Charles Emeka Okolie, PhD (08060241166; charles.okolie@sumas.edu.ng)

PhD 2009, University of Nottingham, UK (focus: sub-unit vaccines and molecular diagnostics)
PhD thesis at British Library (http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.517830)
MSc 2003 (School of Molecular Medical Sciences, University of Nottingham, UK)
30 papers in peer-reviewed journals including 17 indexed in Scopus™ and an
invited chapter in the 2017 volume of ***Methods in Molecular Biology***

1. BRIEF PERSON DESCRIPTION

Charles Okolie is a molecular biotechnologist with expertise in development of molecular diagnostic (MDx) tests and sub-unit vaccines (SUV). Charles was awarded the University of Nottingham Developing Solutions Chevening Scholarship for Master of Science (MSc) degree in Molecular Medical Microbiology during the 2002/2003 academic session. Further funding allowed Charles to complete the degree of doctorate (PhD) at the University of Nottingham's Centre for Biomolecular Sciences (CBS), where he proffered solutions to Methicillin resistant *Staphylococcus aureus* (MRSA) and Panton-Valentine leukocidn (PVL) which menaced public health in the UK at the time. Charles developed two vaccines targetting the LukS-PV and LukF-PV units of PVL. Charles also developed multiplex MDx tests in real-time polymerase chain reaction (rt-PCR) and conventional PCR platforms. Charles also served as the technical operator of the clinical trials of the first generation GeneXpert® MRSA-SA blood culture test (Cepheid, CA, USA) in Nottingham. Charles was the multiplex MDx researcher when the CBS was supporting a £3 million Technology Strategy Board project for UK's first indigenous MDx platforms currently trading as Enigma®. He earned his PhD in 2009 from the University of Nottingham and returned to Nigeria on a teaching role at the University of Jos. Dr Charles Okolie is energetic, hard-working, friendly, a great leader and team player. Charles has attended and presented his research at a number of scientific events including the European Molecular Biology Organization meeting (EMBO 2015) in Birmingham, UK. Dr Charles Okolie's published works include an invited chapter in the 2017 volume of the Springer Nature book ***Diagnostic Bacteriology*** in the very successful series ***Methods in Molecular Biology***.

2. PERSONAL DETAILS

- **Surname:** Okolie
- **Given Names:** Emeka Charles
- **Contact Information: Mobile:** +234 806 024 1166 **E-mail:** charlesokolie2015@gmail.com

3. EDUCATIONAL INSTITUTIONS ATTENDED WITH DATES

- The University of Nottingham (October 2004 – December 2009)
- The University of Nottingham (September 2002 – December 2003)
- Institute of Medical Laboratory Technology of Nigeria (October 2000 – December 2001)
- Institute of Medical Laboratory Technology of Nigeria (November 1987 – June 1992)

4. ACADEMIC AND PROFESSIONAL TRAINING AND QUALIFICATIONS RECEIVED

Table 1. Training and Qualifications With Awarding Institutions and Dates (Most Recent First)

Period of Training	Qualification Received	Training Center/Institution	Awarding Organization (if different from Training Center/Institution)	Title of Dissertation/Thesis
2004-2009	Doctor of Philosophy (PhD), December 2009	University of Nottingham, UK.	Same	Development of Diagnostic and Therapeutic Tools for *Staphylococcus aureus* infections.
2004	Certificate in Safety awarded May 2004	Eurest, Imperial Tobacco International Limited, Nottingham, England, UK.	Institution of Occupational Safety and Hygiene (UK and Ireland).	Not applicable
2004	Certificate in Hygiene, April 2004	Eurest, Imperial Tobacco International Limited, Nottingham, England, UK.	Institution of Occupational Safety and Hygiene (UK and Ireland).	Not applicable
2002-2003	Master of Science (MSc), December 2003	University of Nottingham, UK.	Same	Regulatory roles of *clpP* gene in *Helicobacter pylori.*
2000-2001	Fellow of the Institute of Medical Laboratory Technology (renamed Medical Laboratory Science Council of Nigeria, MLSCN), December 2001.	National Veterinary Research Institute (NVRI), Vom, Near Jos, Plateau State, Nigeria.	Institute of Medical Laboratory Technology (renamed Medical Laboratory Science Council of Nigeria, MLSCN).	Development of Inactivated Gumboro Virus Vaccine at the NVRI, Vom, Plateau State, Nigeria.
1987-1992	Associate of the Institute of Medical Laboratory Technology (renamed MLSCN), June 1992	Federal School of Medical Laboratory Technology, located in Jos University Teaching Hospital (JUTH), Jos, Plateau State, Nigeria.	Institute of Medical Laboratory Technology (renamed MLSCN).	Antibiotic Susceptibility Patterns of Bacterial Isolates from Infected Wounds in JUTH, Jos, Plateau State, Nigeria.

