL DEVELOPMENT UNDERTAKEN

Basic Counselling Professional Course. A comprehensive Program covering essential counselling techniques, communication skills, ethics, and practical application. Offered by ELEARN training Institute Thika, NITA/TRN/2652; On 3rd Sept 2025.

International Leadership Workshop: Empowering Leaders for Transformation of Africa. Titled “Being a Leader and Effective Exercise of Leadership ((BAL): An Ontological and Phenomenological Model”, held at Presbyterian University of Eastern Africa, Main Campus, Kikuyu. On 18th – 23rd August 2025.

Certified Professional Mediator: Completed the 40 hours Professional Mediation Course held at Thika by ELEARN Training Institute NITA/TRN/2652; from 14th to 18th July 2025.

The International Writing Program (IWP), A British Academy-funded partnership project in collaboration with Lancaster University, UK, An Africa Research & Innovation Partnership conducted from Sept 2024 to May 2025.

Bee Keeping Course. December 2022 At National Beekeeping Institute, Ministry of Agriculture and Livestock and Fisheries Development, Nairobi Kenya.

Foot and Mouth Disease Investigation Training Course for Eastern Africa. Organized by the FAO Virtual Learning Center for Eastern Africa, and EuFMD in **September 2021.**

Introduction to Rift Valley Fever organized by the EuFMD, Funded by European Union and European Commission for the Control of Foot and Mouth Disease; Foot and Mouth Disease and Similar Transboundary animal diseases (FAST) in **November 2021.**

Resource Recovery from Waste training. By Kenyatta University partnership with Lancaster University. U.K.- **January 2019.**

ISO9001:2015 Quality Management Systems Internal Auditor Training, by SGS for Kenyatta University **March 2017**

Training of Trainers: Student Training for Entrepreneurial Promotion (STEP). Sponsored by a collaboration between Makerere University Business School, (Uganda), Leuphana University, (Luneburg, German) and Kenyatta University. **January 2015.**

Course on Teaching Methodology, Setting and administration of examinations, Marking and Analysis of Scores. By Kenyatta University Center for Teaching Excellence and Evaluation. **May to November 2013**

Publishing Scientific Research Seminar by Springer Publishers at Kenyatta University. May 2013

ISO 9001:2008 Quality Internal Auditor training, by SGS for Kenyatta University. **October 2011**

Training for Mentors, Kenyatta University. **May 2010**

ISO14001:2004 Environmental Management System Awareness Training by KEBS at Kenyatta University, Nairobi, Kenya. **May 2009**

Training on ISO 14001-2004 Environmental Management System Awareness Training, by SGS at Kenyatta University, Nairobi, Kenya. **June- July, 2008**

Public Procurement training workshop for Senior Staff of Kenyatta University. Kenyatta University, Nairobi, Kenya, Represented, Chairman, Dept. of Zoological Sciences. **11th April 2008**

International School and conference on Bioinformatics of African Pathogens and Disease Vectors, BecA/ ILRI Campus, Nairobi, Kenya. **May 27th to 29th 2007**

Advanced Biometrics Course on Techniques in Experimental design and Data Analysis at International Livestock Research Institute (ILRI), Nairobi, Kenya. **February 2002**

Course on Basic Biometrics Techniques in Experimental design and Analysis. International Livestock Research Institute (ILRI), Kenya. **April 2001**

Microsoft Office user specialist course, by Cyber Networks at ILRI Nairobi, Kenya. **January 2001**

1.1.3 EMPLOYMENT HISTORY

Associate Professor of Parasitology: Department of Animal Science, School of Agriculture and Environmental Sciences, Kenyatta University- **July 2025 to date.**

Chairperson, Renewed appointment: Department of Animal Science, School of Agriculture and Enterprise Development, Kenyatta University- **June 10th, 2022, to 10th June 2024**

Chairperson, Department of Animal Science, School of Agriculture and Enterprise Development, Kenyatta University- **June 10th, 2020, to 10th June 2022**

Program Coordinator, School of Agriculture and Enterprise Development, Kenyatta University, Kitui Campus- **18th September 2018 to June 10th, 2020**

Senior Lecturer, Department of Animal Sciences, School of Agriculture and Enterprise Development, Kenyatta University, Nairobi, Kenya. **May 2018 to July 2025**

Senior Lecturer, Department of Zoological Sciences. Kenyatta University, Nairobi, Kenya. **June 2014 to May 2018**

Technical Research Associate (Postdoctoral research). Vector Genetics and Genomics, International Livestock Research Institute (ILRI), Nairobi Kenya. **January- December 2007**

Lecturer, Department of Zoological Sciences, Kenyatta University, Nairobi, Kenya. **2003 to June 2014**

Tutorial Fellow, Department of Zoological Sciences, Kenyatta University, Nairobi, Kenya. **1994 to 2002**

Graduate fellow, MSc (Comparative Mammalian Physiology), University of Nairobi. **1989- 1991**

Private Veterinary Practice in Nairobi. - 1994-1995

Veterinary Officer (Hygiene) with Kenya's Ministry of Agriculture and Livestock Development, Deployed at Farmers' Choice Slaughterhouse and Meat Processing Factory. **1991-1993**

University Duties and Responsibilities

Chairperson of Department

- Providing Leadership and coordination to staff and students taking courses in the department of Animal Sciences
- In charge of all administrative duties and academic programmes in the department.

Program Coordinator, School of Agriculture and Enterprise Development (SAED), Kitui campus.

- Liaising with Chairmen of Departments in the School in all matters on units' allocation, time-tabling, unit teaching, and examinations at the campus level.
- Coordination of academic, administrative, and other relevant issues affecting students in various school programs at the campus.

Associate Professor duties and responsibilities

- Providing leadership and guidance in curriculum review and developing new academic programs in line with the market demands.
- Leadership in School and departmental committees.
- Writing winning research grants and corroborations.
- Community service and solving societal issues.
- Teaching, examining, and conducting practical courses in Parasitology, Microbiology, Medical

Entomology, Biochemistry and Molecular Biology for undergraduate students.

- *Teaching, conducting practical classes and examination of Masters Students in Applied Parasitology, Medical Parasitology, Molecular Biology and Biotechnology courses.*
- *Departmental Coordinator of Parasitology courses*
- *Academic Advisor for 1st year Students in BSC, BSc (Animal Health, B Ed (Sc) programmes*
- *Review and upgrading of course syllabuses and developing syllabuses for new courses for undergraduate and postgraduate programs.*
- *Coordinating weekly seminars and journal club meetings for the department.*
- *Departmental librarian -maintaining the collection of books and other scientific literature, in print or electronic format and distributing to students and other staff.*
- *Writing Research proposals for funding and Conducting Research: E.g Current research Project: Cloning and recombinant expression of ferritin2 proteins from Rhipicephalus appendiculatus and evaluation of vaccine potential in rabbits and cattle. Funded by NACOSTI 2012 Women Scientist grant.*
- *Conducting Research as Principal and as Co- Investigator*
- *Supervising Students Research and Thesis at Postgraduate and undergraduate projects*
- *Providing clinical and animal husbandry management services to farm and laboratory animals of Zoological Sciences department and surrounding farms.*
- *Convenor and member of committees; Post-graduate studies committee, Under-graduate studies, dairy and poultry income-generation Project committees of the Department of Zoological Sciences*
- *Prepared proposals and housing plan for the establishment of dairy farm at the Zoological Sciences department.*

1.1.4 FELLOWSHIPS, ACHIEVEMENTS, AND AWARDS

ISO Internal Auditor in Kenyatta University (ISO 9001:2008 and ISO9001:2015): 2008 to the present

KU Staff Mentor 2010 to the present

NACOSTI WOMEN SCIENTIST GRANT January 2013 to 2018: *Cloning and recombinant expression of ferritin2 proteins from Rhipicephalus appendiculatus and evaluation for vaccine potential in rabbits and cattle.*

German Academic exchange Service, (DAAD) postdoctoral research fellowship, August 2012- January 2013: *Research on Ferritin proteins and iron metabolism in ticks.*

Israel- Kenya collaboration scholarship: At Weitz Center for Development studies, the University of Jerusalem, Rehovot, Israel. 28th August- 7th September 2011

Focus of collaboration: Lake Victoria- training on Local Strategic Development.

Commonwealth Academic Scholarship Commission in the UK. October 2009- March 2010 Research Fellow: *Functional genomics research project, at the University of Aberdeen, School of Biological Sciences, in the UK.*

Title research project:

RNAi and gene knock-down in the red poultry mite, Dermanyssus gallinae; focus on Cathepsin D and Histamine Releasing Factor.

