

Stephen Ogada

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Professional Summary

I am a dedicated and results-driven research professional with over five years of extensive experience in omics research in East Africa. My work has focused on harnessing genetic diversity to drive agricultural advancements and promote biodiversity conservation initiatives. My skill set is multifaceted encompassing research proposal development, project management, comprehensive data analysis and science communication. I have a proven track record of leading and mentoring diverse teams of postgraduate students, research assistants, and technicians to ensure successful project execution and promoting a culture of continuous learning. I am eager to join a dynamic organization committed to advancing knowledge, influencing policy, and implementing impactful practices.

Skills and Competencies

- Team player with good communication, interpersonal and intercultural skills.
- Experience working in molecular biology and bioinformatics research (study conceptualization, design and execution).
- Strong knowledge and experience in wet lab and molecular biology techniques, including sample collection and storage, DNA/RNA extraction, PCR, and cDNA synthesis.
- Extensive knowledge of bioinformatics approaches for analysis of Sanger and amplicon sequence (16S rRNA), and omics data (genomics, RNA-Seq, shotgun metagenomics and Oxford Nanopore).
- Experience in Linux environments, R, Python, git version control, and best practices for reproducible bioinformatics analysis.
- Scientific writing (with publication record), presentation, and science communication skills.
- Organizational capacity building through training students, research staff and workshops.
- Project management and coordination

Education

Doctor of Philosophy (Biotechnology)	2018 – 2023
Jomo Kenyatta University of Agriculture and Technology, Kenya	
Master of Science (Biotechnology)	2014 – 2017
Jomo Kenyatta University of Agriculture and Technology, Kenya	
Bachelor of Science (Biochemistry)	2009 – 2013
University of Eldoret, Kenya	

Professional Experience

Part-time Lecturer – Jomo Kenyatta University of Agriculture and Technology	2022 – Present
<ul style="list-style-type: none">• Developing comprehensive lectures and training material for teaching and research.• Molecular biology techniques and laboratory practices training.• Assist graduate students with bioinformatics data analysis approaches.	

- Guide graduate students with research proposal development and proper research methods.
- Co-supervise graduate student research projects.

Key Achievements

- Revised and upgraded the bioinformatics course curriculum with recent technologies applied in bioinformatics research.
- Trained biotechnologists on next-generation bioinformatics techniques.
- Successful co-supervision until completion of two Master of Science (Biotechnology) students.

Technical Project Coordinator – Jomo Kenyatta University of Agriculture and Technology.

2022 – 2023

Kenya Climate Smart Agriculture Project (*Adapting and Building Resilience to Climate Change; Study on Galla goats of Kenya*)

- Co-supervise graduate student research projects
- Participated in conceptualizing the study design in collaboration with the Principal Investigators from the Kenya Agricultural and Livestock Research Organization (KALRO) and Jomo Kenyatta University of Agriculture and Technology (JKUAT), Kenya.
- Assist in the implementation of the research project objectives and/or supervise designated aspects of the work.
- Track project and graduate students' performance to provide support and alternative solutions.

Key Achievements

- Co-supervised one graduate student's research work.
- Guided the development of manuscripts for the project.
- Developed course material for graduate students on the impact of climate change on agricultural livestock production and use of Galla goats as a climate-smart solution in East Africa.

Program Coordinator – Jomo Kenyatta University of Agriculture and Technology.

2020 – 2022

BIRD Program (*Directed Breeding Programs for Improved Poultry Livestock by Genetic Bioinformatics Research and Development in Kenya*)

- Proactively lead regular communication and coordination processes with the University teams and international partners.
- Build strong relationships with internal and external stakeholders and devised strategies, initiatives, and events promoting capacity building and training.
- Assisting in the organization of internal scientific seminars.
- Coordinating travel plans and developing work plans for visiting scientists.
- Coordination and event planning including logistics, budgets, venue selection and developing the program.
- Provided technical direction on genomic projects to scientists, graduate students, and technicians.

Key Achievements

- Successfully setting up a bioinformatics computer lab at Jomo Kenyatta University of Agriculture and Technology, Kenya.
- Created workshop training materials for genomics and bioinformatics training of graduate students, research officers and scientists.
- Successfully facilitated genomics and bioinformatics training of graduate students and research officers from local government agricultural research institutions.

- Helped strengthen the partnership between researchers and scientists from Jomo Kenyatta University of Agriculture and Technology, International Livestock Research Institute (ILRI), and Hasselt University, Belgium.

