

Benard Aliwa

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## PERSONAL STATEMENT

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Dedicated, knowledgeable, and experienced mid-level Molecular Biologist with an exceptionally broad and deep research focus on molecular microbiology, bioinformatics and Evolutionary Biology. An adept and thorough researcher with a meticulous and rigorous approach to experiment accuracy and verification. Able to explain complex molecular biology and microbiological concepts to both lay and professional audiences in a clear and accessible manner.

## KEY ACHIEVEMENTS

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- Recognized for consistently meeting and exceeding performance expectations and promoted to be the performance contracting departmental coordinator, leading a team of more than 3 staff. Positively contributing to improved ranking of the University of Nairobi to be number one in East and Central Africa.
- Recognized for surpassing performance and promoted to Laboratory Superintendent, improved laboratory tests accuracy and precision to 95% from 85%, increased laboratory revenue by about 30%.
- Acknowledged for the best poetry writing and reciting with certificate of participation from Technical University of Kenya.

## EDUCATION

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### **Masters in Molecular Biology and Bioinformatics: Jomo Kenyatta University of Agriculture and Technology, Kenya (2015-2018)**

- **Modules:** Fundamentals of molecular biology, Genome structure and organization, Gene expression and protein structure analysis, Proteomics and protein identification, Molecular markers and their applications.
- **Individual thesis:** Genetic diversity of *Streptococcus infantarius Subsp. infantarius* isolated from human stool, raw, and fermented camel milk, Isiolo central sub-county, Kenya: Thesis aim to elucidate on genetic diversity and epidemiological link and possible public health risks associated with *Streptococcus infantarius* in order to improve traditional milk fermentation in Kenya.

### **Bachelor of Science in Medical Laboratory Sciences: Mount Kenya University, Kenya (January 2011-December 2013)**

- **Modules:** Laboratory practice and management, Biotechnology, Biochemistry and biochemical techniques, Immunology, Immunopathology, Bacteriology, Medical entomology and protozoology, Epidemiology and disease control, Virology, Clinical chemistry, Clinical laboratory diagnosis, Histology.
- **Individual Project:** Prevalence of hepatitis B virus among the patient attending Referral Hospital of Nakuru: the project aim to determine the prevalence rate of hepatitis B virus and elucidate on the associated risk factors.

### **Diploma in Medical Laboratory Technology: Technical University of Kenya Nairobi (January 2005-November 2007)**

- **Modules:** Laboratory practice and management, Bacteriology, Clinical chemistry, Immunology, Medical Microbiology, Histology, Biotechnology.

## CAREER HISTORY

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### University of Nairobi- Senior Laboratory Technologist (March 2015- Present)

- Conducted and determined prevalence of drug resistant *Mycobacterium tuberculosis* Complex Species from camel milk, together with a team of four professors the results enabled publication of 1 article in peer reviewed journal.
- Collaborated with Public health and Food science professors, conducted, analyzed, and interpreted multiple PCR assays and bioinformatics data in order to detect and characterize potential food borne pathogens. Interpreted protein assays and GC analysis of cellular metabolites for strain evaluation.
- Worked within a team of five, to conduct a research on virulence and genetic diversity of *Clostridium pefrigen* isolated from camel milk, the experience in using molecular and bioinformatics techniques was critical in meeting study objectives. Findings was adopted by the Kenyan government for action plan to improve Food safety and quality among pastoralists in Arid and Semi-arid lands (ASALs).
- Teamed up with department researchers to conduct supplemental scientific literature research, concept and proposal writing.

### Jomo Kenyatta University of Agriculture and Technology- Graduate Assistant (2018)

- Taught more than 50 biochemistry undergraduate students practical's on Gene therapy, Recombinant DNA, Protein Therapeutics, Evolutionary Studies and Phylogenetic Analysis.

### Avenue Hospital, Nairobi- Laboratory Superintendent (September-2011 - February-2015)

- Conducted full range of chemical, microbiological, immunologic and hematologic laboratory tests with 99% accuracy, leading to improved clinical management of the patients.
- Conducted tests on acceptable specimens and controls on daily basis according to laboratory established safety guidelines, policies, and procedural protocols. Took responsibility to train new employees on quality control procedures.
- Verified unexpected results, took corrective measures, recorded, and reported the incident(s) to an immediate supervisor.

### Nairobi West Hospital- Medical Laboratory Technologist (January 2008- August 2011)

- Verified unexpected results, took corrective measures, recorded, and reported the incident(s) to an immediate supervisor. Conducted routine and specialized laboratory tests.

### Projects Involved in

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- **Erafrica: Safe Dairy Project.** Research Assistant - supervised samples collections, labelling and storage. Verified filling of the questionnaires. Conducted microbial isolation and analysis using molecular techniques. Data analysis and report writing leading publication of the research findings in peer review journal.
- **RELOAD Project-** Research assistant: Performed analysis of samples using molecular Techniques including DNA extraction, PCR, Identification of pathogenic bacterial strains with drug resistance Genes. Publication of the study findings in peer review journal.

### Conferences & Seminars

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1. Bacterial Genomic DNA extraction and PCR amplification Hands-on Training-HIMEDIA Biosciences, India and Chemoquip Kenya.
2. Chromatography and Spectroscopy applications- Ultivo Triple Quadrupole LC-MS system: revolutionary innovations for food and environmental labs, Advanced Instrumentation to discover, and target, environmental pollutants and food contaminants- Trained by Agilent – Europe, Chemetrix, and Nesvax Innovations, Kenya.

## Publications

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1. **Aliwa, B. O** & Kaindi Dasel Wambua Mulwa (2019). Antibiotic Resistance of Clostridium Perfringens Isolated from Raw Camel Milk in Isiolo County, Kenya. *Annals of Applied Microbiology & Biotechnology Journal*.-Accepted for publication.
2. Onyango, A. E., Okoth, M. W., Kunyanga, C. N., & **Aliwa, B. O.** (2018). Microbiological Quality and Contamination Level of Water Sources in Isiolo County in Kenya. *Journal of environmental and public health*, 2018.
3. Lamuka, P. O., Njeruh, F. M., Gitao, G. C., Matofari, Abey, K. A., & **Aliwa, B. O.** (2018). Prevalence of Antibiotic Resistance among Mycobacterium tuberculosis Complex Species from Camel Milk in Isiolo County, Kenya. *AJAF*.

## References

- 1) Professor Michael W. Okoth

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- 2) Dr. Sophia Ngala

Head of Applied Human Nutrition University of Nairobi.

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- 3) Dr. Dasel Kaindi Mulwa

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