Main techniques used: *RNA extraction, RT- PCR, generation of dsRNA and introduction into poultry mite. Screening for gene- knockdown by PCR, western blotting, enzyme activity assays*

Supervisor: Dr Alan Bowman

Junior Research Fellowship awarded by Department of Production Ecology, Wageningen University graduate School, Laboratory of Virology in The Netherlands April- May 2007

Research focus: *Baculovirus–Insect cell expression of eukaryotic genes.*

Supervisors: *Dr Monique Van Oers and Professor Just M. Vlak Yust and Dr Monique*

Techniques and Achievements:

- *Expressed and purified recombinant Ra86 antigen for use in trial vaccination in rabbits, back in Nairobi Kenya.*
- *After the training initiated baculovirus insect cell expression and trained colleagues in Vector genetics and genomics laboratory at International Livestock Research Institute, Nairobi, Kenya.*

Technical Research Associate at the International Livestock Research Institute (ILRI), Nairobi Kenya, January- December 2007:

Research focus: *Vector Genetics and Genomics of tick vectors, Supervisor: Dr. Richard Bishop, Scientist and Project Leader.*

National Institutes of Health (NIH), USA Travel Grant award: to attend the 8th Annual Conference on vaccine Research, Venue: Marriott Inner Harbor Hotel, Baltimore, Maryland, U.S.A- 9th -11th May 2005

Conference and training Fellowship Award: To attend Biology of Disease Vectors Summer Conference, Colorado state University Colorado, U.S.A.- 16th -30th June 2002

DAAD in-country PhD Scholarship and Doctoral research fellow, at the International Livestock Research Institute (ILRI), Nairobi Kenya. (PhD research registered at Kenyatta University). January 2000 to 2005:

- *Carried out research and produced publications and other research outputs, in line with personal objectives agreed in the PhD proposal development.*
- *Participated in institute and developmental seminars aimed at sharing research outcomes and building interdisciplinary collaboration within and outside the institute.*
- *Presented research findings in local and international conferences..*

Research Training Fellowship: Tropical Insects Entomology Course at International Centre for Insect Physiology and Ecology (I.C.I.P.E.), Kenya. 1999 Course and research.

Hosted by collaboration between Swedish University of Agricultural Sciences, I.C.I.P.E. and Kenyatta University.

Norwegian Agency for Development Cooperation. (NORAD) Scholarship: to Pursue MSC in University of Nairobi, Kenya

Graduate fellow, MSc (Comparative Mammalian Physiology): Thesis Title: Survey of Cobalt related Vitamin B₁₂ deficiency in goats in small scale-farming communities in regions of the Kenyan Rift Valley. - 1989- 1991

Research Skills acquired: Doctorate and Post-doctoral levels

- *Isolating genes from genomic and complementary DNA (cDNA) for use as vaccine candidates for tick vectors of diseases*
- *Cloning of the isolated genes in Plasmid vectors*
- *Screening for recombinants, using Polymerase Chain Reaction (PCR) and other gene expression procedures.*
- *Screening recombinant DNA libraries using molecular biology techniques such as hybridization.*
- *Bacterial Expression of recombinant proteins (antigens),*
- *Purification of recombinant proteins, analysis by SDS PAGE, Concentration assays, dialysis*
- *Baculovirus- Insect cell expression of eukaryotic genes.*

- Purification of Baculovirus expressed recombinant proteins by ultra-centrifugation, analysis by SDS-PAGE, concentration assays
- Evaluation of recombinant antigens for vaccine potential in rabbits as well as bovine hosts.
- Western Blotting, ELISA assays
- Bioinformatics Analyses, phylogenetics, protein structure and functional analyses

Field research Techniques and experience

- Field sampling of Blood from goats, Preservation of blood and transportation to the laboratory.
- Separation of blood components, red cells, white cells, plasma
- Blood cell counts and hemograms analysis
- Haematology and haemoglobin analysis
- Radio-immunoassays for Vitamin B₁₂ levels in plasma

Entomological research Techniques and experience

- Ecological studies of mosquitoes' behaviour, breeding and control
- Rearing of Mosquitoes in the laboratory
- Mosquitoes host- seeking behaviour particularly the role of odours
- Field entomological sampling techniques
- Malaria diagnostic techniques- microscopy, cytokine ELISA
- Rearing of tsetse flies
- Laboratory diagnosis of trypanosomes,
- Isolation and culturing of trypanosomes

1.2 PUBLICATIONS

Book Chapters

James Kinoti Njue¹, Margaret W. Muturi², **Lucy M. Kamau**³, and Raphael Lwembe. "Closing the Cervical Cancer Gap: Integrating HPV Genotyping, Cervical Dysplasia, Screening, Vaccination, and Community Awareness in Eastern Kenya", submitted to Open Access book "Advances in Cervical Cancer - Diagnostic and Therapeutic Considerations", ISBN 978-0-85466-090-2. Accepted for publication on September 08, 2025.

1.2.1 Referred Journals

1. James Kinoti Njue, Margaret Muturi, **Lucy Kamau**, Raphael Lwembe (2025). Cervical cancer in eastern Kenya (2018–2020): Impact of awareness and risk perception on screening practices. *Open Health* 2025; 6: 20250069.
2. J. Cheruiyot, L. Kabuage, P. Nguhiu, **L. Kamau** (2024). Status of Indigenous Chicken Production and Assessment of Local Feed Resources In Nyamira County, KENYA. *International Journal of Novel Research and Development* © 2024 IJNRD | Volume 9, Issue 10 October 2024 | ISSN: 2456-4184 | IJNRD.ORG (www.ijnrd.org)
3. Collins Ngetich, **Lucy Kamau**, Jemimah Simbauni, Charles Mwendia, Milton Owido, Irene Kiio, Oswald Matika, Sarah Foster, Michael Birkett, Appolinaire Djikeng, Kellie Anne Watson, Naftaly Githaka (2023). The potential for use of haematological and anti-IgE humoral responses as phenotypic markers for tick resistance in cattle. *Current Research in Parasitology & Vector-Borne Diseases* 5 (2024) 100159. <https://doi.org/10.1016/j.crvbd.2023.100159>
4. Magara Jeremiah, **Lucy Kamau**, Grace Nyambati, Hastings Ozwara (2023). *Rubia cordifolia* L. Crude Aerial Part Extracts Show a High Potential as Antimalarials against Chloroquine Resistant *Plasmodium falciparum* Strains *in vitro*. **Pharmacognosy. Res.**, 2023, 15(2):288-296. Original Article <https://www.phcogres.com/article/2023/15/2/105530pres152031>
5. James Kinoti Njue , Margaret Muturi, **Lucy Kamau**, and Raphael Lwembe (2022). Primary and Triage Cervical Screening Diagnostic Value of Methods for the Detection of Cervical Dysplasia. *BioMed Research International* Volume 2022, Article ID 1930102, 10 pages. doi: 10.1155/2022/1930102. eCollection 2022. <https://pubmed.ncbi.nlm.nih.gov/36164451/>

