

# CURRICULUM VITAE



**Dr. James O. Ogutu, PhD**

## **Synopsis:**

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- ~Areas of research interest
- ~Employment/work experience
- ~Academic profile
- ~Key skills, abilities and clinical lab proficiencies
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- ~Fellowships
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- ~Referees

# DR. JAMES O. OGUTU, PhD (HMU), MSc, BSc (UoM)

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## CAREER OBJECTIVE:

- To pursue an active, dynamic, productive and meaningful career in an institution where my knowledge, professional skills, expertise and talents are used to provide quality services (technical, academic or otherwise).

## PERSONAL PROFILE:

Date of birth : June 15, 1980  
Gender : Male  
Marital status : Married with two children  
Nationality : Kenyan  
Passport No. : A1813540

## AREAS OF PROFESSIONAL SPECIALIZATION:

- Medical Microbiology; Molecular Diagnostics; Medical Parasitology; Immunology.

## AREAS OF RESEARCH INTEREST:

- Mechanisms of pathogenesis of opportunistic infections in immunocompromised individuals.
- Molecular multiplex diagnostic systems for detection of multiple drug resistant Gram negative bacteria from clinical sources.
- Novel multiplex molecular diagnostic systems for detection of notorious hospital pathogens at the casualty, critical and/or intensive care units.
- Molecular characterization of antibiotic resistance genes.
- Possible involvement of sRNAs in the regulation of  $\beta$ -lactamase production and activity.

- Mechanisms of resistance and survival after in the polymicrobe biofilms after exposure to antimicrobials.

### **EMPLOYMENT/WORK PROFILE:**

**Lecturer and Chairman | Department of Pathology | Kenyatta University | January 2016 to date**

- In charge of all departmental administrative duties and academic programs.

**Lecturer | Kenyatta University | July 2015 to date**

Duties include:

- Teaching and examining MBChB, BPham, B.Sc Nursing and Public Health, B.Sc Laboratory Science and B.Sc Environmental students on Medical Bacteriology, Mycology, Virology, Immunology, Parasitology & Entomology and Environmental Microbiology.
- Conducting laboratory practical classes, demonstrations and tutorials.
- Supervising and examining masters and PhD degree students.
- Carry out research and publishing on various topics of medical, academic and societal interest.
- Upgrading the curriculum from time to time to ensure it is up-to-date.

**Tutorial fellow | Kenyatta University | August 2010 to July 2015**

Duties included:

- Teaching and examining MBChB and B.Sc Nursing and Public Health students on Medical Bacteriology, Mycology and Virology.
- Conducting laboratory practical classes, demonstrations and tutorials.
- Upgrading the curriculum from time to time to ensure it is up-to-date.

**Part-time faculty | Aga Khan University Hospital | August 2010 to April 2012**

Duties included:

- Teaching and examining Post RN B.Sc Nursing program students on Medical Bacteriology, Mycology, Virology and Immunology.
- Conducting practicals and tutorials.

**Part-time lecturer | Kenyatta University | April 2006 to July 2010**

Duties included:

- Teaching and examining MBChB and B.Sc Nursing and Public Health students on Medical Bacteriology, Mycology and Virology.
- Conducting laboratory practical classes, demonstrations and tutorials.
- Upgrading the curriculum from time to time to ensure it is up-to-date.

**ACADEMIC PROFILE:**

**2015-2018: PhD in Medical Mycology – Kenyatta University, Kenya.**

PhD research involves phenotypic and genotypic characterization of clinical *Candida albicans* and non-albicans *Candida* (NAC) strains isolated from oropharyngeal and genital candidiasis-HIV-1 co-infection cases in a local County Referral Hospital. The study also involves identification and evaluation of the actual risk factors associated with the studied cases.

**2012-2015: PhD in Microbiology - Harbin Medical University, China.**

- PhD research involved the development and validation of a molecular tool for the multiplex detection of specific antibiotic resistance genes in *Enterobacteriaceae*. The molecular tool was used to detect resistance genes in clinical *Enterobacteriaceae* strains. The contribution and contribution of the studied genes to beta-lactam resistance were evaluated using statistical methods. The developed multiplex PCR system is currently under consideration for patenting.

### **2002-2005: MSc in Microbiology - University of Madras, India.**

- A three-year Master's degree program of the Faculty of Medicine incorporating Human Anatomy, Physiology, Biochemistry, General Pathology, Medical Statistics and Lab Animal Science in first year and Medical Microbiology proper in second and third years.
- MSc project involved the profiling of antibiotic resistance phenotypes of UTI-causing clinical bacterial strains from a tertiary health-care center.

