

## CURRICULUM VITAE

### SUSAN AKINYI ODERA

<b>CURRENT POSITION TITLE</b> Medical Microbiology research scientist and Lecturer	<b>Office Address:</b> Department of Medical Microbiology and Immunology, School of Medicine, University of Nairobi
	<b>Home Address:</b> 17446 - 00100, Nairobi, Kenya
	<b>Work Phone:</b> +254 723470211
	<b>Work Email:</b> <a href="mailto:susan.oder@uonbi.ac.ke">susan.oder@uonbi.ac.ke</a>
	<b>Alternative Email:</b> <a href="mailto:sueoder7@gmail.com">sueoder7@gmail.com</a>
	<b>Nationality:</b> Kenyan
<b>DATE OF BIRTH:</b> 7 <sup>th</sup> January 1982	

**CAREER GOALS:** I am a medical microbiologist keen on investigating infectious diseases using a One-Health approach. My research areas of interest investigate the interplay of host and pathogen factors in susceptibility to infection and disease progression, and influence from the environment. At the community level, I seek to explore innovative approaches to assessing and improving air quality and preventing the transmission of air-borne microbial pathogens.

### EDUCATION

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
University of Nairobi	PhD	2023	Doctor of Philosophy in Medical Microbiology (Bacteriology and Immunology)
University of Nairobi	MSc	2004 – 2008	Master of Science in Medical Microbiology
University of Nairobi	BSc	2000 – 2003	Bachelor of Science: Biomedical Laboratory Technology
Alliance Girls High School	KCSE	1994 – 1998	

### TRAINING

LOCATION	ORGANIZER	TRAINING	YEAR
Nairobi/Seattle online-onsite	University of Washington	Advanced TB Research Training Course	2024
Nairobi	Ministry of Health, Kenya and USAID	New National TB Strategic Plan 2023/24-2028/29: TB Strategy Dissemination	2024
Nairobi	Collaborative Institutional Training Programme, Fort Lauderdale, USA	Biomedical research-Ethics of Human Subjects Research	2024
Nairobi	The Global Health Network	ICH Good Clinical Practice	2024
Nairobi-online/onsite London, England	Qiagen	Global TB Summit	2023
Nairobi-online	University of Nairobi	Mental health awareness: World Health Mental Webinar	2023

Nairobi- online	McGill University, Canada	Advanced TB Diagnostics Course	2023
Nairobi- online	Kenyatta National Hospital- University of Nairobi	KNH-UoN Continuing Professional Development Webinars	2022-ongoing
Nairobi, Kenya	University of Nairobi	Online modes of training and examination of students	2020-2021
Nairobi, Kenya	University of Nairobi	Pedagogy in Higher Learning	2017
Nairobi, Kenya	The Association of Commonwealth Universities	Structured Training for African Researchers	2014-2015
Nairobi, Kenya	American Society for Microbiology	Laboratory Mentoring Programme for Laboratory Capacity	2014
Nairobi, Kenya	American Society for Microbiology	Disease-specific Diagnostic Enhancement Program, meeting of the Technical Advisory Group	2014
Nairobi, Kenya	KAVI-ICR	Good Clinical & Laboratory Practice'	2012
Nairobi, Kenya	College of Health Sciences, University of Nairobi	Intel Skool Training program on E- learning at	2012
Manitoba, Canada	-KAVI-ICR, -National Microbiology Reference Laboratory- Canada -University of Manitoba	TB collaborative program training	2012
Nairobi, Kenya	-University of Nairobi -University of Washington	Responsible Conduct of Research	2012
Nairobi, Kenya	-Hain Lifesciences Diagnostics	Line-Probe Assay for DNA TB & MDRTB Diagnosis	2011
Nairobi, Kenya	Medical Education Partnership Initiative, University of Nairobi	Teachers Training on Innovative Methods of Teaching	2011
Nairobi, Kenya	Medical Education Partnership Initiative, University of Nairobi	Responsible Conduct of Research Course	2011
Nairobi, Kenya	Hain Life science Diagnostics East Africa, Nairobi- University of Nairobi	Genotype Product Series Mycobacteria based DNA Strip Technology by	2011
Nairobi, Kenya	UNITID, University of Nairobi	Containment level 3 facility training and writing of Standard Operating Procedures for a Biosafety Level 3 Laboratory	2009