Research Assistant – Jomo Kenyatta University of Agriculture and Technology

2015 – 2019

- Planning and carrying out fieldwork in various counties in Kenya.
- Developing questionnaires and collecting data using Open Data Kit (ODK) and other platforms.
- Cleaning, sorting, and analysis of descriptive data using R and SPSS.
- Sample collection, storage and processing (tissue, whole blood, blood in FTA, swabs in dry ice or liquid nitrogen).
- Conducting laboratory experiments i.e., DNA and RNA extraction, PCR amplification.
- Analysis of Sanger sequence data using bioinformatics tools such as DNASTAR Lasergene, Bioedit, Arlequin, and DnaSP, among others.
- RNA-Seq analysis of poultry transcriptome data.
- Analysis of Next-generation sequence data using SAMtools & GATK workflows.
- Metagenomic sequencing and analysis of human and livestock samples using Illumina and Oxford Nanopore sequencing technologies.
- Assist in the interpretation and validation of results; participate in writing manuscripts.

Key Achievements

- Wrote and published beneficial and impactful research manuscripts with research partners and collaborators.
- Participated in country-wide genomic surveillance of bat-borne viruses in Kenya through sample collection and processing in collaboration with the Kenya Wildlife Service, the National Museums of Kenya, and Wuhan Institute of Virology, China.
- Participated in genomic surveillance for Coronaviruses in dromedary camels of Kenya through sample collection, processing and descriptive analysis in collaboration with the Ministry of Agriculture, Livestock, Fisheries and Co-operatives, Kenya and Wuhan Institute of Virology, China.
- Provided local and regional reference Newcastle Disease virus information for future studies in the development of improved control and diagnostic strategies.
- Developed and led the implementation of laboratory standard operation procedures and protocols.
- Development of research workflows and analysis step-wise guides for use by other students, research officers, and scientists in the various research consortiums.
- Sampling and generation of Kenyan indigenous chicken genomic data for research in collaboration with the Kunming Institute of Zoology, China.

Publications

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- Masila, E. M., **Ogada, S. O.**, Ogali, I. N., Kennedy, G. M., Too, E. K., & Ommeh, C. S. (2024). Mitochondrial DNA D-Loop Polymorphisms among the Galla Goats Reveals Multiple Maternal Origins with Implication on the Functional Diversity of the HSP70 Gene. *Genetics Research*, 2024. <https://doi.org/10.1155/2024/5564596>
 - Ochieng, W. A., Wei, L., Wagutu, G. K., Xian, L., Muthui, S. W., **Ogada, S.**, ... & Liu, F. (2023). Transcriptome Analysis of Macrophytes' *Myriophyllum spicatum* Response to Ammonium Nitrogen Stress Using the Whole Plant Individual. *Plants*, 12(22), 3875. <https://doi.org/10.3390/plants12223875>

- Omire, A., Neondo, J., Budambula, NLM., Wangai, L., **Ogada, S.**, & Mweu, C. (2022). Genetic Diversity and Population Structure of Doum Palm (*Hyphaene compressa*) Using Genotyping by Sequencing. *Frontiers in Genetics*. 13:762202. <https://doi.org/10.3389/fgene.2022.762202>
- **Ogada, S.**, Lichoti, J., Musina, J., & Ommeh, S. (2022). A review of the distribution, nutritional value and conservation status of wild harlequin quails (*Coturnix delegorguei delegorguei*) in Kenya. *Journal of Agriculture, Science and Technology*, 21(1), 43-48.
- **Ogada, S.**, Otecko, N. O., Moraa Kennedy, G., Musina, J., Agwanda, B., Obanda, V., Lichoti, J., Peng, M.-S., & Ommeh, S. (2021). Demographic history and genetic diversity of wild African harlequin quail (*Coturnix delegorguei delegorguei*) populations of Kenya. *Ecology and Evolution*, 11, 18562–18574. <https://doi.org/10.1002/ece3.8458>
- Ogali, I. N., Okumu, P. O., Mungube, E. O., Lichoti, J. K., **Ogada, S.**, Moraa, G. K., ... & Ommeh, S. C. (2020). Genomic and pathogenic characteristics of virulent Newcastle disease virus isolated from chicken in live bird markets and backyard flocks in Kenya. *International journal of microbiology*, 2020: 4705768. <https://doi.org/10.1155/2020/4705768>
- Otecko, N. O., Ogali, I., Mauki, D. H., **Ogada, S.**, Moraa, G. K., Lichoti, J., ... & Zhang, Y. P. (2019). Phenotypic and morphometric differentiation of indigenous chickens from Kenya and other tropical countries augments perspectives for genetic resource improvement and conservation. *Poultry science*, 98(7), 2747-2755. <https://doi.org/10.3382/ps/pez097>

Conferences

International Society of Animal Genetics (ISAG) Virtual Conference (July 26-30, 2021).

5th National Museums of Kenya Biennial Science Conference (November 7-9, 2018) – Oral Presentation

Professional services

Peer Reviewer, *Journal of Agriculture, Science & Technology* (2023 – Present).

Referee

Dr. Irene Nafula Ogali
 Research Scientist – Kenya Agriculture & Livestock Research Organization
 P.O Box 32-00902, Kikuyu, Kenya
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Dr. Newton Otecko
 Scientist – Nuffield Department of Medicine, Big Data Institute
 University of Oxford
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Prof. Justus Onguso
 Director – Institute for Biotechnology Research
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