### **1999-2002: BSc in Microbiology - University of Madras, India.**

- A broad course covering all the important aspects of Microbiology, Parasitology and Immunology along with the foundations of Biochemistry, Molecular Biology, Microbial Biotechnology, Bioinstrumentation, Basic Electronics and Laboratory Techniques.

### **KEY SKILLS AND ABILITIES:**

#### ***In silico* techniques**

- Designing of oligonucleotide primers for different applications using a variety of on- and off-line design programs.
- Assessment and evaluation of oligonucleotide primers for suitability and applicability in polymerase chain reactions.
- Translation of DNA sequences into protein sequences.
- Multiple sequence alignment, identification using on- and off-line programs.
- Analysis and identification of DNA/RNA sequencing data.
- Protein or nucleotide sequence BLAST search, evaluation and/or analysis.
- Generation of phylogenetic trees and determination of genetic relatedness.
- Preparation of nucleotide and protein sequences for submission to GenBank and other databases.

#### **Clinical Lab proficiencies**

- Isolation, identification and preservation of clinical bacterial strains.
- PCR and sequencing primer optimization and validation techniques.

- Extraction and preservation of DNA and RNA from bacterial cells.
- Polymerase chain reaction and other nucleic acid-based techniques.
- Multilocus sequence typing (MLST) of bacterial strains.
- Tissue and cell culture techniques.
- Chromatography, electrophoresis, centrifugation and colorimetric techniques.
- Sterilization and disinfection of equipment, media; and many others.

**PUBLISHED ARTICLES:**

1. Zhao J, Chen J, Zhao M, Qiu X, Chen X, Zhang W, Sun R, **Ogutu JO**, Zhang F. Multilocus sequence types and virulence determinants of hypermucoviscosity-positive *Klebsiella pneumoniae* isolated from community-acquired infection cases in Harbin, North China. *Japanese Journal of Infectious Diseases*. **Doi: 10.7883/yoken.JJID.2015.321**. [Epub ahead of print].
2. Jing Wu, Aimei Li, Yujun Li, Xiaoguang Li, Qingmeng Zhang, Wuqi Song, Yao Wang, **James O. Ogutu**, Jindong Wang, Jianbo Li, Renkuan Tang , Fengmin Zhang. Chlorpromazine inhibits mitochondrial apoptotic pathway via increasing expression of tissue factor. *The International Journal of Biochemistry & Cell Biology*. 2015; **70**: 82-91.
3. **James O. Ogutu**, Qingmeng Zhang, Ying Huang, Huo Yan, Lijie Su, Bo Gao, Wenli Zhang, Jizi Zhao, Wenhui Cai, Wenjing Li, Hong Zhao, Yang Chen, Wuqi Song, Xiaobei Chen, Yingmei Fu, Fengmin Zhang. Development of a multiplex PCR system and its application in the detection of blaSHV, blaTEM, blaCTX-M-1, blaCTX-M-9 and blaOXA-1 group genes in clinical *Klebsiella pneumoniae* and *Escherichia coli* strains. *Journal of Antibiotics*. 2015; **68**: 725-733.
4. Ying Huang, **James O. Ogutu**, Gu J, Ding F, You Yu, Zhao H, Li W, Zhang Z, Zhang W, Chen X, Fu Y, Zhang F. Comparative Analysis of Quinolone Resistance in Clinical Isolates of *Klebsiella pneumoniae* and *Escherichia coli* from Chinese Children and Adults. *BioMed Research International*. Doi:1155/2015/168292 [Epub ahead of print].

## PEER REVIEW ASSIGNMENTS

**PLOS ONE JOURNAL** – I have been registered as a peer reviewer for Microbiology research articles for **PLOS ONE Journal** since June 2016.

## JOURNAL EDITORIALS

1. **James O. Ogutu**. Antimicrobial resistance in human health. Editorial. *The East and Central Africa Medical Journal*. 2015; **2**:59.

## MANUSCRIPTS UNDER REVIEW:

1. Ying Huang, **James O. Ogutu**, Mingyu Zhang, Yingmei Fu, Jiarui Gu, Yan Huo, Lan Sun, Wenli Zhang, Xiaobei Chen, Fengmin Zhang. Medical students' knowledge, attitude and practice of antibiotic use: a study done in three countries with different income levels. *PLos One*.
2. Jizi Zhao, Jie Chen, Ming Zhao, Xiaohong Qiu, Xiaobei Chen, Wenli Zhang, Rui Sun, **James Opiyo Ogutu**, Fengmin Zhang. Association of CTX-M-type Extended-spectrum Beta-lactamase with high-level resistance to amikacin in *Klebsiella pneumoniae* clinical isolates. *BMC Microbiology*.