5. DETAILED CAREER HISTORY (beginning from current position)

- **December 2023 till date:** Professor and Head, Department of Medical Laboratory Science (MLS), State University of Medical and Applied Sciences, Igbo-Eno, Nsukka District, Enugu State, Nigeria. While teaching a number of courses to MLS students, Charles Okolie has started achieving excellence including delivery of full (100%) Core Curriculum and Minimum Academic Standards (CCMAS) for Bachelor of Medical Laboratory Science degree, hosting of Carnegie Diaspora Fellowship Program (CADFP) and chairmanship of committee for building of TETFund-funded Career Service Centre with the most modern Resource Space (likely Nigeria's best).
- **November 2021 - December 2023:** Reader, Department of Medical Laboratory Science, Faculty of Basic and Applied Sciences, Elizade University, Ilara-Mokin, Ondo State. Charles served as Head of the Department while teaching courses including Immunology, Microbiology, Molecular Biology, and Safety to undergraduate students of Medical Laboratory Science (MLS) and Nursing Science (NSC).
- **September 2012 - October, 2021:** Charles started as Lecturer I, Department of Microbiology, Landmark University, Omu-Aran, Kwara State. He was upgraded to Senior Lecturer in 2014. He served as acting Head of the department. He taught courses in Microbiology, Virology, Immunology and Molecular Biology to undergraduate and postgraduate students of Microbiology and Biotec. Charles served as Faculty postgraduate board member and started Biotechnology programme.
- **December 2009 – August, 2012:** Lecturer II, Department of Medical Laboratory Science, University of Jos (UNIJOS), Plateau State. Charles taught courses in molecular biology, virology, microbiology and immunology to undergraduate students of MLS. In two months of assumption of duty as departmental examination officer, Charles computed three years accumulated results for all students of MLS. He was helping the HoD at the time with PhD supervision.
- **October 2004 – December 2009:** Full-Time Research Training towards the Degree of Doctorate (PhD) under the supervision of Professor Richard James at the Centre for Biomolecular Sciences, the University of Nottingham, England, UK. PhD Research focused on Development of Molecular Diagnostic Tests and Recombinant Sub-unit Vaccines targeting *S. aureus* and phage-borne Panton-Valentine leukocidin (PVL) toxin. Panton-Valentine leukocidin (PVL) bi-component toxin were established, making the fusion proteins (antigens) directly available in ultra-pure form (Okolie *et al*., 2013: BMC Biotechnology, 13:103; PDF). The fusion proteins were used as sub-unit vaccines to raise monoclonal antibodies which specifically prevented PVL-associated leukotoxicity,

thereby providing the immunotherapy against *S. aureus* PVL toxicity (Project: Molecular pathogenesis of *Staphylococcus aureus*. DOI: 10.13140/RG.2.1.3412.3608. European Molecular Biology Organization, EMBO 2015). Also, the fusion proteins and their homologous monoclonal antibodies were supplied for studies on the effect of anti-Quorum-sensing molecules against the virulence of PVL-positive *S. aureus.* For diagnostics, a multiplex PCR assay was developed which simultaneously amplifies seven DNA targets (*vanA*, *tuf*, *16S, spa, mecA, pvl,* and *CoNS*). The assay has a diagnostic turn-around-time (DTAT) of 4hours for bacterial gene detection against ≥72hours possible with conventional bacteriological cultures (Okolie *et al*., 2015: BMC Microbiology. 15:157; PDF). Furthermore, five targets (*16S, spa, mecA, pvl,* and *CoNS*) were amplified and quantified in newly developed real-time PCR assay which further reduced the DTAT to less than one hour (Okolie *et al*., 2015: Molecular and Cellular Probes 29(3):144-150; PDF). Charles served as the technical operator of the clinical trials of the first generation GeneXpert® MRSA/SA detection system (Cepheid, CA, USA) on blood culture samples from Nottingham hospitals.

- **January 2004 - September 2004: Safety and Hygiene training and work experience**

  Serving in the European Food Systems (Eurest, member of Compass Group, UK and Ireland located within the premises of Imperial Tobacco Nottingham), Charles sat and passed the Safety and Hygiene certificate examinations of the Institution of Occupational Safety and Health.

- **September 2002 - December 2003**

  Full-Time Study Leading To the Degree of Master of Science (MSc) in Molecular Medical Microbiology, School of Molecular Medical Sciences (formerly School of Clinical Laboratory Sciences), The University of Nottingham, UK. Charles Okolie's work focused on survival and multiplication of *H. pylori* wild type and Δ*clpP* mutant under normal and stress conditions. PCR, Western blot, and growth on kanamycin agar were used to study the effect of *clpP* gene replacement. The work contributed to a publication (Loughlin *et al*., 2009: Microbial Pathogenesis *46 (1),* 53-57; PDF). Main course modules studied include: Applied Molecular Microbiology; Bacterial Pathogenesis and Infections; Introduction to Medical Microbiology; Molecular and Microbiology Techniques; Prevention and Treatment of Infections; Research Methods; Science Technology and Business; Viral Pathogenesis and Infections; Research Project.

- **September 2000 - December 2001**

  Full-Time Study Leading To Fellow of the Institute of Medical Laboratory Science and Technology (renamed Medical Laboratory Science Council of Nigeria) in Virology.

Main research project was **'*Development of a New Inactivated Gumboro Virus Vaccine'*.** To proffer solution to the menace of avian infectious bursal disease (IBD), a poultry disease caused by (IBD) virus and named 'Gumboro' after the American town Gumboro in the county of Sussex, Delaware, where it was first reported. Under the supervision of Dr Anthony Chukwuedo, a killed IBD virus vaccine was developed using cell culture virus replication and neutralization techniques (CCVRNT) at the National Veterinary Research Institute (NVRI), Vom, Nigeria. Following challenge with a very velogenic strain, immunogenicity was assessed by agar gel immuno-precipitation technique (AGIPT) which revealed protective antibody response of approximately 100 units/ml on second challenge and over 1,000,000 units/ml on third challenge. This vaccine has remained unbeaten since its introduction in 2001.