### **POSITIONS AND EMPLOYMENT**

2022 to Present	Lecturer, Department of Medical Microbiology and Immunology, Faculty of Health Sciences, University of Nairobi.
2019 to 2024	Part-time Lecturer and Medical Microbiology coordinator, Department of Nursing and Midwifery, School of Medical Sciences, Amref International University.
2010 to 2022	Tutorial Fellow, Department of Medical Microbiology, School of Medicine, University of Nairobi.

2008 to 2010	Senior Laboratory Technologist (Bacteriology and Mycology section), Department of Medical Microbiology, University of Nairobi.
2004-2008	Msc. Medical Microbiology student, University of Nairobi
2004	Laboratory Technologist at the African Air Rescue (AAR) Health Center Laboratory
2003	Research Assistant, Center for Biotechnology Research and Development, Kenya Medical Research Institute (KEMRI)
2002 – 2003	Medical Laboratory technologist trainee, The Nairobi Hospital.

#### Current Responsibilities:

- Teaching undergraduate (Medical, Nursing, Dental, Pharmacy, and Medical Laboratory students) and postgraduate students in the Department of Medical Microbiology and Immunology
- Setting, uploading, invigilation and marking examinations
- Supervising undergraduate and postgraduate students' theses, dissertations and research projects
- Mentoring students and offering tutorials
- Reviewing curriculum and content development for e-learning
- Participating in laboratory diagnosis and research work within the department
- Course coordinator for Medical Microbiology units for Bachelor of Science in Nursing
- Member of the Department of Medical Microbiology Anti-corruption Committee
- Member Faculty of Health Sciences Cultural Advisory Committee

#### **CONSULTANCY:**

- Amref International University 2024: Development of e-learning content in Medical Microbiology, Parasitology and Entomology for Community Health Practice degree programme.
- ThynkCare Foundation: 2023-2024: Development of educational material for Menstrual Hygiene Management, and Infection prevention and control measures in a care facility for differently abled girls..
- Celtic Breez (ongoing): Air Quality, Infection Prevention and Control.

#### **MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS AND SOCIETIES**

- Infectious Diseases Society of Kenya
- American Society for Microbiology: Membership ID Number 56949399
- European Society of Clinical Microbiology and Infectious Diseases: Young Scientist member, Registered ID Number 62321

#### **RESEARCH GRANTS and AWARDS**

National Research Fund (NRF-NACOSTI) 2017 - 12,000 USD

Vice-Chancellor's Excellence Award- the UoN Vice-Chancellor's 2023/2024 staff appraisal Lecturer's Award for Exemplary Performance.

## **RESEARCH PROJECTS**

Antimicrobial Curtains project: A collaborative study between the Department of Medical Microbiology and Immunology (University of Nairobi), PMB Health and Safety Services (South Africa) and Trustmed (Nairobi) on innovative methods of infection prevention and control.

The Qualifood project: A collaborative study between partner institutions: The University of Copenhagen (Danish lead institution), Roskilde University (primary North partner), the University of Nairobi (primary South partner and Kenya Dairy Board (secondary South partner). The project aims to tackle Antimicrobial Resistance with a One Health Approach and calls for collaborative efforts to improve farmers' understanding of resistance to antimicrobial agents, promote sustainable farming practices, and enhance food safety standards, focusing on long-term solutions that account for social, economic, and environmental contexts.