6. Caroline Makena Lepore, **Lucy Kamau**, Esther Kanduma (2022). Molecular Prevalence of Entamoeba Species among Diarrheal Patients in Eastern Kenya *European Journal of Biology and Biotechnology* www.ejbio.org. Vol 3 | Issue 1 (pg. 39-46) January
7. Ruth Mogendi, **Lucy Kamau** and Ngethe Muhoho (2022). Prevalence of Intestinal Parasites and Their Transmission Risk Factors among Inmates of Naivasha and Kisii Prisons in Kenya. *International Journal of TROPICAL DISEASE & Health* 43(5): 1-7, 2022; Article no.IJTDH.84435 ISSN: 2278–1005, NLM ID: 101632866. <http://journaleprints.uk/id/eprint/502/1/1228-Article%20Text-2315-1-10-20221012.pdf>
8. Ednah N. Ototo, Joseph O. Ogutu, Andrew Githeko, Mohammed Y. Said, **Lucy Kamau**, Didacus Namanya, Stella Simiyu, Stephen Mutimb. (2021). Forecasting the Potential Effects of Climate Change on Malaria in the Lake Victoria Basin Using Regionalized Climate Projections. *Acta Parasitologica*. <https://doi.org/10.1007/s11686-022-00588-4>
9. James Kinoti Njue1, Margaret W. Muturi, **Lucy Kamau**, Joseph Muriuki and Raphael Lwembe (2021). Human Papillomavirus Infection: Molecular Epidemiology and Acceptability of Screening and Vaccination among Women in Eastern Kenya Counties. *African Journal of Health Sciences Volume 34, Issue No. 3, May – June 2021*: 278-293. <https://www.ajol.info/index.php/ajhs/article/view/212304>
10. James Kinoti Njue, Margaret Muturi, **Lucy Kamau**, and Raphael Lwembe (2021). Human Papillomavirus Types Associated with Cervical Dysplasia among HIV- and Non-HIV-Infected Women Attending Reproductive Health Clinics in Eastern Kenya. *BioMed Research International Volume 2021*, Article ID 2250690, 10 pages <https://doi.org/10.1155/2021/2250690>.
11. Daniel Kamua Nganga, Harry Asena Musonye, Patrick Kamau Kamande, **Lucy Muthoni Kamau** (2020). *Profiling Antibiotic Resistant Bacteria and Antibiotic Residues in Raw Chicken Products Sold around Kenyatta University, Kenya*. *International Journal of Applied Biology* 4(2), 2020 ISSN : 2580-2410, eISSN : 2580-2119
12. Joyce Nyirongo, **Lucy Kamau**, Jemimah Simbauni, Victor Mwangi, Esther Kagasi, Faith Onditi and Hastings Ozwara (2020). Drug Recovery: Effect of Astemizole – Methylene Blue Combination Therapy against Plasmodium Strains in vitro. *South Asian Journal of Parasitology* 4(3): 9-17, 2020; Article no.SAJP.60063. <https://www.researchgate.net/publication/344238195>
13. Mung'ang'a EM., **Kamau LM.** and Maingi JM. (2020). Amoebiasis levels in relation to sanitation and personal hygiene among patients attending Kauwi and Muthale hospitals in Kitui County, Kenya. *World Journal of Pharmaceutical and Medical research* Vol.6(6), 67-70 ISSN 2455-3301. <https://www.wjpmr.com/download/article/68052020/1590826391.pdf>
14. Samuel Kamonge, **Lucy Kamau** and Ngethe Muhoho (2020). Prevalence of Intestinal Parasitic Infections and Transmission Risk Factors in Primary School Children in Mbeere North Sub-County, Embu County, Kenya. *International Journal of Pathogen Research* 4(3): 1-7, Article no. IJPR.57916 ISSN: 2582-3876. <https://www.academia.edu/45267928/>
15. Ruth Munene, **Lucy Kamau** and Muhoho Ng'ethe 2019. *Schistosoma mansoni* Infections occurring in school going children in a non-endemic area as a result of associated activities in a neighboring endemic area. *Applied Science and Innovative Research* 3(1), 57-65. <http://www.scholink.org/ojs/index.php/asir/article/view/1813/1969>
16. Robert Omondi, **Lucy Kamau** (2018). Ownership and Utilization of Insecticide Treated Nets among Primary School Children Following Universal Distribution of Insecticide Treated Nets in Kasipul, Homa-Bay County, Kenya. *International Journal of Sciences: Basic and Applied Research (IJSBAR)*. Volume 40, No 1, pp 26-36. <https://www.semanticscholar.org/paper>
17. Robert Omondi, **Lucy Kamau** (2018). Reduced Plasmodium Infection in Primary School Children Following Universal Distribution of Insecticide Treated Bed Nets in Kasipul, Homa-Bay County, Kenya. *International Journal of Sciences: Basic and Applied Research (IJSBAR)* Volume 38, No 1, pp 1-9 ISSN 2307-4531. <https://www.gssrr.org/index.php/JournalOfBasicAndApplied/article/view/8660>
18. Purity Nguhiu, **Lucy Kamau**, Kelvin Kinyua and Paul Matonge (2017). Seroprevalence of Porcine Cysticercosis and Associated Risk Factors in Pigs Slaughtered in Abattoirs in Thika, Kiambu County, Kenya. *Journal of Life Sciences* 11 :321-326 doi: 10.17265/1934-7391/2017.07.002. *Journal of Life Sciences* 11 (2017) 321-326 doi: 10.17265/1934-7391/2017.07.002 Corpus ID: 56387276 https://pdfs.semanticscholar.org/b2c8/375f94e9c93ca0b3c871f21a4237bb23c33b.pdf?_gl=1*1cyz9vo*

[ga*MjQ5ODc3ODE1LjE2NDMxMTc3NzE.*_ga_H7P4ZT52H5*MTY3ODg5ODA0OC4xLjEuMTY3ODg5OTlwNS4wLjAuMA..](#)

19. Chebet Too, **Kamau Lucy**, Syprine Otieno (2017). Prevalence of Amoebiasis among Patients Attending Longisa County Hospital, Bomet County, Kenya. International Journal of Sciences: Basic and Applied Research (IJSBAR) ISSN 2307-4531: Vol 36 (8) pg 53-61
<https://www.gssrr.org/index.php/JournalOfBasicAndApplied/article/view/8364>
20. Janeffer N. Njuguna, Michael M. Gicheru, **Lucy M. Kamau** and Peter M. Mbatha (2017). Incidence and knowledge of bovine brucellosis in Kahuro district, Murang'a County, Kenya. Tropical Animal Health Production 49(5):1035–1040 DOI 10.1007/s11250-017-1296-6.
<https://pubmed.ncbi.nlm.nih.gov/28466240/>
21. Evalyne Wambui Kanyina, **Lucy Kamau M.** and Margaret Muturi (2017). Cervical precancerous changes and selected cervical microbial infections, Kiambu County, Kenya, 2014. A cross sectional study. BMC Infectious Diseases 17(1):647 DOI: 10.1186/s12879-017-2747-4
<https://pubmed.ncbi.nlm.nih.gov/28946854/>
22. Ototo EN, Zhou G, **Kamau L**, Mbugi JP, Wanjala CL, Machani M, Atieli H, Githeko AK, Yan G (2017). Age-specific Plasmodium parasite profile in pre and post ITN intervention period at a highland site in western Kenya. Malaria Journal. 16(1):466. doi: 10.1186/s12936-017-2119.
<https://malariajournal.biomedcentral.com/articles/10.1186/s12936-017-2119-y>
23. Collince J. Omondi, Daniel Onguru, **Lucy Kamau**, Mark Nanyingi, George Ong'amo and Benson Estambale (2017). Perennial transmission of malaria in the low altitude areas of Baringo County, Kenya. Malaria Journal 17;16(1):257.doi: 10.1186/s12936-017-1904-y.
<https://pubmed.ncbi.nlm.nih.gov/28623926/>
24. Collince Jared Omondi, **Lucy Muthoni Kamau**, Humphrey Kariuki Njaanake, Douglas Anyona, Daniel Onguru, Benson Estambale (2017). Evaluation of Three Rapid Diagnostic Test Kits in the Diagnosis of Plasmodium Species Infections among Primary School Children in Baringo County, Kenya. Open Journal of Clinical Diagnostics. 7(1): 31-44.
<https://www.scirp.org/journal/paperinformation.aspx?paperid=74916>
25. Menza C. Nelson 1,*, Muturi W. Margaret 1 and **Lucy Kamau 2** (2017). Occurrence of Aflatoxigenic Aspergillus Species in Various Varieties of Peanuts Produced in Western Kenya. **Preprints** (www.preprints.org) | NOT PEER-REVIEWED | Posted: 9 January 2017
DOI: [10.20944/preprints201701.0044.v1](https://doi.org/10.20944/preprints201701.0044.v1)
26. **Kamau L.M.**, Skilton R.A., Githaka N, Kiara H., Kabiru E., Shah T., Musoke A., Bishop R.P. (2016). Extensive polymorphism of Ra86 genes in field populations of Rhipicephalus appendiculatus from Kenya. [Ticks Tick Borne Diseases](#). Vol 7 Issue 5, 772-781 doi: 10.1016/j.ttbdis.2016.03.011. Epub 2016 Mar 17. <https://pubmed.ncbi.nlm.nih.gov/27051976/>
27. Esther G. Kanduma, Joram M. Mwacharo, Naftaly W. Githaka, Peter W. Kinyanjui, Joyce N. Njuguna, **Lucy M. Kamau**, Edward Kariuki, Stephen Mwaura, Robert A. Skilton and Richard P. Bishop (2016). Analyses of mitochondrial genes reveal two sympatric but genetically divergent lineages of Rhipicephalus appendiculatus in Kenya. Parasites & Vectors 9:353
<https://parasitesandvectors.biomedcentral.com/articles/10.1186/s13071-016-1631-1>
28. Nelson C. Menza, Muturi W. Margaret, **Kamau M. Lucy** (2016). Oil Contents and Aflatoxin Levels in Peanuts Varieties Produced in Busia and Kisii Central Districts, Kenya. Tropical Medicine and Surgery 4:1 February 2016. [Tropical Medicine & Surgery](#) 4(1):204. DOI: 10.4172/2329-9088.1000204
<https://www.researchgate.net/publication/296443763>
29. Nelson C. Menza, Muturi W. Margaret, **Kamau M. Lucy** (2015). Incidence, Types and Levels of Aflatoxin in Different Peanuts Varieties in Busia and Kisii Central Districts, Kenya. **Conference Paper**. Open Journal of Medical Microbiology > Vol.5 No.4, December 2015
<https://www.scirp.org/journal/paperinformation.aspx?paperid=61705>
30. J.O. Kerubo*, 1, Syprine Otieno1 and **Lucy Kamau1** (2015). Analysis of utilization of food resources by the African wood mouse Hylomyscus denniae endorobae (Rodentia: Muridae) from Ihururu Forest, Kenya. Asian Journal of Conservation Biology, July 2015. Vol. 4 No. 1, pp. 37-42 AJCB: FP0053 ISSN 2278-7666 ©TCRP 2015
31. Githaka, N., Konnai, S., Bishop, R., Odongo, D., Lekolool, I., Kariuki, E., Gakuya, F., **Kamau, L.**, Isezaki, M., Murata, S., Ohashi, K. (2014). Identification and sequence characterization of novel