- **January 1994 - August 2000:** Medical Laboratory Technologist in-charge, Success Clinical Laboratories, Kano. Technical head, responsible for diagnostic services using microbiological techniques. Served under pressure yet carefully maintaining high level of accuracy and precision, while satisfying numerous hospital and community clients.
- **September 1992 - September 1993:** National Youth Service Corps (NYSC), Kwara State College of Health Technology, Offa. Taught basic techniques to Medical Laboratory Technicians (MLTs) and Assistants (MLAs) towards National certification. This was adjudged great service to humanity by the State NYSC committee and rewarded with the NYSC award.
- **November 1987 - July 1992:** Full-Time Study Towards the Associate Diploma of the Institute of Medical Laboratory Technology (AIMLT) of Nigeria with Final Year Concentration in Bacteriology (Training Center: Federal School of Medical Laboratory Technology, Jos). Main research project was '***Antibiotic Susceptibility Patterns of Bacterial Isolates from Infected Wounds in Jos, Central Nigeria'*** under the supervision of Ms Grace Nneka Okolo and Dr Eugene Ikeh**.** Following bacteriological cultures, bacterial isolates from wound were characterized to species level. Antibiotic susceptibility testing (AST) was performed by agar dilution and the Kirby-Bauer disc diffusion techniques. Following growth on Mueller-Hinton agar, AST results were interpreted following Susceptible/Intermediate/Resistant (SIR) approach of the Clinical Laboratory Standards Institute (CLSI).

6. TEACHING DUTIES

- Charles has taught a wide range of courses in the broad areas of Biotechnology, Microbiology, Immunology, Virology and Molecular Biology to Undergraduate

students of Microbiology, Biotechnology, Nursing and Medical Laboratory Science at the State University of Medical and Applied Sciences, Elizade University, Landmark University, and the University of Jos. The list includes:

- ABB211: Introduction to Biotechnology
- ABB221: Introduction to Parasitology
- BCH211: Biomolecules I
- BLY211: Introductory Genetics
- MCB211: General Microbiology
- BCH224: Introductory Molecular Biology
- MCB312: Microbial Physiology
- BCH313: Chemistry and Metabolism of Amino Acids and Proteins
- BCH316: Chemistry and Metabolism of Nucleic Acids
- MCB318: Virology I
- MLI401: Immunology I
- MLI408: Immunology II
- MLM404: Bacteriology
- MCB405: Public Health Microbiology
- MCB412: Medical and Veterinary Microbiology
- MCB416: Microbiological Quality Control
- MLS 201: Introduction to Medical Laboratory Science
- MLS 303: Basic Medical Microbiology
- MLS 305: Basic Immunology
- MLS 307: Practical Exercise
- MLS 401: Clinical Laboratory Management, Functionality and Organization
- MLS 402: Biotechnology
- MLS 412: Professional Ethics in Medical Laboratory Science
- MLS 413: Bioethics, Research and Grant writing
- MLS 415: Fundamentals of Public Health
- MLS 507: Advanced Laboratory Techniques
- MLS 509: Animal Experimentation
- MLS 541: Systemic Bacteriology
- NSC 313: Medical Microbiology and Parasitology
- NSC 308: Pathology
- MCB415: Microbial Genetics and Molecular Biology
- MCB421: Pharmaceutical Microbiology and Antimicrobial Agents

- Charles has taught Postgraduate courses in Antimicrobial Chemotherapy, Microbial Genetics and Gene Technology specialisms at Landmark University and Afe Babalola University.
  - MCB814: Advanced Microbial Genetics and Genomics (MSc)
  - MCB816: Advanced Antimicrobial Agents and Chemotherapy (MSc)
  - MCB925: Advanced Pharmaceutical Microbiology (PhD)
  - MLS941: Gene Technology (PhD)

7. RESEARCH INTEREST AND EXPERTISE

- Vaccine research and development (whole agent and sub-unit vaccines)
- Molecular Diagnostics research and development (multiplex real-time PCR tests)
- Pathogenesis of infectious diseases using molecular, cellular, and whole animal models
- Microbiome Research
- Anti-microbial stewardship

8. TRANSFERABLE AND EMPLOYABLE RESEARCH SKILLS AND TECHNIQUES

- Use of bioinformatics tools including DNASTAR Lasergene, ARTEMIS®, and Scansite^{TM}
- Gene cloning, gene knock in and knock out
- DNA preparation for purification, isolation, and amplification
- Protein expression in Prokaryotic (*Escherichia coli*) systems
- Tagged Protein purification by chromatography (Ni^{++}-affinity, ion-exchange, & size exclusion)
- Recombinant DNA technology for Generation and establishment of microbial antigens/vaccines (whole pathogen and sub-units) using prokaryotic systems
- DNA and Protein Gel Electrophoresis (denaturing and self-developed native gel systems)
- Agar gel immuno-precipitation technique for antigen (proteins and viruses) diffusion
- Preparation and use of cell culture systems for antigen/protein/toxin/pathogen studies including propagation and killing/neutralization of pathogens (bacteria and viruses)
- Animal experimentation including whole animal and cellular models.