## **POSTGRADUATE STUDENTS SUPERVISION**

### **On-going Studies**

Doctor of Philosophy (PhD) in Medical Microbiology, University of Nairobi:

1. Susan Musau (H80/61236/2023): Genetic diversity and drug-resistant patterns of *Mycobacterium tuberculosis* complex circulating in Western Kenya' (role: co-supervisor).
2. Dan Waithiru (HMM81/63455/2025): Unveiling the dynamics of antimicrobial resistance, mobile genetic elements, and virulence factors in peri-urban dairy and poultry farming (role: co-supervisor).
3. Kevin Kariuki: Epidemiology, Genetic characteristics and carriage of *Escherichia coli* from children post-hospital discharge (role: co-supervisor).

Master of Science in Medical Microbiology, University of Nairobi:

1. Wilfred Bundi Mureithi (HMM61/45163/2023): *Mycobacterium tuberculosis* aerosol detection based on face mask sampling in adults with pulmonary tuberculosis (role: lead supervisor)
2. Ifrah Khairah Robleh (H56/40573/2021): Antimicrobial susceptibility profile of bacterial pathogens isolated from patients with urinary tract infections at Borama General Hospital, Somaliland (role: lead supervisor)
3. Pellen Mungai (H56/3515/2019): 'Mutation patterns of Rifampicin Resistant *Mycobacterium tuberculosis* from the National Tuberculosis Reference Laboratory, Kenya' (role: lead supervisor).
4. Rachel Mwongeli Peter (H56/40789/2021): 'Impact of diagnostic strategies for tuberculosis using urine lipoarabinomannan test and GeneXpert in people living with HIV and consequent clinical decision in Makeni county' (role: lead supervisor).
5. Anami Archellius Mudashi (H56/35472/2019): 'Genetic spectrum of non-tuberculous *Mycobacterium* in clinical samples from the National Tuberculosis Reference Laboratory, Kenya' (role: co-supervisor).

Master of Science in Tropical and Infectious Diseases, University of Nairobi:

1. Leon Ogoti (W64/87979/2016): 'Epidemiological analysis and the correlation between substance use and pulmonary tuberculosis among patients on treatment for tuberculosis at Machakos Level 5 hospital' (role: co-supervisor)
2. Cross-born Ouko (W64/33936/2019): 'Barriers to diagnosis and treatment of tuberculosis patients at the Jaramogi Oginga Odinga Teaching and Referral Hospital' (role: chief supervisor)

3. Christine Wambua (W64/34203/2019): ‘Knowledge, awareness and practices of antimicrobial stewardship among clinical providers at Mbagathi Hospital’ (role: co-supervisor).