- Theileria genotypes from the waterbuck (*Kobus defassa*) in a *Theileria parva*-endemic area in Kenya., *Veterinary Parasitology* (2014), <http://dx.doi.org/10.1016/j.vetpar.2014.02.056>
32. Orucho Vincent Obino, **Lucy Kamau**, Michael Gicheru (2013). Infections of *Anopheles Gambiae* Mosquitoes with *Plasmodium* Oocysts and its Effects on Highland Malaria in Kisii Town and its Surroundings. *American Journal of Epidemiology and Infectious Disease*, 2013, Vol. 2, No. 1, 13-18
 33. Matonge P.M., Muturi M and **Kamau Lucy M** (2013). Persistence of *Schistosoma haematobium* and Geohelminths infections in residents of two villages in Msambweni District of Coast Province, Kenya. *American Journal of Epidemiology and infectious disease*. 1 (4) 41-46.
 34. **Lucy M. Kamau**, Harry W. Wright, Alasdair J. Nisbet, Alan S. Bowman (2013). Development of an RNA-interference procedure for gene knockdown in the poultry red mite, *Dermanysus gallinae*: Studies on Histamine Releasing Factor and Cathepsin-D. *African Journal of Biotechnology* 12(12) 1350-1356.
 35. Maina T.S.N., **Kamau L.**, Kabiru E.W., Ogata B.R., Shitandi A (2013). Evaluation of bacteriological quality of aircraft food at the Jomo Kenyatta International Airport, Nairobi, Kenya. *Science Research* 2013: (1): 1-8
 36. **L. Kamau**, R.A. Skilton, D.O Odongo, S. Mwaura, N. Githaka, E. Kanduma, M. Obura, E. Kabiru, A. Orago, A. Musoke and R.P Bishop (2011). Differential transcription of two highly divergent gut-expressed Bm86 antigen gene homologues in the tick *Rhipicephalus appendiculatus* (Acari: Ixodida). *Insect Molecular Biology* 2011 20 (1) 105-114. PMID: 20854482. DOI: [10.1111/j.1365-2583.2010.01043.x](https://doi.org/10.1111/j.1365-2583.2010.01043.x)
 37. David O. Odongo, **Lucy Kamau**, Robert Skilton, Stephen Mwaura, Cordula Nitsch, Evans Taracha, Antony Musoke, Claudia Daubenberger, Richard Bishop (2007). Vaccination of cattle with TickGARD induces cross-reactive antibodies binding to conserved linear peptides of Bm86 homologues in *Boophilus decoloratus*. *Vaccine* Vol. 25 (2007); 1287-1296. PMID: 17070625. DOI: [10.1016/j.vaccine.2006.09.085](https://doi.org/10.1016/j.vaccine.2006.09.085)
 38. **Lucy Muthoni Kamau** (2006); Isolation, recombinant expression and Characterization of polymorphism in the Bm86 vaccine antigen homologues from *Rhipicephalus appendiculatus*. PhD Thesis, Kenyatta University.
 39. **Lucy Muthoni Kamau** (1992); Survey of Cobalt- related vitamin B12 deficiency in goats in small farming communities in some regions of the Kenyan Rift valley. MSc. Thesis, University of Nairobi.

1.2.3 PATENTED INVENTION OR INNOVATIONS

- i. Was the first ever to clone and characterize the encoding genes and generate recombinant vaccine based on *Rhipicephalus appendiculatus* gut antigen (based on Ra86 Clone 85A and Clone 92A). This is the only promising anti-tick vaccine from the tick vector species and has been going through further improvements by using different expression systems and combining it with other potential antigens to evaluate efficiency of cocktail vaccines. The vaccine to be patented in future after further field testing.
- ii. Conducted collaborative community engagement research that involved field testing of the efficacy of the 'Infection and treatment method' (ITM) vaccine for East Coast Fever (ECF) or Theileriosis caused by the protozoan, *T. parva*. ITM vaccine is the only *Theileria parva* vaccine demonstrated to protect cattle against developing severe ECF disease. This was the first ever vaccine developed against East Coast Fever or Theileriosis in cattle. The tick-borne disease is endemic in most countries in sub-Saharan Africa.

1.2.6 LEARNING MODULES (Kenyatta University)

KAS 103 Animal Ecology and Environment
 KAS108 Biochemistry 1
 KAS202 Biochemistry II
 KAS857 Nutritional Biochemistry

1.2.7 REVIEWED CONFERENCE PAPERS

Presentation of papers at Academic and Professional Conferences

Young Scientists Meeting on Climate Action: Addressing Causes and Impact (held online during **10-12 December 2024**) Organized by TWAS-CASAREP, Jawaharlal Nehru Centre for Advanced Scientific Research Bengaluru, India In Association with Divecha Centre for Climate Change, Indian Institute of Science, Bengaluru, India. (attended via the virtual platform).

International Veterinary Vaccinology Network (IVVN) on 26th to 27th March 2018 at Ole Sereni Hotel, Nairobi, Kenya

Title of Presentation: Combination vaccines targeting iron metabolism and mid-gut proteins in *Rhipicephalus appendiculatus* provides highly effective potential vaccine against tick infestation.

9th Biennial Scientific conference and Exhibition. At the College of Agriculture and Veterinary Sciences, University of Nairobi, Upper Kabete. **3rd to 5th September 2014:**

Oral presentation paper title; Characterization of a novel secretory-type iron transporting protein, Ferritin 2 from *Rhipicephalus appendiculatus* and evaluation as an anti-tick vaccine antigen.

Joint 8th International Ticks and Tick-borne pathogens (TTP-8) Conference and 12th Biennial Society for Tropical Veterinary Medicine (STVM) Conference. August 24-30th 2014 at Southern Sun Hotel, Cape Town South Africa.

Title of presentation: Recombinant expression and generation of anti-tick vaccines from a novel secretory type iron-transporting protein, Ferritin 2 from *Rhipicephalus appendiculatus*.

1st East African Regional Postgraduate Conference of Pure and Applied Sciences. Held at Kenyatta University, Nairobi, Kenya. - August 2010

Title of presentation: Lucy M. Kamau, Harry W. Wright, Alasdair J. Nisbet and Alan S. Bowman (2010). RNA interference and gene knockdown in the Poultry red mite, *Dermanysus gallinae*: studies on histamine-releasing factor and Cathepsin D.

International Biomedical Research Conference, Hosted by Institute of Primate Research and National museums of Kenya. Held at Kenya Institute of Education; Theme of Conference: Translating non-human primate studies into clinical benefits for human.- 6th- 8th July 2010

British Society for Parasitology Spring Conference and Trypanosomiasis and Leishmaniasis Seminar. Cardiff University, Wales, UK- 29th March- 1st April 2010.

Title of Presentation Lucy M. Kamau, Harry W. Wright, Alasdair J. Nisbet and Alan S. Bowman (2010). RNA interference and gene knockdown in the Poultry red mite, *Dermanysus gallinae*: studies on histamine-releasing factor and Cathepsin D.

International conference on Bioinformatics, International Centre for Insect Physiology and Ecology, (I.C.I.P.E.), Nairobi, Kenya.- 30th May – 2nd June 2007.

Poster Presentation: A concealed gut potential vaccine antigen from *Rhipicephalus appendiculatus* undergoes positive selection.

Visiting Scientist: Laboratory of Virology, Wageningen University, The Netherlands. - April- May 2006

Oral presentation: Isolation, recombinant expression and Characterization of polymorphism in the Bm86 vaccine antigen homologues from *Rhipicephalus appendiculatus* (Acari: Ixodida).

8th Annual Conference on vaccine Research, Venue: Marriott Inner Harbor Hotel, Baltimore, Maryland, U.S.A- 9th -11th May 2005

Poster presentation: Genetic Polymorphism and Positive Selection in a 'concealed' gut potential vaccine antigen from *Rhipicephalus appendiculatus*.