## MANUSCRIPT UNDER PREPARATION:

1. Wenli Zhang, **James O. Ogutu**, *et al.* Siderophores in clinical isolates of *Klebsiella pneumoniae* promote ciprofloxacin resistance by inhibiting the oxidative stress.

## PATENT UNDER OPEN NOTICE:

1. **James O. Ogutu**, Zhang Fengmin, Song Wuqi, Zhang Wenli, Cai Wenhui, Fu Yingmei. Newly developed group-specific multiplex PCR primers for rapid detection of  $\beta$ -lactamase (*bla*) genes. Patent Application number: CN2014104898894. Application date: 2014.09.23. Open (Notices) number CN104293925A public (announcement): 2015.01.21. Application (patent): Harbin Medical University.

### DNA SEQUENCES DEPOSITED AT NCBI's GENBANK:

Gene sequences detected in my previous works on  $\beta$ -lactamases are accessible in the NCBI's GenBank under accession numbers KP698217 through KP698229 and KR338940 through KR338951.

### CONFERENCES/SEMINARS/WORKSHOPS/SYMPOSIA:

1. "Antimicrobial Susceptibility Profile and Conjugation Characteristics of *Escherichia coli* isolates from Broiler and Indigenous Chicken in Kericho County, Kenya". Mutsami AN, Okemo P, Cheruiyot RC, Kariuki S, **Ogutu J**, Symekher S. L. 1<sup>st</sup> Biennial Conference on the Status of Higher Education in Kenya on August 22<sup>nd</sup> to 26<sup>th</sup> at Kenyatta University Amphitheatre.
2. "Evaluation of the contribution of *bla* genes in  $\beta$ -lactam-resistant clinical *Klebsiella pneumoniae* and *Escherichia coli* strains based on a newly developed multiplex PCR system" presented at the Russian-Chinese Conference on Medical Microbiology and Clinical Mycology held on June 9<sup>th</sup> to 11<sup>th</sup>, 2015 at Hotel «Saint-Petersburg», Pirogovskaya emb. 5/2 in St. Petersburg, Russia.
3. Participated in staff training on "Supervision skills" held on 27<sup>th</sup> October, 2015 by the Centre for Teaching Excellence and Research Training, Kenyatta University
4. Participated in a two-day training on "Trauma Model and its application for treating adult survivors of childhood trauma" on 23<sup>rd</sup> and 24<sup>th</sup> May, 2012 by Wellness Centre, Kenyatta University.
5. Participated in a two-day capacity building workshop on "How to deliver PUCU 500: University common e-course for all postgraduate students through Moodle" organized by Graduate School, Kenyatta University in July 2011.
6. Participated in a symposium on "Infectious Diseases" organized by Indian Association of Medical Microbiologists on December 22 2003 at King Institute of Preventive Medicine, Chennai, India.



### **ADMINISTRATIVE POSITIONS:**

1. January 2016 to date - Chairman, Department of Pathology, Kenyatta University.
2. January 2016 to date - Course Head (Medical Microbiology) in the Department of Pathology, Kenyatta University.
3. November 2015 to date - Time tables-in-Charge, Department of Pathology, Kenyatta University.
4. Developed the “Diploma in Mortuary Science Programme” in the Department of Pathology that was approved Kenyatta University Senate in August 2016.
5. Currently developing M.Sc Medical Microbiology and M.Sc Molecular Virology course programs for consideration and possible approval and adoption first by the Department of Pathology, then by the Senate, Kenyatta University.

### **FELLOWSHIPS AND GRANTS:**

1. June 2012 to July 2015 - Harbin Medical University PhD scholarship (USD 10,000.00).
2. July 2016 to June 2018 - National Council for Science, Technology and Innovation PhD Research Grant (Kshs 1, 140, 000.00).

### **PROPOSAL FOR FUNDING:**

1. Lead member of the Committee of the KU School of Medicine that wrote the Kenyatta University Institute of Non-communicable Diseases proposal submitted to the French Government in August 2016 for funding.
2. Currently writing the Kenyatta University Institute of Infectious Diseases proposal for consideration for funding.

### **MEMBERSHIP TO PROFESSIONAL BODIES:**

1. May 2016 to date - member of European Society of Clinical Microbiology and Infectious Diseases (ESCMID) - Member ID: 133020.

2. February 2016 to date – member of Infection Prevention Network (IPNET)-Kenya (Membership ID - IPNET-K42).
3. December 2015 to date – member of American Society for Microbiology (ASM) - Member ID: 57404956.
4. February 2015 to date – member of the International Society for Computational Biology (ISCB).

**REFEREES:**

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