9. SCHOLARSHIP

- **Publications (all accessible online)**

1) Nwonuma CO, Nwatu VC, **Okolie CE**, Aljarba NH, Batiha GE (2022). Experimental validation and molecular docking to explore the active components of cannabis in

testicular function and sperm quality modulations in rats. *BMC Complementary Medicine and Therapies* 22, 227; https://doi.org/10.1186/s12906-022-03704-z

2) Ojo OA, **Okolie CE**, Alsharif KF, Batiha GE (2021). Deciphering the Interactions of Bioactive Compounds in Selected Traditional Medicinal Plants against Alzheimer's Diseases via Pharmacophore Modeling, Auto-QSAR, and Molecular Docking Approaches. *Molecules*, *26*(7), 1996; https://doi.org/10.3390/molecules26071996
3) Ojo OA, Ojo AB, **Okolie CE**, Atunwa B, Nwonuma CO, Alsharif KF, Batiha GE (2021). Elucidating the interactions of compounds identified from Aframomum melegueta seeds as promising candidates for the management of diabetes mellitus: A computational approach. Informatics in Medicine Unlocked, 26, 100720; https://doi.org/10.1016/j.imu.2021.100720
4) Ndako JA, Ojo SKS, **Okolie CE**, Olatinsu O, Dojumo VT (2021). Studies on the serological markers for hepatitis B virus infection among type 2 diabetic patients. J Clin Lab Anal. 2021;00:e23464 https://doi.org/10.1002/jcla.23464.
5) Ndako JA, Olisa JA, Ifeanyichukwu IC, Jegede SI, **Okolie CE**, Ojo SKS (2020). Evaluation of diagnostic assay of patients with enteric fever by the box-plot distribution method. New Microbes and New Infections 38, 100795. https://doi.org/10.1016/j.nmni.2020.100795.
6) Ndako JA, **Okolie CE**, Jegede SI (2020). Predictive evaluation of pediatric patients based on their typhoid fever status using linear discriminant model. Medical Hypotheses 144 (2020) 110264. https://doi.org/10.1016/j.mehy.2020.110264.
7) Nwozor A, **Okolie C**, Okidu O, Oshewolo S. The Looming Dangers of Explosion in Community Transmissions of COVID-19 in Nigeria. Annals of Global Health. 2020; 86(1): 95, 1–5. DOI: https://doi.org/10.5334/aogh.2990.
8) Olaniran A, Afolabi R, Abu H, Owolabi A, Iranloye YM, **Okolie CE**, Akpor O (2020). Lime potentials as biopreservative as alternative to chemical preservatives in pineapple, orange and watermelon juice blend. Food Research 4(6):1878-1884. DOI: https://doi.org/10.26656/fr.2017.4(6).057.
9) Olaniran A, Abu H, **Okolie C**, Akpor O (2020). Comparative assessment of storage stability of ginger-garlic and chemical preservation on fruit juice blends. Potravinarstvo Slovak Journal of Food Sciences 14:88-94 *DOI:* http://dx.doi.org/10.5219/1262.
10) **Okolie CE**, Essien UC. (2019). Optimizing Laboratory Diagnostic Services for Infectious Meningitis in the Meningitis Belt of sub-Saharan Africa. *ACS Infectious Diseases. DOI:* 10.1021/acsinfecdis.9b00340.
11) Ndako JA, Oranusi SU, Fajobi VO, **Okolie C**, Akinwumi J, Ohiobor GO. Incidence of Urinary Tract Infection in a Rural Community of SouthWest, Nigeria. Saudi Journal of Biomedical Research. DOI: http://dx.doi.org/10.36348/SJBR.2019.v04i09.002.

12) **Okolie C**, James R (2019). Four overlapping DNA fragments for sequence determination across Staphylococcus aureus Panton-Valentine leukocidin coding region. *F1000Research*; **8**:1002. DOI: 10.7490/f1000research.1116976.1.

13) Olaniran AF, **Okolie CE**, Abu HE (2019). Preservative Effect of Garlic-ginger, Sodium Benzoate and Ascorbic Acid in Unpasteurized Cashew Apple Juice. Asian Journal of Scientific Research; 12: 414-420. **DOI:** 10.3923/ajsr.2019.414.420.

14) **Okolie CE**, Mercy Ashibi, Mohammed Faruk, Dangude Jigo Yaro, Saad Aliyu Ahmed, Peter Akpulu, Ibrahim Iliya, Peter Ocheni Anaja, Izegbuwa Oghumwen Kuale, James Olowo Enemari, Aghemunu Idahota Lucky, John Idoko (2018). Exploratory Study of Special Stains for Enhancing Histological Diagnosis of Bone Marrow Disease in a Nigerian Teaching Hospital. Sikkim Manipal University Medical Journal;5(1):12-23. https://smu.edu.in.pdf.

15) **Okolie CE**, Tolulope Ayoola Ojo, Anne Adebukola Adeyanju, Charles Obiora Nwonuma, Emenike Onyebum Irokanulo, Stephen Olugbemiga Owa (2018). Protective Effects of Ethanolic Leaf Extract of *Annona senegalenesis* against Gentamicin-induced Nephrotoxicity in Rats. Sikkim Manipal University Medical Journal;5(1):88-105. https://smu.edu.in.pdf.

16) **Okolie CE** (2017). Real-Time PCR to Identify Staphylococci and Assay for Virulence from Blood. In: Bishop-Lilly KA, ed. Diagnostic Bacteriology. Methods in Molecular Biology: Springer Protocols, Heidelberg:183-207. DOI: 10.1007/978-1-4939-7037-7_12.

17) Shingdang J, Bot Y, Ojo O, Edeh O, Essien C, Bwende E, **Okolie C** and Ekwempu AI (2016). Serum Albumin/Globulin ratio in Tuberculosis and HIV Patients any Relationship? Mycobacterial Diseases 6:199. DOI: 10.4172/2161-1068.1000199

18) **Okolie CE**, Wooldridge KG, Turner DP, Cockayne A, James R (2015). Development of a new pentaplex real-time PCR assay for the identification of poly-microbial specimens containing *Staphylococcus aureus* and other staphylococci with simultaneous detection of staphylococcal virulence and methicillin resistance markers. *Mol Cell Probes* 29(3):144-150. 10.1016/j.mcp.2015.03.002

19) **Okolie CE**, Wooldridge KG, Turner DP, Cockayne A, James R (2015). Development of a heptaplex PCR assay for identification of Staphylococcus aureus and CoNS with simultaneous detection of virulence and antibiotic resistance genes. *BMC Microbiology*. 15:157. DOI: 10.1186/s12866-015-0490-9

20) **Okolie CE** and Richard James (2015). Optimization And Evaluation of Triplex Real-Time PCR Assay For Detection of Genes Encoding Staphylococcal Virulence and

Methicillin Resistance Using Two Different Multi-Channel Emission Instruments. Journal of Applied Life Sciences International, 2(4):145-151. PDF.