Visiting Scientist, Tick Research laboratory, University of Connecticut Medical Center, USA. Contact Person: Dr. Stephen Wikel and Dr. Bronwen Lambson- 3rd May 2005

Oral presentation: Anti-tick vaccines: Characterization and recombinant expression of Bm86 homologues in *Rhipicephalus appendiculatus* (Acari: Ixodida).

International conference on genetics and genomics of disease pathogens: Theme of conference: A time to heal- April 2005'; Venue: Windsor Hotel, Nairobi, Kenya

Poster presentation: A potential vaccine candidate antigen from the gut of the cattle tick, *Rhipicephalus appendiculatus* (Acari: Ixodida)

Biology of Disease Vectors Summer Conference, Colorado state University, Colorado, U.S.A.- 16th -30th June 2002

Poster Presentation: Isolation and characterization of genes encoding candidate vaccine antigens in *Rhipicephalus appendiculatus*.

1.2.13 Other Publications and Participation in Conferences and Workshops

Kenya One Health Conference: Held from 6th - 7th November 2025 at Ole Sereni Hotel, in Nairobi, Kenya.. Hybrid: I attended virtually via the Zoom Platform.

The 9th Africa Animal Welfare Conference (AAWC) - Action 2025 Conference dates: 28th - 30th July 2025. Held Physically in **Hotel Franco, Yaounde– Cameroon** and **Virtually through a Zoom platform (I attended through the virtual platform)**. **Theme of Conference: Strengthening Actions for Animal Welfare and Environment for a Sustainable Future and Resilient Planet**

Virtual DFG Info Session on Funding Opportunities for International Scientific Exchange and Collaboration, **11th June 2025**, for Researchers interested in Cooperation between Sub-Saharan Africa and Germany as well as the MENA Region and Germany.

PLAN4BEE workshop on 15th April to 19th April 2024 in Julius Kuhn Institute in Braunschweig, Germany and a research stay up to 14th June 2024. Presentation title: **Characterization and processing of value-added bee products in Kwa Vonza, Kitui County, Kenya.**

The Deutsche Forschungsgemeinschaft (DFG) (German Research Foundation) Status Conference held at Wissenschaftszentrum (WZ), Ahrstraße 45, 53175 Bonn, in Bonn, Germany on 8th-10th April 2024. Theme: African German Scientific Exchange in the Field of Sustainable Intensification of Agriculture. Funding: **Grant for initiation of International collaboration in a research project, between Kenyatta University and Partners from University of Hohenheim, University of Applied Sciences Niederrhein, University of Potsdam, University of Applied Sciences Niederrhein, Institute for Bee Protection, all in German and University Peleforo Gon Coulibaly of Korhogo, in Ivory Coast and National University of Sciences, Technologies, Engineering and Mathematics (UNSTIM), in Benin.**

Project Title: Monitoring agro-ecosystems of sub-Saharan Africa: Pesticides and land use as stressors for plants, bees and pollination interactions (PLAN4BEE).

The 8th Africa Animal Welfare Conference - Action 2024, held from 30th September to 2nd October 2024. Held Physically in headquarters of UNEP, UN-HABITAT and the United Nations Office in Nairobi (UNON) and **Virtually through a Zoom platform (I attended through the virtual platform)**. **Theme: Partnership Actions to Improve Animal Welfare and Environmental Sustainability.**

The 7th Africa Animal Welfare Conference (AAWC) -Action 2023. Conference dates: 25th - 27th September 2023. Held Physically in **Sainte Famille Hotel, Kigali – Rwanda** and **Virtually through a Zoom platform (I attended through the virtual platform)**.

The 6th Africa Animal Welfare Conference - Action 2022. Conference theme: Animals, People and the Environment in a rapidly changing 21st Century. Held Physically in Travel Lodge Hotel, Gaborone, Botswana, and **virtually via Zoom platform** on October 31st to 2nd November 2022.

DAAD Alumni Training Workshop On Climate Change Research In East Africa. Held at the **MAZINGIRA CENTER, INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE, Nairobi, Kenya**, on 3rd to 5th November 2021.

The 4th Africa Animal Welfare Conference - Action 2020. Conference theme: Animal Welfare and Environment conservation for sustainable development in Africa: Enhancing Nature-based Solutions. Held **virtually via Zoom platform** on September 7th to 10th 2020.

1.2.15 SCHOLARLY PRESENTATION AT CONFERENCE/ WORKSHOPS/ SEMINARS

Kenya Women Veterinary Association Continuous Professional Development -17th -18th November 2022

Organized through partnership between Kenyatta University Kitui Campus and Caritas Kitui, at Mwingi, Kitui County.

Topic presented: Pain detection and Management in Animals.

Kenya Women Veterinary Association Continuous Professional Development - 15th March 2019

Workshop Theme: Animal Welfare. Venue: Smith Hotel, in Kiserian, Nairobi.

Kenya Veterinary Association Continuous Professional Development - 6th to 7th December, 2018

Workshop Theme: Optimizing Livestock Productivity through good farming Practices. Venue: Agricultural Information Centre, KALRO, Nairobi.

Kenya Veterinary Association Continuous Professional Development - 16th to 17th March 2017

Workshop Theme: Animal Welfare and Productivity, held at, the National Agricultural Research Laboratories (NARL), Nairobi.

First Kenyatta University Mathematics modelling workshop; 17th to 21st June 2013 at Kenyatta University Conference Center.- June 2013

1.3 QUALITY TEACHING, LEARNING AND MENTORSHIP

1.3.2 Student Evaluations

My Teaching is evaluated in every academic year and semesters: Average scores **>95%** in most units. (Reports available for academic years for 1st and 2nd Semester 2022/2023, 2021/2022 and 2020/2021 etc.

1.3.3 Ongoing Supervisions

Ongoing Supervision – Masters

Defended Thesis (2023) and awaiting graduation

- **John Kiplangat Cheruiyot, A150/OL/NKU/26036/2019.** Status of indigenous chicken production and assessment of local feed resources in Masaba North sub-county, in Nyamira County, Kenya.
- **Rungua Chiro Rungua Reg. No. I56/25420/2014. Thesis title:** Differential Response of *Glossina Pallidipes* to Trypanosome Induced Semiochemicals: A Case Study of Shimba Hills, Kwale County, Kenya.

MSC Currently Writing Thesis

- **Jane Rose Wanjiru Reg. No. A150/OL/CTY/20677/2021.** Growth Performance and Carcass Characteristics of improved indigenous Chicken fed on Moringa Oleifera leaf meal and Phytase Enzyme in Machakos County, Kenya.
- **Kamau Daniel Nga'ng'a Reg No. I56/7599/2017.** Isolation of Antibiotic residues and antibiotic-resistant bacteria strains from chicken offals at Poultry abattoirs, poultry farmers and street vendors in Kiambu County, Kenya. (MSC Microbiology).
- **Shaaban Chitumbua Baya I56/26523/2013 Thesis Title-** Prevalence, morbidity and Factors favouring *Tunga Penetrans* in Lunga-Lunga, Kwale, Kenya.
- **Anne Gitonga Reg No. I56/CE/26636/2011. Thesis title:** Distribution of bacterial and protozoal enteropathogens among diarrhoeal patients from Imenti North attending Meru Level 5 Hospital, Meru County, Kenya.

- **Naomi Wanjiku Maina Reg. No: 156/CE/34234/2016. Proposal title:** Prevalence and Risk Factors associated with Soil Transmitted Helminths infestation among pregnant women attending health facilities in Thika, Kiambu County, Kenya.

MSC Currently at Proposal Stage

- **Cherere Gachoka Reg. No.: A150/OL/22153/2021. Proposal Title:** Assessment of Wood Shavings Properties as Bedding Material and its Effects on Indigenous Chicken in Kenya. MSC Animal Nutrition and Management.
- **Jacob Mburu Kabutha (BSc. Reg. No.: A150/CTY/OL/41211/2022. Black Soldier Fly (BSF) *Hermetia illucen(s)* Larvae Meal for Improved Chicken in Kitui County, Kenya; Effect on Growth performance, carcass quality and profitability.**

Ongoing PhD Supervision

- **Mukolwe Sarah Akwabi I80/54546/2019.** Development and Validation of Rapid Pen-Side Diagnostic Tests for Detection of *Anaplasma marginale* and *Ehrlichia ruminantium*. (Department of Biochemistry, University of Nairobi).
- **Kiio Irene Kateve.** Evaluation of Anti-Vector Vaccine Antigens Targeting Iron Homeostasis in Ticks. (Department of Biochemistry, University of Nairobi).

1.3.4 SUPERVISION OF POSTGRADUATE STUDENTS

1.3.4.1 Masters

MSC graduated (from 2019 to 2025).

