THE TECHNICAL UNIVERSITY OF KENYA

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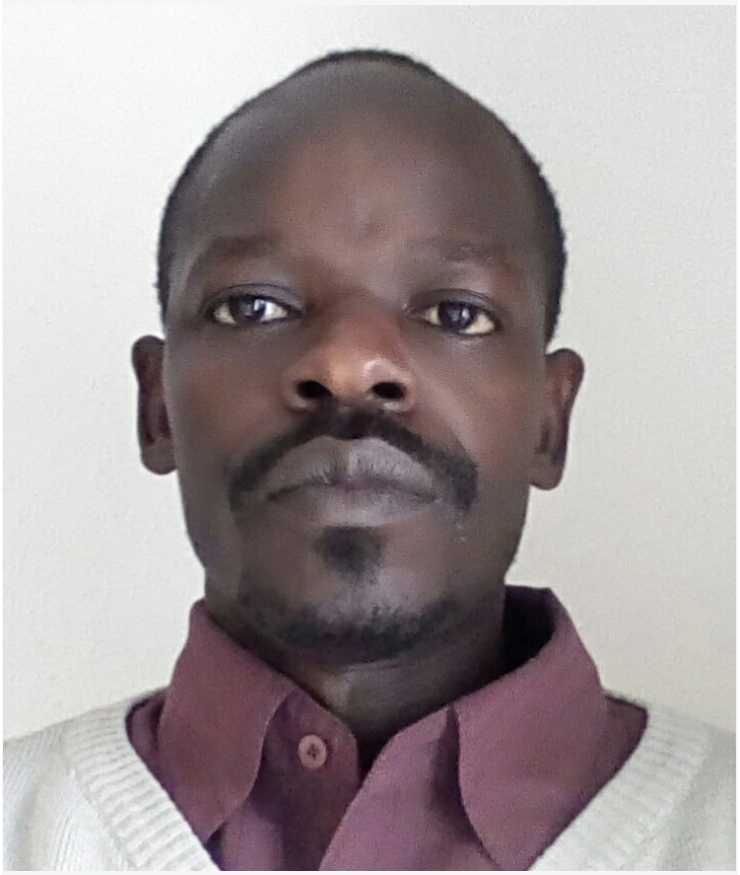

Faculty:	Applied Sciences and Technology
School:	Biological and Life Sciences
Department:	Biochemistry and Biotechnology
Current Designation:	Senior Lecturer, DEPARTMENT OF BIOLOGICAL AND LIFE SCIENCES
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Consultation Hours:	8AM-5PM MON - FRI

EDUCATION

LEVEL	QUALIFICATION NAME	INSTITUTION	YEAR
Doctor of Philosophy (PhD)	Bioinformatics	University of the Western Cape(South Africa)	2015
Masters of Science (M.Sc.)	Cell and Molecular Biology	Maseno University(Kenya)	2011
Bachelor of Science (BSc)	Agricultural Education and Extension	Egerton University(Kenya)	2001
Diploma	Human Resource Management	Kenya Institute of Management(Kenya)	2007
O level/Equivalent	KENYA CERTIFICATE OF SECONDARY EDUCATION	AMBIRA HIGH SCHOOL(Kenya)	1994
KCPE/Equivalent	KENYA CERTIFICATE OF PRIMARY EDUCATION	SIHAY PRIMARY SCHOOL(Kenya)	1990

WORK EXPERIENCE

PERIOD	INSTITUTION	POSITION
2022 - To date	The Technical University of Kenya	Senior Lecturer
2016 - 2018	Max Planck Institute for Chemical Ecology, Jena, Germany	Post Doctoral Research
2011 - 2014	ICIPE, Duduville Campus, Nairobi	PhD Research Scholar
2002 - 2011	High School	Graduate Science Teacher I
2009 - 2010	International Livestock Research Institute (ILRI), Nairobi, Kenya	Graduate Research Scholar
2015 - - *	The Technical University of Kenya (TU-K)	Senior Lecturer

GENERAL STATEMENT ON RESEARCH AREAS

Genomics, Neurogenetics and Molecular Biology. Insects and microorganisms play critical roles in the lives of humans, animals and plants in Africa by destroying crops, vectoring tropical infectious and neglected diseases. Studying the specific genes encoded in the DNA of insects and microbial species (including apicomplexans, bacteria and viruses) helps to understand their biology and ecology.