21) **Okolie CE** and Richard James (2015). Development of New Pentaplex PCR Assay For Differentiating Staphylococci From Other Bacteria With Simultaneous Detection of Staphylococcus aureus Genes Encoding Panton-Valentine Leukocidin And Methicillin Resistance. Journal of Advances in Biology and Biotechnology, 2(4): 250-259. PDF.

22) **Okolie CE** U. C. Essien and J. Idoko (2015). Genetic and phenotypic identification of vancomycin-resistant *Staphylococcus aureus* isolates from retail poultry carcasses in Omu-Aran, North-Central Nigeria. British Biotechnology Journal, 6(2):87-92. PDF.

23) U.C. Essien, C.C. Iheukwumere, G.I. Davou, Z. Sheyin, **Okolie CE**, F.R. Ede and A.I. Ekwempu (2015). Prevalence and Predictors of Asymptomatic Urinary Tract Infection among HIV Positive Patients in Jos, North Central Nigeria. *IJCMAS,* 4(9): 454-462. PDF.

24) **Okolie CE**, Alan Cockayne, Karl Wooldridge, Richard James (2014). Development and Validation of a New Diagnostic PCR Assay for *vanA* Gene Encoding Vancomycin Resistance in *Staphylococcus aureus*. International Journal of Applied Microbiology and Biotechnology Research, 2:1-10. PDF.

25) **Okolie CE**, Cockayne A, Penfold C, James R (2013). Engineering of the LukS-PV and LukF-PV subunits of Staphylococcus aureus Panton-Valentine leukocidin for Diagnostic and Therapeutic Applications. *BMC Biotechnol*.;13(1):103. DOI: 10.1186/1472-6750-13-103

26) Emmanuel Nna, Jonathan Madukwe, Ejike Egbujo, Chris Obiorah, **Okolie CE**, Godwin Echejoh, Amina Yahaya, James Adisa, and Ijeoma Uzoma (2013). Gene Expression of Aurora Kinases in Prostate Cancer and Nodular Hyperplasia Tissues. Med Princ Pract; 22(2):138-43. DOI: 10.1159/000342679

27) O. B. Akpor, T. D. Olaolu and **Okolie CE** (2013). The Effect of Temperature on Nitrate and Phosphate Uptake from Synthetic Wastewater by Selected Bacteria Species. British Microbiology Research Journal; 4(3)328-342. PDF.

28) Adepoju TF, Layokun SK, Olawale. O, **Okolie CE** (2013) Biotransformation of Benzaldehyde To L-Phenylacetylcarbinol By Free Cells of Yeast (*Saccharomyces Cerevisae*), Effects of B-Cyclodextrin and Its Optimization. International Journal of Engineering Science Invention; 2(11): 29-37. PDF

29) Mary-Jane N. Ofojekwu, Ogbonnaya U. Nnanna, **Okolie CE**, Lolade A. Odewumi, Ikechukwu O. Isiguzoro, Moses. D. Lugos (2013) Hemoglobin and Serum Iron Concentrations in Menstruating Nulliparous Women in Jos, Nigeria. Lab Med*:* 44:121-124. DOI: 10.1309/LMM7A0F0QBXEYSSI

30) Michael F. Loughlin, Victoria Arandhara, **Okolie CE,** Timothy G. Aldsworth and Peter J. Jenks (2009). *Helicobacter pylori* mutants defective in the *clpP* ATP-dependant protease and the chaperone *clpA* display reduced macrophage and murine survival. Microbial Pathogenesis 46 (1), 53-57. DOI: 10.1016/j.micpath.2008.10.004

- **Scholarly citations**
  - PhD Thesis at British Library: http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.517830
  - Researchgate : https://www.researchgate.net/profile/Charles_Okolie/publications
  - Google scholar: https://scholar.google.com/citations?user=venHdPEAAAAJ&hl=en
  - ORCID iD 0000-0001-5565-3250 (https://orcid.org/0000-0001-5565-3250)
  - Scopus: https://www.scopus.com/authid/detail.uri?authorId=25645243600
  - Mendeley:https://www.mendeley.com/profiles/charles-okolie3/?dgcid=Mendeley_Desktop_Profile
- **Editorial Board membership**
  - Austin Clinical Microbiology, Austin Publishing Group, New Jersey, USA.
  - EC Microbiology, UK.
- **Selection of Manuscript Review Service**
  - Applied and Environmental Microbiology
  - BMC Infectious Diseases
  - Canadian Journal of Microbiology
  - African Journal of Biotechnology
  - African Advances in Microbiology Research
  - Cancer Management and Research
  - Gene
  - Journal of Applied Microbiology
  - Journal of Medical Microbiology
  - Journal of Microbial Pathophysiology & Pathogenesis.
- **Selection of attendance/presentations at workshops/conferences**
  - **Okolie CE (2022).** Need for investment into in-country research and development of biomedical tools (diagnostics and vaccines) for use in Africa's Public Health space. Faculty of Applied Natural Sciences First International Conference 2022, Enugu State University of Science and Technology, Agbani, Enugu State, Nigeria. **Role:** Keynote address
  - **Okolie CE + International Organizers (2019).** Workshop Teaching of how PCR works. West African Center for Cell and Molecular Biology of Infectious Pathogens (WACCBIP), International Workshop on the Molecular Cell Biology of Common Pathogens, 2019