- **Njiriri Jaziel Kimunya Reg. No. I56/ CE/28968/2015. Thesis title:** Analysis of Microbial and Physico-Chemical Quality of Potable Water for Domestic use from Kiserian Dam, Kajiado County.
- **Collins Ngetich Reg No. I56/39574 2016. Thesis title:** Haematological profiles and serum IgE levels as tick resistance phenotypes upon artificial infestation in indicine and taurine cattle breeds. Kenyatta University, Nairobi, Kenya.
- **Amwoma Lucas Gichana I56/27967/2014 Thesis Title-** Co-infection of Malaria with Intestinal Parasitic Infections and their association with Severe Fever among children in Marani, Kisii County, Kenya.
- **Caroline Makena Lepore Reg No. I56/CE/27979/2013. Molecular detection and associated factors of entamoeba infection among diarrhoeal patients attending meru teaching and referral hospital, kenya.**
- **Joyce Nyirongo I56F/33764/2015.** Anti-plasmodial efficacy of Astemizole-Methylene blue combination therapy against chloroquine sensitive and resistant *Plasmodium falciparum* strains
- **Mogendi, Ruth Gekondo Reg. No; I56/CE/24053/2012.** Prevalence of Intestinal Protozoa and Helminthes and Their Transmission Risk Factors in Inmates of Naivasha and Kisii Prisons in Kenya.
- **Kamonge Samuel Kiluu Reg. No I56/CE/23947/2012.** Prevalence of intestinal parasitic infections and transmission risk factors in primary school children in Mbeere North sub-county, Embu County, Kenya.
- **Magara Jeremiah I56/2446161/2013 Thesis title:** Evaluating Anti-malarial activity of *Rubia cordifolia* (compositae), *Leucas calostachys* Olive (Labiatae) and *Sanchus schweinfurthii* (Leguminosae) Medicinal Plants against *Plasmodium falciparum*.
- **Mubia John Muchiri I56/CE/23702/2012. Thesis Title** Invitro Anti-plasmodial Activities of Crude Extracts of *Leucas calostachys*, *Ajuga intergrifolia* and their combinations against *Plasmodium falciparum*.

MSC Graduated 2013- 2018

- **Collince Jared Omondi I56/22708/2012:** Thesis title :Performance of Rapid diagnostic Test Kits versus microscopy in diagnosis of Plasmodium spp. In School going Children in Baringo County.
- **Agnes I Otwani I56/22801/2011:** Effects of aqueous and Ethanolic Extracts of Vernonia Amygdalina and Harrisonia Abyssinica on Schistosoma mansoni miracidia, Cercariae and the snail Biophalaria.
- **Omondi Robert I56/CE/24667/2012** Prevalence of malaria and anaemia in school children of age 8 to 15 years and association with long-lasting Insecticide treated bed-nets in Kasipul, Homa-Bay County, Kenya.
- **Chebet Too I56/CE/22424/2010:** Prevalence of Amoebiasis in patients attending Longisa District hospital in Bomet County, Kenya.
- **Riungu Kellen Kawira I56/CE/22425/2010:** Occurrence and risk factors of intestinal parasites among secondary school students in Maara district, Tharaka-Nithi county in Kenya.
- **Munene Ruth Wanjiku I56/Ce/22426/2010:** An investigation of Schistosomiasis and its transmission risks in school children in non-endemic Kagio area of Kirinyaga County, Kenya.
- **Sigei Jonah I56/CE/22423/2010:** Occurrence of Plasmodium Falciparum infections among individuals with different ABO blood groups attending Kipkelion and Fort-tern Hospitals in Kericho County, Kenya.
- **Njuguna Janeffer Njambi I56/CE/21212/2010:** Incidence of Bovine brucellosis in Kenya for the period between, year 2000 to 2012.
- **Evalyne Kanyina P57/13128/09:** Cervical precancerous changes and microbial infections in women attending Family Health option Clinic in Thika, Kenya.
- **Arthur N. Brown P150F/21359/2010:** Evaluating measles vaccine-induced immunity in children two weeks after vaccination and at age five in Nairobi
- **Mung'ang'a Eliza Mativo I56/CE/22433/10:** An investigation of the occurrence of Entamoeba histolytica infections in residents of Kitui West District attending Muthale and Kauwi hospitals in Kitui County, Kenya.
- **Okonji G. Asilenje I56/CE/22432/2010:** Thesis title: Behavioural and Environmental Highland Malaria Risk Factors Analysis in Nyamira North District, Nyamira County.
- **Ombongi Joyce Kerubo I56/CE/11496/08 Masters in Physiology:** Analysis of the utilization of food resources by the African wood mouse Hyomyscuss denniae endorobae (Rodentia: Muridae).
- **Orucho Vincent Obino I56/CE/10963/06 Masters in Applied Parasitology :** Thesis title, Rate of infection of Anopheles gambiae with Plasmodium as a determinant of prevalence of Highland malaria in Kisii district, Kenya.
- **Jennifer Gachago P57/10511/08 Masters in Public Health:** Thesis title: An investigation of fire risk in Kiandutu slums in Thika Municipality, Kenya.

1.3.4.2 PhD Supervision

Graduated PhD (2015 to 2022)

Njue James Kinoti P57/28711/2013. Thesis title: Determination of Human Papilloma Virus (HPV) types and factors associated with cervical abnormalities among HIV-positive women in Eastern Kenya. **PhD Thesis**, Kenyatta University, 2022.

Ednah N. Ototo I 84/22485/12. Thesis title: The impact of Climate Variability and malaria Control interventions on malaria Parasite Prevalence and Vector Abundance in Western Kenya. **PhD Thesis**, Kenyatta University, 2020.

Chengo Nelson Menza P97/20417/12. Thesis title: Determination of Aflatoxins in Pea nuts and the prevalence of Aflatoxins Induced Hepatocellular Carcinoma in Busia and Kisii Districts in Kenya. **PhD Thesis**, Kenyatta University, 2015.

1.4 PROFESSIONAL/ CONSULTANCY

1.4.1 Networks / Collaborations

Has been involved in collaborative research with the following institutions:

- **September 2024-February 2025. Initiated a collaborative research project between Kenyatta University and partners from** University of Hohenheim, University of Potsdam, University of Applied Sciences Niederrhein, Institute for Bee Protection, all in German **and** University Peleforo Gon Coulibaly of Korhogo, Korhogo, in Ivory Coast and National University of Sciences, Technologies, Engineering and Mathematics (UNSTIM), in Benin, and University of Ngaoundere, in Cameroon.

Previously done collaborative research projects with partners from the following institutions:

- University of Nairobi, Kenya
- International Livestock Research Institute, (ILRI), Nairobi, Kenya.
- University of Wageningen, in the Netherlands
- University of Aberdeen, in Scotland UK

1.4.2 Editorial Boards/ Referee for professional periodicals

Have been invited to review several publications for different refereed journals

1.4.3 Consulting for international / national boards

Appointment to Boards

- *Member of Board of Management (BOM), Komothai Girls' Technical High School, in Kiambu, for an additional period of three (3) years. **September 2012 to Sept 2015: Renewed appointment***
- *Member of Board of Management Komothai Girls' Technical High School, in Kiambu, for a period of three (3) years. **Appointed in July 2009 to August 2012***

1.4.5 Consulting for organization / institutions

Was in the panel of reviewers for University of Embu Proposal Applications for the University Research grants. **For 2018/2019 financial year.**

1.4.4 Membership to academic and professional bodies

- *Member, Kenya Veterinary Association (KVA reg. no. 1672)*
- *Licensed Veterinarian by Kenya Veterinary Board (KVB Reg No. 947)*
- *Member: Association for Faculty Enrichment in Learning and Teaching (AFELT). For professionals in Higher Education to Design Learning that is Transformative, builds Critical Thinking and Problems Solving Competences and is Gender Responsive, based in Nairobi, Kenya.*
- *Was a member, British Society for Parasitologists during the period, March 2010 to December 2011*
- *Was a member of the Association of African Acarologists- from 2002*

1.4.7 Any other (Editorship/ Peer review, external examiner, etc

1.4.7.1 EXTERNAL EXAMINER IN OTHER UNIVERSITIES

Maasai Mara University, Department of Animal Health and Production

- **May 2025 to the present. Appointed External Examiner-** Maasai Mara University, Department of Animal Health and Production.

University of Nairobi, School of Biological Sciences

- **January 2022 to current: Renewed External Examiner:** University of Nairobi, School of Biological Sciences.
- **January 2019 to December 2022: Renewed External Examiner (2nd Term Renewal);** University of Nairobi, School of Biological Sciences.
- **January 2017 to December 2019 (1st Term appointment):** External Examiner, University of Nairobi,

Jomo Kenyatta University of Agriculture and Technology (JKUAT)

- **February 2017 to 2019: Renewed External Examiner (2nd Term Renewal);** Zoology Department.
- **February 2015 to January 2017 (1st Term appointment);** External Examiner, Zoology Department.