CURRENT RESEARCH PROJECTS

Chemical Communication: Chemosensation	Genomics and Neurogenetics

SELECTED PUBLICATIONS

TITLE	LINK TO PUBLICATION	YEAR
Inverse resource allocation between vision and olfaction across the genus Drosophila.	View online	2019
The olfactory coreceptor IR8a governs larval feces-mediated competition avoidance in a hawkmoth.	View online	2019
Evolution of a pest: towards the complete neuroethology of Drosophila suzukii and the subgenus Sophophora.	View online	2019
Genome Sequence of the Tsetse Fly (Glossina morsitans): Vector of African Trypanosomiasis. *Obiero co-authored the chemosensory section of the article. .	View online	2014
Post-vaccine rotavirus genotype distribution in Nairobi County, Kenya.	View online	2020
Thesis: Genome-wide annotation of chemosensory and glutamate-gated receptors, and related genes in Glossina morsitans morsitans tsetse fly. Published Doctoral thesis, University of the Western Cape.	View online	2015
Chemoreceptor diversity in apoid wasps and its reduction during the evolution of the pollen-collecting lifestyle of bees (Hymenoptera: Apoidea).	View online	2021
Book Chapter 4: Chemosensory system of tsetse flies (Diptera: Glossinidae). In: Sensory ecology of dissease vectors	View online	2022
Annotations of novel antennae-expressed genes in male Glossina morsitans morsitans tsetse flies	View online	2022
In silico structural and functional prediction of African swine fever virus protein-B263R reveals features of a TATA-binding protein.	View online	2018
Rotavirus prevalence and seasonal distribution post vaccine introduction in Nairobi county Kenya.	View online	2019
Chemosensory receptors in tsetse flies provide link between chemical and behavioural ecology.	View online	2014
Odorant and Gustatory Receptors in tsetse fly Glossina morsitans morsitans.	View online	2014
Functional olfactory evolution in Drosophila suzukii and the subgenus Sophophora	View online	2022
Expression Levels of Odorant Receptor Genes in the Savanna Tsetse Fly, Glossina morsitans morsitans.	View online	2018
Sodium Metabisulfite-Induced Hematotoxicity, Oxidative Stress, and Organ Damage Ameliorated by Standardized Ginkgo biloba in Mice	View online	2023

POSTGRADUATE STUDENTS SUPERVISION

NAME	PROJECT TITLE	PERIOD
PhD. candidate, TU-K	Application of Structural Bioinformatics in African Swine Fever Virus antivirals	2015-2022
MSc. candidate, JKUAT	Expression profiles of odorant receptor genes in the savannah tsetse fly Glossina morsitan morsitans.	2015-2017
MSc. candidate, Egerton University	Evolution of Vitamin And Co-enzyme genes in insects.	2012-2014
MSc. candidate, JKUAT	Molecular traits of Frankliniella thrips species in Kenya.	2013-2015
MSc. candidate, JKUAT	Diversity of neurotransmitter receptor genes in genomes of tsetse fly species.	2015-2018
PhD. candidate TUK	Impact of Rotavirus Vaccine: A case study in selected health facilities in Nairobi county, Kenya.	2017-2021
MSc. candidate, TU-K	Comparative characterization of chemosensory active genes in Bactrocera species genomes	2024- ongoing

COURSES TAUGHT

NAME	DESCRIPTION	PERIOD
Internet Technology and Applications in Bioinformatics	Genomic DNA and Proteins are studied using computer systems, via online linkages to various databases that host bioinformatic tools and molecular data. The students need to understand the underlying principles of internet functioning as a research tool in biological sciences.	2012 - 2016
Introduction to Bioinformatics	Gives the students the link between molecular biology and computational biology. Also, it provides a link from wet lab techniques of generating molecular data to use of computer systems to store, analyze and transfer the data to other computer systems. It covers databases and various bioinformatic analyses and their programs/tools.	September 2015 - TO-DATE
Molecular Biology	Introduces undergraduate students to the organization of DNA in various organisms; recombinant DNA technologies of manipulating DNA to produce various products, and gene expression mechanisms.	September 2015 - TO-DATE
Molecular Physiology	Introduces the students to the molecular basis of the structure and functionality of the cell membrane pertaining to various physiological processes.	2019 - todate
Molecular Immunology	Introduces the molecular mechanisms of how immune cells generate the diverse antibodies, cytokines, and receptors. It also examines how autoimmune disorders arise.	2015 - 2016 - TO-DATE
Molecular Evolution and Phylogenetics	Introduces basic concepts in Bioinformatics, molecular database systems and information retrieval, Sequences analysis, structural analysis, principles of drug design.	2021 - March 2021
Reproductive Biochemistry	Introduces students to basics of reproductive process in humans, application of modern technology in reproductive health, and birth control methods.	2019 - TO-DATE
Computational Biology	Introduces the analysis methods of molecular data using deep learning tools, application tools, and visualization and interpretation of the results. This is a postgraduate course.	2023 - TO-DATE

PROFESSIONAL AFFILIATIONS AND SOCIETIES

TITLE	INSTITUTION
Cell And Molecular Biology	Maseno University, Kenya
Genomics & Chemical Ecology	Max Planck Institute of Chemical Ecology, Jena, Germany
Bioinformatics	University of the Western Cape, Cape Town, South Africa
Agricultural Education	Egerton University