January 14-25. Department of Biochemistry, Cell and Molecular Biology, University of Ghana, Legon, Accra, Ghana. **Role:** Demonstrator

- Okolie CE, **Olumakaiye RT**, Mahmud T, Odetoyin B (2018). Molecular Diversity of Extended Spectrum ß-lactamase genes among Clinical Specimens in a Tertiary Health Institution in Nigeria. Abstract Number PS-1.4-100. African Society for Laboratory Medicine 4th International Conference, 2018 December 10-13, Transcorp Hilton Hotel, Abuja, Nigeria. **Role:** Supervisor of Presenter Mr. Richard T. Olumakaiye
- **Okolie CE**, Wooldridge KG, Turner DP, Cockayne A, James R (2015). Leukocytolysis associated with Panton-Valentine leukocidin is induced via phosphorylative activation by LukF-PV and is prevented by phosphatasing and by monoclonal antibodies. Conference: European Molecular Biology Organization (EMBO) meeting 2015 (September, 2015). Venue: Birmingham, United Kingdom. Project: Molecular pathogenesis of Staphylococcus aureus. DOI: 10.13140/RG.2.1.3412.3608. **Role:** Poster presenter
- Molecular Approaches to Clinical Microbiology in Africa. Welcome Trust Advanced Courses. University of Capetown, South Africa, 27 September – 02 October, 2014. **Role:** Trained under experts led by Professor Martin Maiden from Oxford University, UK
- American Society for Clinical Pathology (ASCP) curriculum development workshop for academic staff of the Department of Medical Laboratory Science, University of Jos. Venue: Chelsea Hotel Abuja, March 25-30, 2011. **Role:** Trained under ASCP experts led by Professor Ellen, University of South Carolina, USA.
- **Okolie CE**. New Heptaplex PCR Assay for Detection of *Staphylococcus aureus* Virulence and Antibiotic Resistance Genes. Oral presentation at the 38th Annual Conference of the Nigerian Society for Microbiology, University of Lagos, 1-5th September, 2015
- **Okolie CE**. Use of Bioinformatics Tools to predict Molecular Motifs unique for *Staphylococcus aureus* Coagulase Activity. Oral presentation at the 33rd Annual Conference of the Nigerian Society for Biochemistry and Molecular Biology, Ilorin 2014. University of Ilorin, Nigeria, 11-14 November, 2014
- Nigerian Institute of Medical Research (NIMR) National Conference. NIMR premises, Edmonton Crescent, Yaba, Lagos State, Nigeria, 11-15 November, 2013.

- **Own Thesis & Dissertation**
  - Okolie CE (2009). Development of Diagnostic and Therapeutic Tools for *Staphylococcus aureus* infections. Doctoral thesis, The University of Nottingham, UK. Held at the British Library E-Theses Online Service (http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.517830)

- Okolie CE (2003). Regulatory roles of *clpP* gene in Helicobacter pylori. Submitted to the School of Molecular Medical Sciences, the University of Nottingham in partial fulfillment for the award of the degree of Master of Science (MSc) in Molecular Medical Microbiology
- Okolie CE (2001). Formulation and Evaluation of Inactivated Gumboro Virus Vaccine. Submitted to the Institute of Medical Laboratory Technology of Nigeria in partial fulfillment for the award of Fellowship of the Institute in Virology
- Okolie, CE (1992). Antibiotic Susceptibility Patterns of Bacterial Isolates from Infected Wounds in Jos. Submitted to the Institute of Medical Laboratory Technology of Nigeria in partial fulfillment for the award of Associate Diploma of the Institute with specialization in Bacteriology.

- **Supervision of Postgraduate Student Research Projects**
  - Iosifidou, Eleni (2007). ***MSc Dissertation.*** Detection and sequencing of the *mecA* gene encoding Staphylococcal meticilin resistance. **Principal supervisor:** Professor Richard James, School of Molecular Medical Sciences, The University of Nottingham, UK. Completed and awarded
  - Ebie, Michael (2015). ***PhD Thesis.*** Application of the American Type Culture Mycoplasma Polymerase Chain Reaction assay for the detection of Mycoplasma in couples reporting with infertility in Nigeria. **Principal supervisor:** Professor Eugene Ikeh, Department of Medical Microbiology and Parasitology, University of Jos, Nigeria. Completed and awarded
  - Philip Chebu (2018). **PhD in good progress.** Whole genome sequencing of multi-drug resistant Mycobacterium tuberculosis associated with anti-retroviral therapy resistant HIV in Abuja, Nigeria. **Principal supervisor:** Charles Okolie
  - Ashonibare Victory Jesutoyosi (2018). **MSc in good progress.** Genotypic and phenotypic characterization of multi-drug resistant aero-tolerant bacteria shared between animals and farm workers in Omu-Aran. **Principal supervisor:** Charles Okolie (Status: Student got married and migrated to Germany)
- **Selection of supervision of undergraduate project (completed and awarded)**
  - Michael, Joy Ene (2019). Isolation and Characterization of Gram Negative Bacteria from Waste bins in Landmark University Campus. Student graduated with second class currently serves as a scientific officer at the Nigeria Centre for Disease Control and Prevention (NCDC), Abuja, Nigeria
  - Egbanubi, Oluwafisayomi Elizabeth (2019). Isolation and Characterization of Medically Important Fungi from Waste bins in Landmark University Campus.
  - Olumakaiye, Richard Tumbamise (2018). Phenotypic and Molecular Characterization of Extended Spectrum Beta Lactamase (ESBL) Producing Clinical Isolates from a Referral Hospital in Ilorin, Kwara State, Nigeria. Student is currently a PhD student in the UK