1.4.7.2 THESES EXTERNAL EXAMINER

From 2014: MSC AND PhD Theses External Examiner (Jomo Kenyatta University of Agriculture and Technology)

PhD theses external examiner- (JKUAT) (listing a few)

- **Winfrida Cheriro TM405-0370/2009.** Molecular characterization of Drug resistance in HIV isolates from treatment naïve and treatment Experienced Patients attending Academic Model providing Access to Health Care Partnerships Clinics Eldoret, Kenya.
- **Muriuki Joseph Kimiru Mwaniki Reg No. TM403-0258/2009.** An invitro evaluation of *Hypoxis hemerocallidea*, *Aloe vera* and Medicinal mushroom for Anti-HIV-I activity.

MSC Theses external examiner (JKUAT)

- **Ms Fridah Mwendwa Kiri Reg No. TM305-1123/2013.** Development and Evaluation of a modified Loop-Mediated Isothermal Amplification (MLAMP) Test for Detection of *Entamoeba histolytica*.
- **Hellen S. Koka Reg No. TM304-1070/2011.** Detection of Spotted fever group rickettsioses, *Coxiella burnetii* and *Theileria orientalis* in human blood and ticks from pastoral communities in Kenya.
- **Kituyi Christine N., REG. TM304-1176/2013.** Invitro and invivo efficacy of Combination therapy using *Allium sativum* and *Aloe secundiflora* against *Leishmania major* infected BALB/C mice.

MSC Theses External Examination, University of Nairobi

- **Calvince Orage I58/38677/2020.** Effects of climatic variability on nematode diversity richness, distribution, and use of resistant potato varieties for management of potato cyst nematode (*globoidea rostochiensis*) in kenya. **MSC Thesis examined in July 2023**
- **Truphena Wanja Kithaka Reg. No. I56/75406/2014.** Efficacy of 10% Emulsifiable Concentrate (EC) of Syptertix® for Tsetse control in Kiboko Makueni County, Kenya.
- **Phyllis Muniyva Isaiah, I56/74721/2014.** Survey of tick species and their abundance at Kapiti plains Estate. Makueni County, Kenya.
- **Mukolwe Sarah Akwabi I56/79866/2012. MSC Thesis** Molecular survey of ticks and Tick-borne parasites from Livestock and wildebeests at the Maasai-Mara wildlife-livestock interface, Narok County, Kenya.

1.4.7.3 THESIS INTERNAL EXAMINER FOR KENYATTA UNIVERSITY

Examined several Masters and PhD thesis for Kenyatta University (only a few listed below)

PhD Theses Internal examiner (Kenyatta University)

- **Jane Mwingi Gitau REG. P97/25772/11.** The effects of Schistosomiasis in Urogenital tract of Females in endemic area for *S. haematobium* in Kwale County, Kenya
- **Anthony Wanjohi Nyambura REG. P97/25465/2011** Effects of HIV and Intestinal parasites Co-infection on selected Haematological parameters among pregnant women attending selected health Facilities in Nyeri County, Kenya. (PhD Kenyatta University)

- **Arodi Ouma Washington, REG. NO. P97/12741/09.** Production and Characterization of specific Abs to Bovine Interleukin 5 and 6 and their use in the development of Sensitive Elisa for their measurement.

MSC Theses Internal examiner (Kenyatta University) (only a few listed below)

- **David Mwikya Mbuvi, REG. Q23/27567/2014.** Prevalence of *Taenia solium* Taeniasis and associated factors in Kiambu County, Kenya.
- **Cherono Eunice, REG. I56/CE/25225/2013.** Immune responses in patients co-infected with HIV and Mycobacterium tuberculosis attending TB clinic in Kericho County Hospital, Kenya.
- **Joseph Kibe Karanja, REG. I56/23312/12.** Plasma cytokine levels and their relationship with clinical correlates in Human Immunodeficiency virus/ hepatitis C virus infected adults from Mombasa County, Kenya.
- **Mumbi S. Njagi, REG. I56/CE/22001/10.** Epidemiology of Neonatal sepsis and associated cytokines in Nakuru County Referral Hospital.
- **Gitonga Ciriaka Muthoni, REG. I56/26000/11.** Performance of Widal test and stool examination as diagnostic tests for *Salmonella typhi* infection.
- **Ms Chepkwony Sharon Cherotich, REG. I56/CE/22005/2010.** Screening and characterization of Herpesvirus Papio 2 in wild-caught Olive baboons from selected regions in Kenya, Kenya.
- **Aballa Andrew Okoth REG. P150/21572/2010** Morbidity Assessment and characterization of Flea species responsible for Tungiasis in Kisumu County, Kenya.
- **Susan Wairimu Waweru, REG. P150/21569/2010.** T cell and HIV viral load trends in patients with HIV and Hepatitis C co-infection amongst HIV sero-discordant couples in Thika.
- **Susan Nyawira, REG. NO. I56/10892/07.** Prevalence of human brucellosis by standard agglutination test, Rose Bengal Test and Immunofluorescence microscopy in Kiambu and Narok counties , Kenya.

1.5 Administrative and Responsibilities

1.5.1 Recognized University positions

Acting Deputy Executive Dean: *School of Agriculture and Environmental Sciences, Kitui campus., 27th October to 3rd November 2023*

Chairperson (Renewed appointment), *Department of Animal Science, School of Agriculture and Enterprise Development, Kenyatta University: Renewed appointment 10th June 2022 to Current.*

Chairperson, *Department of Animal Science, School of Agriculture and Enterprise Development, Kenyatta University: Appointed, 10th June 2020 to 9th June 2022.*

Programme Coordinator, *School of Agriculture and Enterprise Development, Kenyatta University, Kitui Campus, Kitui County. September 2018 to June 2020.*

Examinations Coordinator, *Department of Zoological Sciences: October 2010 to October 2014.*

Examinations Coordinator - Temporary appointment, *Dept. of Zoological Sciences: August 2010- October 2010*

Assistant Examinations Coordinator, *Department of Zoological Sciences, Kenyatta University, September 2006-October 2010*

Acting Chairman, *Department of Zoological Sciences: March to May 2008, July 2008*

1.5.2 Other responsibilities in the University

Membership to University Committees:

- *Kitui Campus Students' Disciplinary Committee*
- *Committee to oversee the hosting of an Optical Telescope Observatory Telescope Project at Kitui Campus, a collaborative project with Kenya Space Agency*
- *Kitui Campus Quality Systems Management Committee.*
- *Institutional Animal Care and Use Committee*
- *Institutional Biosafety Committee*
- *Committee to Spear head collaboration with Government Chemist, Kenya Bureau of standards (KEBS) and Kenya Plant Inspectorate Service.*

University AD-Hoc Committee:

- **2013** Committee to harmonize BSC Animal Health and Animal Production Programmes offered in SPAS and BSC Animal Health and Production Management offered in the School of Agriculture.
- Committee to spearhead accreditation of BSC Animal health programme by Kenya Veterinary Board (KVB), which is the regulation body,

Convenor and Membership in School Committees

- **July 2009** Convenor, School HIV and AIDS committee
- **February 2009** Support Africa International- School of Pure and Applied Sciences (SPAS) committee

Member of departmental committees:

- Convenor, Animal health program committee: In-charge of development and implementation of Animal Health Program
- Programme Co-ordinators/ Curriculum committee,
- Examination moderation committee,
- Post-graduate studies committee,
- Departmental Board of undergraduate studies
- Research and Linkages Committee/ Bio-safety and Research facilities
- Departmental Seminars committee

Administrative/ leadership tasks at the Department level

- Coordinator of Animal Health program in the Department of Zoological Sciences.
- Coordinator of Parasitology programs in the Department of Zoological Sciences.
- Served as convenor of several departmental committees.
- Served as departmental Seminars Coordinator

1.5.3 Other Administrative positions in previous work postings

1991-1993 Veterinary Officer (Hygiene), Ministry of Agriculture and Livestock Development, Kenya, Deployed at Farmers' Choice Slaughter Meat Factory.

Administrative duties and responsibilities

- Supervised hygienic slaughtering of swine.
- In-charge/ supervisor of meat inspectors and slaughterhouse staff
- Supervised and certified acquisition of beef and other meat including poultry and fish from external slaughterhouses.
- Supervised hygienic processing of meat products.
- Certified local and export sales of fresh meat and processed products
- Engaging and liaising with other veterinary hygiene officers in Nairobi and other provinces in Kenya, to ensure high quality meat industry.