#### Completed postgraduate studies

1. Dr. Daisy Kouko (W64/12007/2018): Msc. Tropical and Infectious Diseases, University of Nairobi ‘Assessment of infection prevention and control knowledge, practices, implementation and barriers among healthcare workers and support staff at Pumwani Maternity Hospital, Nairobi Kenya (graduated **2023**).
2. Dr. Kamau Evans Muhoro (W64/33682/2019): Msc. Tropical and Infectious Diseases, University of Nairobi ‘Assessment of hospital hand wash basin drains as ecological niches for biocide and antimicrobial resistant *Acinetobacter baumannii* complex species in a county referral hospital in Kenya’ (graduated **2022**).
3. Dr. Irum Mirza (W64/75786/2009): Msc. Tropical and Infectious Diseases, University of Nairobi ‘Hygiene practices and their association with urinary tract infections in women in Kenya (graduated **2021**).
4. Dr. Evelyn Machogu (W64/76388/2009) : Msc. Tropical and Infectious Diseases, University of Nairobi ‘Prevalence and risk factors for *Helicobacter Pylori* infection in children aged 3-60 months attending a private and a public hospital clinic in Kenya (Gertrude’s Children’s Hospital and Githogoro Clinic): A Comparative Study (graduated **2020**).
5. Dr Faisa Salah Arab (W64/6727/2017): Msc. Tropical and Infectious Diseases, University of Nairobi ‘The efficacy of antiseptics to bacteria isolates at Kenyatta National Hospital burns unit’ (graduated **2020**).
6. Ms Jeliath Muthoni (H56/81187/2015): Msc Medical Microbiology, University of Nairobi ‘Profiling of bacteria species in bacteria vaginosis infection associated with preterm births in Kisumu county (graduated **2019**).
7. Dr Elizabeth Mwanika (W64/87658/2016): Msc Tropical and Infectious Diseases, University of Nairobi ‘Antimicrobial susceptibility patterns of bacterial isolates in patients at Moi County Referral Hospital, Voi (graduated **2019**).
8. Ms Jane N Karuitha (H56/68026/2013): Msc Medical Microbiology, University of Nairobi ‘Prevalence and Antimicrobial Susceptibility profile of Mettalobetalactamse producing *Pseudomonas aeruginosa* isolated in Kenyatta National Hospital’ (graduated **2018**).
9. Dr. Abdullahi Adan Shaba (W64/81480/2015): Msc Tropical and Infectious Diseases, University of Nairobi ‘Vancomycin Susceptibility patterns of methicillin resistant Staphylococcus aureus isolates from wounds at Madina Hospital in Mogadishu, Somalia’ (graduated **2018**).
10. Ms Ombura Idah Pam (H56/76262/2009): Msc Medical Microbiology, University of Nairobi ‘Prevalence of multidrug resistance tuberculosis at the Coast General Hospital, Mombasa’ (graduated **2016**).
11. Ms Millicent Ogutu (H56/84057/2012): MSc Medical Microbiology, University of Nairobi ‘Resistance pattern of isolates from bacterial vaginosis in female sex workers in Nairobi, Kenya’ (graduated **2015**).

12. Dr. Lavinia Bwisa (W64/68981/2011): MSc in Tropical and Infectious Diseases, University of Nairobi ‘Antimicrobial susceptibility patterns of bacterial isolated from sterile sites: Cerebrospinal fluid, Blood, Peritoneal fluid, Pleural fluid, and Synovial fluid at Kenyatta National Hospital’ (graduated **2014**).
13. Dr. Lilian Nkirote Njagi (W64/76467/2009): MSc in Tropical and Infectious Diseases, University of Nairobi ‘Antimicrobial susceptibility patterns of bacterial pathogens causing urinary tract infections amongst paediatric patients at the Nairobi Hospital’ (graduated **2012**).
14. Dr. Bernard Nyakundi (W64/76776/09): MSc in Tropical and Infectious Diseases, University of Nairobi ‘Assessment of laboratory diagnostic tests and treatment of typhoid at the University of Nairobi Health services’ (graduated **2012**).

## **UNDERGRADUATE STUDENTS SUPERVISION**

### Ongoing Studies:

1. Ann Wakesho Mwamburi (H38/4782/2019) BSc Medical Laboratory Science and Technology, University of Nairobi. ‘Prevalence of extra-pulmonary TB among TB/HIV coinfecting patients at the Comprehensive Care Clinic, Kenyatta National Hospital: a retrospective study 2019-2024’. (on-going)