- Amadi, Eberechukwu Austin (2018). Isolation and Characterization of ESBL-producing Enterobacteria from Livestock and Farmers in Omu-Aran, Kwara State, Nigeria. Student is currently helping with family Oil and Gas business in Port Harcourt, Nigeria
- Luka, Nvou Esther (2018). Isolation and Molecular Characterization of ESBL-producing Enterobacteria in Raw Vegetables in Omu-Aran, Kwara State, Nigeria. Student graduated with second class, got married and is currently living with family in Abeokuta, Nigeria
- Afolabi, Ruth (2018). Application and acceptability of Garlic-ginger as bio-preservative in cashew and pineapple juice blends. Student graduated with second class and is currently helping with family business in Ilorin, Nigeria
- Abu, Ene (2018). Application and acceptability of Garlic-ginger as bio-preservative in pineapple and watermelon juice blends. Student is currently helping with family business in Kaduna, Nigeria
- Oni, Tayo John (2017). Effect of poultry droppings on bacterial flora of soil in Landmark University. BSc Microbiology. Student graduated with third class and is currently helping with family business in Ado-Ekiti, Nigeria
- Akosile, Toluwanimi Atinuke (2017). Study of Fungal Population and Physicochemical Parameters of Soil and Manure Samples. BSc Microbiology. Student graduated with third class and is currently helping with family business in Ado-Ekiti
- Omotayo, Omolade Oghenekewe (2016). Assessment of Cellulase Production by Fungi and Bacteria Isolated From Decaying Wood. BSc Microbiology. Student graduated with second class and is currently helping with family business in Lagos
- Aribisala, Racheal Olubunmi (2016). Microbiomic and Metabolic Changes Associated with Processing of Cassava for Garri Production. BSc Microbiology. Student graduated, did MSc at the University of Ibadan, Nigeria
- Moritiwon, Oluwaseyitan (2016). Microbiomic and Metabolic changes associated with natural fermentation of Sweet Potatoes. BSc Microbiology. Student graduated with second class, got married and migrated to Canada where she is currently practicing Journalism
- Awopetu, Oluwamodupe (2016). Fecal Microbiota of Cattle Slaughtered in Omu-Aran. BSc Microbiology. Student graduated with second class and is currently working for the Society for Family Health (an NGO) in Abuja, Nigeria
- Ukpabi, Chiamaka (2016). Landmark University Students Fecal Microbiota. BSc Microbiology. Student graduated with second class and is currently studying Nursing in the UK
- Nwafor, Onyekachi Samuel (2015). Timed Microbiomic and Metabolomic Changes Associated with Storage of Unpasteurized Cow Milk. BSc Microbiology. Student is currently trading on computers and electrical appliances in Lagos, Nigeria
- Agunbiade, Esther Mosunmola (2015). Timed Microbiomic and Metabolomic Changes Associated with Storage of Unpasteurized Cow Milk. BSc Microbiology. Student graduated with second class and is currently running a beauty shop in Lagos, Nigeria

- Ogbumuo, Precious (2015). Metagenome of Bacterial 16S rRNA gene of Resident Bacteria in a Termitarium in Omu-Aran, Kwara State, Nigeria. BSc Biochemistry. Student graduated with second class and is currently pursuing her PhD in the USA
- Umogbai, Charles (2015). Metagenome of Bacterial 16S rRNA gene of Cow Hide Following Varied Treatments and Fermentation. BSc Biochemistry. Student graduated with second class and is currently helping with family business in Abuja, Nigeria
- Ilori, Bolutife Abiodun (2015). Oral Microbiome of Cows at Slaughter in Omu-Aran, Kwara State, Nigeria. BSc Microbiology. Student graduated with second class and is currently pursuing her Medical degree in the UK
- Okafor, Angela Iyonamwan (2015). Comparative Microbiomics of Crude Petroleum Samples from Different Locations in Nigeria's Niger Delta Region. BSc Microbiology. Student graduated with second class and is currently helping mom in beauty shop in Lagos, Nigeria
- Adeshina, Gbenga David (2015). Timed Microbiomic and Metabolomic Changes Associated with the Fermentation of Sorghum. BSc Biochemistry
- Bodunde, Bukola (2015). Timed Microbiomic and Metabolomic Changes Associated with the Fermentation of Sorghum. BSc Biochemistry
- Ojo, Tolulope Ayoola (2014). Prevention of Gentamycin Induced Nephrotoxicity in Wistar Rats Using Ethanolic Leaf Extract of *Annona senegalensis*. BSc Biochemistry. Student graduated with first class and is currently pursuing her PhD in Canada
- Ebofin, Tolulope Ibukun (2014). Effect of fermentation on Phytochemical and Antioxidant Contents of *Citrullus colocynthis*. BSc Biochemistry. Student graduated with second class and is currently running a massive hair dressing business in Lagos, Nigeria
- Oriaku, Otito Marvellous (2014). Antibacterial Activities of Four Plant Extracts on Selected Clinical Bacterial and Fungal Isolates in Omu-Aran, Kwara State, Nigeria. BSc Microbiology. Student graduated with second class and is currently pursuing her PhD at the University of Jos, Jos, Plateau State, Nigeria
- Okolomike, Uzoma Favour (2014). Efficacy of Disinfectants Routinely Used in Landmark University Hospital and Poultry Farms. BSc Microbiology. Student graduated with a second class, did MSc in Medical Microbiology at Nsukka (UNN) and is currently working for her family in real estate in Enugu, Nigeria.