1.6 Community Engagements and Other Contributions

- **2021 to the present:** Gave leadership in the development and implementation of a Memorandum of Agreement (MOA) between Kenyatta University and the Catholic Diocese of Kitui, (Caritas-Kitui), which was signed in the year January 2022. The collaboration has carried out several community-based activities in Kitui County promoting Donkey welfare and community empowerment, particularly women in the region.
- **June 2020 to the present:** Implemented the second phase of the Memorandum of Understanding (MOU) between Kenyatta University- and Brooke East Africa. Project on "Promoting Donkey Welfare and improving livelihoods, of particularly women and girls in Kitui County, Kenya.
- Has been involved in several community-based activities at home village and Christian church attended.

1.6.1 Research funding

Awarded grant proposals

German Research Foundation (DFG) September, 2023: Won Grant for initiation of International

collaboration in a research project, between Kenyatta University and Partners from University of Hohenheim, University of Applied Sciences Niederrhein, University of Potsdam, University of Applied Sciences Niederrhein, Institute for Bee Protection, all in German **and** University Peleforo Gon Coulibaly of Korhogo, in Ivory Coast and National University of Sciences, Technologies, Engineering and Mathematics (UNSTIM), in Benin.

Project Title: Monitoring agro-ecosystems of sub-Saharan Africa: Pesticides and land use as stressors for plants, bees and pollination interactions (PLAN4BEE).

KU component of the research aims at: Characterization of honey, Establishment of an Apiary for production, and processing of value added bee products in Kwa Vonzia, Kitui County, Kenya

2021 National Academy of Sciences (NAS) and the US Agency for International Development (USAID)

mini-grant of \$10,000: Dr. Lilian Gatogo (PI), Lecturer in Chemistry department, Kenyatta University, and **Dr. Lucy Kamau (CO-PI)**, Senior Lecturer in the Department of Animal Sciences, School of Agriculture and Enterprise Development at Kitui Campus. Research project title; “**Development of a visual detection microarray based method for the detection of multiple Aflatoxin producing Aspergillus species.**” This was part of the United States Agency for International Development (USAID) program to increase partnerships for Enhanced Engagement in Research (PEER).

National research Fund (NRF) 2017 grants:

Proposal Title: Development and validation of a rapid lateral flow test (LFT) for detection of *Theileria parva*, *Ehrlichia ruminatum* and *Babesia* infections in cattle.

Grant value KSH 10,000,000- collaborators: University of Nairobi and ILRI (Beca hub), Nairobi.

Principal Investigator- Dr. Esther Kanduma, Department of Biochemistry, Chiromo Campus, University of Nairobi.

Collaborators: Lucy Kamau, Department of Animal sciences, Kenyatta University, **Dr. Richard Bishop**, Washington State University, USA, **Dr. Robert Skilton**, ICIPE, **Dr. Naftaly Githaka**, ILRI, Tick Lab. Department of Veterinary Services (DVS) Kenya and **Dr. David Odongo**, School of Biological Sciences, University of Nairobi.

Welcome Trust International Engagement Awards (implemented 2015-2016)

Title of Project: **Catalyzing the uptake and application of research output by small-scale rural farmers in Kenya.** Grant number 106486/Z/14/Z; Amount: KSH KES 2,467,900. Projected completed in December 2016. **Principal Investigator:** Dr. Naftaly Githaka (ILRI Tick Laboratory). **Collaborators:** Lucy Kamau (KU) and Dr. Esther Kanduma (UON)

NRF Women Scientist Grant 2012 (implemented 2013-2016). National Council for Science and technology research grant to carry out research on tick ferritin proteins as vaccine candidates. (Women Scientist 2013-14). Amount to KU- Ksh. 2,500,000.00. Grant completed in 2017.

Principal Investigator: Dr. Lucy Kamau (KU), Collaborators: Dr. Eunice Kairu (KU), Dr. Joyce Mwaniki (KU) and Dr. Esther Kanduma (UON)

Postdoctoral research Fellowship by German Academic exchange Service (DAAD). August 2012 to January 2013. Amount to KU- Ksh 442,656.00

Research undertaken on metabolic genes in Rhipicephalus appendiculatus for use as candidate vaccine antigens. Research carried out between KU Zoological Sciences department and laboratories, in International Livestock Research Institute (ILRI), in Nairobi, Kenya.

Sept 2009- March 2010 Commonwealth Academic staff Fellowship by Commonwealth Commission to undertake Postdoctoral Research at University of Aberdeen in Scotland, the United Kingdom.

2006 Junior Research Training Fellowship to train in Recombinant Baculovirus Expression of eukaryotic genes.

Research undertaken at Wageningen University Graduate School, Department of Production Ecology, Wageningen, Netherlands.

May 2005: Travel Grant award by National Institutes of Health (NIH), USA: to attend the 8th Annual Conference on vaccine Research, Venue: Marriott Inner Harbor Hotel, Baltimore, Maryland, U.S.A- 9th - 11th May 2005

June 2002 Travel grant and training fellowship: to attend the Biology of Disease Vectors Summer Conference, Colorado state University, Colorado, U.S.A.- 16th -30th June 2002

2000- 2005 German Academic Exchange Service (DAAD) Scholarship to pursue Ph.D. research at ILRI and Kenyatta University, Kenya.

1989- 1991 Norwegian Organization for Regional and Arid Development (NORAD), Scholarship to pursue Master of Science in Comparative Mammalian Physiology at University of Nairobi.

1.6.2 Community Outreach and Recognitions

- **2016 Facilitator, Student Training in Entrepreneurship, (STEP),** Training workshop for Youths in Nakuru County, sponsored by Collaboration between KU, GTZ and Nakuru County Ministry of Youth and Sports; organized by Directorate of Industry and Partnerships, Kenyatta University.
- **February 2016 Facilitator, Student Training in Entrepreneurship (STEP),** Training workshop for Youths in Mombasa County sponsored by Collaboration between KU, KNATCOM and Mombasa County, Ministry of Youth and Sports; organized by Directorate of Industry and Partnerships, Kenyatta University.
- **August 2009 Resource person for workshop on Training Ministry of health and National Aids and STIs staff on Data for decision making and its relevance in control of AIDs and STIs in Kenya.**

Sponsors and collaborators: Family Health International and Kenyatta University. Venue; Great Rift Valley Safari Lounge, Kenya

- **April 2009 Workshop for Training of trainers on Data for Decision Making:** Program for Ministry of Health, National Aids and STIs control Programme, **Sponsors and collaborators:** Family Health International and Kenyatta University, Nairobi, Kenya. venue: Great Rift Valley Safari Lounge

1.6.2.1 Other Community Service Engagements

- Staff Mentor, Kenyatta University Mentoring Programme
- Partners and volunteer with Happy life Children's Home in Roysambu, Kasarani.
- Partners and volunteer with Ahadi-Kenya Trust: has been involved in jigger eradication activities particularly in Murang'a district of Central province, of Kenya.
- Patron and Mentor- Karunge Primary school, in Mathioya, Murang'a County.
- Served as a member of Board of trustees and sponsors of Bright Hope Community Center, located in Uthiru, in Kabete, which constituted a mixed day secondary school that assisted orphaned and children from poor backgrounds to attain secondary school education.

1.6.3 Professional Affiliation and portfolios

Member of Association for Faculty Enrichment in Learning and Teaching (AFELT).

A member of International Vaccinology Network (IVVN)

Member of Kenya Veterinary Association (Number 1672)

Member of Kenya Women Veterinary Association

Registered under Kenya Veterinary Board (KVB 947)

1.6.4 Recognitions awards and honours

16.5 Any other sub-category

Convening and Organizing Committee for Conference and Workshops

- *Training on Biosafety Awareness for Kenyatta University staff, held in Kenyatta University Conference Centre, August 2012*
- ***Trainer: Student Training for Entrepreneurial Promotion (STEP). At Kenyatta University***

DEVELOPMENT AND REVIEW OF ACADEMIC PROGRAMS

- *On going: Review of MSC Animal Nutrition and Management and PhD Animal Sciences*
- *Review of BSC Animal Health and Production Program in the School of Agriculture and Environmental Sciences. 2022-2023 to current.*
- *Review of BSC, B.Ed (Sc) and MSC academic programs offered in the Department of Zoological Sciences*
- *Review and Harmonization of BSC Animal Health and Production Program transferred to the School of Agriculture and Enterprise Development. 2015- 2016*
- *Developing New Academic Program* ***Bachelor of Science in Animal Health:*** *Convenor of program development committee and member. 2008 to September 2009*
- ***New Academic Program Master of Public Health:*** *Contributed greatly in the development of MSc in Public Health Program initially at the department of Zoological Sciences, which was later transferred to the School of Health Sciences and has recently been upgraded to the School of Public Health, Kenyatta University. 1995*

1.7 Referees

*Prof. Maina Mwangi,
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