### Completed studies:

1. Esther Mbithe Musau (H38/1549/2020): BSc Medical Laboratory Science and Technology, University of Nairobi. ‘Prevalence of Rifampicin Resistance in samples from Tuberculosis patients presenting at Kenyatta National Hospital Microbiology Laboratory’ (graduated 2024).
2. Lilian Mwendu Kimanthi (H38/136830/2019): BSc. Medical Laboratory Science and Technology, University of Nairobi. ‘Assessment of Quality Assurance in preparation of culture media at the Kenyatta National Hospital Microbiology laboratory’ (graduated 2023).
3. Mbae Muriithi (H38/37059/2010): BSc. Medical Laboratory Science and Technology, University of Nairobi. ‘A retrospective study on antimicrobial susceptibility profile of bacteria isolated from infected diabetic ulcers in patients at the Diabetic Care Centre at Kenyatta National Hospital, Nairobi from 2019 to 2020’ (graduated 2021).
4. Kahiu Stephen Maina (H38/4636/2017): BSc. Medical Laboratory Science and Technology, University of Nairobi. ‘Antimicrobial susceptibility profile of bacterial pathogens isolated from urine samples at Kenyatta National Hospital Microbiology Laboratory’ (graduated 2020).
5. Bob Nashon Obiero (H38/4440/2015): BSc. Medical Laboratory Science and Technology, University of Nairobi. ‘Prevalence of Antimicrobial resistance in pathogens isolated from children with neonatal sepsis at Kenyatta National Hospital’: 2017-2018 (graduated 2019).
6. Gachukia Robinson Waweru (H38/4838/2016): Bsc. Medical Laboratory Science and Technology, University of Nairobi. ‘Analysis of Quality Indicators for Pre-Analytical Assessment for Culture in Kenyatta National Hospital Microbiology Laboratory’ (graduated 2019).
7. Omonywa Justin Ayora (H38/34903/2014): Bsc. Medical Laboratory Science and Technology, University of Nairobi. ‘Prevalence of bacterial ascites among patients in Kenyatta National Hospital between the years 2015-2017’ (graduated 2019).

8. Mulwa Veronicah Kiluti (H38/4438/2015): Bsc. Medical Laboratory Science and Technology, University of Nairobi. 'Prevalence of tuberculosis infection in HIV negative individuals presenting at Kenyatta National Hospital' (graduated 2019).
9. Charles Nkaisunkui Sankei (H38/30904/2014): Bsc. Medical Laboratory Science and Technology, University of Nairobi. 'Prevalence of *Escherichia coli* associated urinary tract infections among catheterized patients at the intensive care units of Kenyatta National Hospital (graduated 2018).
10. Chumba Kiprop Anthony (H38/1221/2013): Bsc. Medical Laboratory Science and Technology, University of Nairobi. 'Aetiology of Meningitis in Kenyatta National Hospital Microbiology Laboratory' (graduated 2017).
11. Ms Gachogo Rachel Wanja (H38/3876/2011): BSc Medical Laboratory Science and Technology, University of Nairobi. 'The rate of bacterial contamination of urine specimen processed in Kenyatta National Hospital microbiology laboratory' (graduated 2015).
12. Ms Magdalene Burugu: Bsc. Medical Microbiology, Jomo Kenyatta University of Agriculture and Technology. 'Antibiotic susceptibility patterns of bacteria isolates from post-surgical wounds at Kenyatta National Hospital' (graduated 2012).

#### **SELECT CONFERENCES/WORKSHOPS**

1. World Antimicrobial Awareness Week, Nairobi, 2024.
2. American Society for Medical Microbiology, Hybrid-Chicago America, 2020- poster presentation
3. 30<sup>th</sup> European Congress of Clinical Microbiology and Infectious Diseases, Hybrid-Paris, France 2020- poster presentation
4. Biennial Infectious Disease Conference (BIDCon), Nairobi, Kenya, 2019
5. Session Rapporteur: Kenyatta National Hospital/University of Nairobi International Conference on Health, 2018
6. KNH/UoN International Conference on Health, 2018: Poster presentation: Latent tuberculosis infection among household contacts of pulmonary tuberculosis cases in Nairobi, Kenya: Prevalence and associated factors
7. SANTHE Conference, Nairobi, 2015: The Role of Human Leukocyte Antigens and *M. tuberculosis* Strain Variation in susceptibility to infection among Pulmonary Tuberculosis patients and their Household Contacts in a sub-Saharan Setting
8. WHO Workshop on Human Semenology, 12<sup>th</sup> meeting, University of Stellenbosch, Cape Town, South Africa, 2009

#### **PUBLICATIONS IN PEER-REVIEWED JOURNAL**

1. Association between Human Leukocyte Antigen class II (HLA-DRB and -DQB) alleles and outcome of exposure to *Mycobacterium tuberculosis*: a cross-sectional study in Nairobi, Kenya. **Susan Odera**, Marianne Mureithi, Andrew Aballa, Noel Onyango, Samwel Kazungu, Simon Ogolla, George Kaiyare, Omu Anzalla, Julius Oyugi. Pan African Medical Journal. 2022; 41:149 doi:10.11604/pamj.2022.41.149.30056]

2. Latent tuberculosis among household contacts of pulmonary tuberculosis cases in Nairobi, Kenya; **Susan Odera**, Marianne Mureithi, Andrew Aballa, Noel Onyango, Omu Anzala, Julius Oyugi. Pan African Medical Journal. **2020**; 37(87).10.11604/pamj.2020.37.84.21102
3. A survey for *Legionella pneumophila* among pneumonia patients at Kenyatta National Hospital; **Susan Odera**, Omu Anzala. East African Medical Journal **2009** Vol.86 No.12 pp 565-571.
4. The prevalence, clinical features, risk factors and outcome associated with cryptococcal meningitis in HIV positive patients in Kenya; Rennatus Mdodo, Kristal Brown, Enoch Omonge, Walter Jaoko, John Braddley, Peter Pappas, Mirjam-Colette Kemp, Inmaculada Aban, **Susan Odera**, Andrew Suleh and Pauline Jolly. East African Medical Journal **2010** Vol.87 No. 12 pp 481- 483
5. Antifungal susceptibilities of *Cryptococcus neoformans* cerebrospinal fluid isolates from AIDS patients in Kenya; Mdodo R, Moser SA, Jaoko W, Baddley J, Pappas P, Kempf MC, Aban I, **Odera S**, Jolly P; Mycoses **2011** 54 (5): e438-42.
6. Mortality after clinical management of AIDS- associated Cryptococcal meningitis in Kenya; R. Baldassare, R. Mdodo, E. Omonge, W, Jaoko, J. Baddley, P. Pappas, I. Aban, **S. Odera**, A. Suleh, and P.E. Jolly. East African Medical Journal May **2014** Vol. 91 No. 5 pp 145-151
7. Antimicrobial susceptibility patterns of urinary bacteria amongst paediatric patients at the Nairobi Hospital, a private sector city hospital in Kenya; L.N. Njagi, **S. Odera** and F. Mutua. East African Medical Journal vol. 92 No. 3 March **2015**
8. Antibiotic susceptibility of organisms causing urinary tract infection in patients presenting at Kenyatta National Hospital, Nairobi; H. I. Magale, I. A. Kassim, **S. A. Odera**, M. J. Omolo, W. G. Jaoko and P. E. Jolly. East African Medical Journal Vol. 92 No. 7 July **2015**
9. Prevalence of drug resistance *Mycobacterium tuberculosis* among patients seen in Coast General Hospital, Mombasa, Kenya; Idah Pam Ombura, Noel Onyango, **Susan Odera**, Florence Mutua, Joshua Nyagol PLoS ONE **2016**11(10): e0163994.doi:10.1371/journal.pone.0163994
10. Prevalence and Antimicrobial susceptibility profile of metallo-beta-lactamase producing *Pseudomonas aeruginosa* isolates at Kenyatta National Hospital; Jane Njeri Karuitha, **Odera Susan Akinyi**, Maina Anne Njeri, Mureithi Marianne. Advances in Microbiology, **2018**, 8: 885-893

## REFEREES

1. Prof. Walter Jaoko - Professor, Department of Medical Microbiology and Immunology and Director Kenya Aids Vaccine Initiative and Institute of Clinical Research, University of Nairobi Tel. 0727555254
2. Prof. Julius Oyugi- Professor, Department of Medical Microbiology and Immunology and Director University of Nairobi Institute of Tropical and Infectious Diseases, University of Nairobi Tel. 0713898564
3. Dr. Angeline Kirui- Lecturer, Department of Nursing Sciences, University of Nairobi Tel. 0720440665