10. COLLABORATIONS/LINKAGES

- Professor Gordon A. Awandare, Director, West African Centre for Cell Biology of Infectious Pathogens (WACCBIP), Currently serving as Deputy Vice Chancellor, Academic and Students Affairs, University of Ghana, Legon, Accra, Ghana.
- Dr Theophilus 'Tokunbo' Ike Emeto, James Cook University, Queensland, Australia

- Dr Francisca Nwaokorie, Nigerian Institute of Medical Research, Yaba, Lagos State, Nigeria.

11. MEMBERSHIP OF UNIVERSITY SENATE (CENTRAL), FACULTY AND DEPARTMENTAL COMMITTEES

- Chairman, Committee on Establishment of Career Service Centre, State University of Medical and Applied Sciences (SUMAS), Igbo-Eno, Enugu State
- Member, First Founder's Day Planning Committee, State University of Medical and Applied Sciences (SUMAS), Igbo-Eno, Enugu State
- Memebr, Committee on Development of Conditions of service for Academic Staff
- Member, Library Development Committee, State University of Medical and Applied Sciences (SUMAS), Igbo-Eno, Enugu State
- Member, Committee on Resource Verification, State University of Medical and Applied Sciences (SUMAS), Igbo-Eno, Enugu State
- Memebr, Committee on Investigation of Examination Malpractice, State University of Medical and Applied Sciences (SUMAS), Igbo-Eno, Enugu State
- Member, Research and Development Committee, Faculty of Basic and Applied Sciences, Elizade University 2022/2023 academic session
- Chairman, Quality Assurance Committee, Department of Medical Laboratory Science, Elizade University 2022/2023 academic session
- Chairman, Research Committee, Department of Medical Laboratory Science, Elizade University 2022/2023 academic session
- Member, task force on NUC and MLSCN Accreditation for the Medical Laboratory Science Programme, Faculty of Basic and Applied Sciences, Elizade University 2022/2023 academic session
- Member, Curriculum Committee, Landmark University 2015/16 and 2016/17 academic sessions
- Member, Ceremonies Committee, Landmark University 2015/16 and 2016/17 academic sessions
- Member, Committee on New Programs (Public Health, Biotechnology, and Molecular Biology), Department of Biological Sciences, Landmark University 2016/17 academic session
- Representative of Biological Sciences Department in the Postgraduate Committee, Faculty of Natural and Applied Sciences, Landmark University

- Secretary, Committee for the Centre for Advanced Research and Developement, Landmark University 2015/16 academic session.
- Member, Farm Practice Management Committee, Landmark University, 2013/14 session.
- Chairman, Landmark University College of Science and Engineering Students' week organizing committee 2013/14 and 2014/15 academic sessions.
- Member, Community Peace and Security Committee, Kabong Village, Jos North Local Government, Jos Metropolis, Plateau State, February 2011 – August 2012.
- Representative of Faculty of Medical Sciences at the University of Jos Staff Accomodation Committee, November 2010 – August 2012.
- Member, Committee of Resident Tutors, University of Nottingham, 2006/07 session.

12. SELECTION OF VOLUNTARY SERVICES RENDERED TO COMMUNITY

- Chairman, Journal Board and Annual Scientific Conference Organizing Committee, AMLSN, Enugu State, Nigeria 2024-2025
- Chairman Scientific Sub-Committee, Association of Medical Laboratory Scientists of Nigeria (AMLSN), University of Jos Chapter (2010-2012).
- Resident Tutor (looking after students under the leadership of Hall Warden Professor MacDonald), Nightingale Hall, University of Nottingham, 2006/07 session.
- Volunteer, Healthcare of the Elderly, Queen's Medical Centre, Nottingham, UK. 2003.

13. SCHOLARSHIPS/FELLOWSHIPS, AWARDS, GRANTS AND HONOURS

- Hosting of Carnegie African Diaspora Fellowship Program (CADFP) at the State University of Medical and Applied Sciences, starting 01 June 2025
- The British Council and The University of Nottingham Developing Solutions Chevening Scholarship for Master of Science in Molecular Medical Microbiology (School of Molecular Medical Sciences, The University of Nottingham, 2002/03 academic session)
- National Youth Service Corps (NYSC, Kwara State 1992/93) award for my excellent service to College of Health Technology, Offa, Kwara State, which resulted in excellent (100%) students success at the final year National examinations of Medical Laboratory Technician course.

14. MEMBERSHIP OF ACADEMIC AND PROFESSIONAL SOCIETIES

- Chevening Alumni Association of Nigeria (CAAN)
- University of Nottingham Alumni Association

- International Society for Infectious Disease (ISID)
- Association of Medical Laboratory Scientists of Nigeria (AMLSN)
- Nigerian Society for Microbiology (NSM)
- Nigerian Society of Biochemistry and Molecular Biology (NSBMB)

15. REFEREES

Name, Address and Telephone Numbers of three (3) referees:

1. Professor James Adisa (PhD, FMLSCN), Department of Medical Laboratory Science, University of Jos, Jos, Plateau State. Mobile: 0803 370 8153; Email: adisawuraola@yahoo.com

2. Professor Emenike Irokanulo (PhD, FMLSCN), Former Head, Department of Microbiology, College of Pure and Applied Sciences, Landmark University, Omu-Aran, Kwara State. Mobile: 0803 393 6427; E-mail: irokanulo.emenike@lmu.edu.ng

3. Professor Jones S. O. Adeniyi (PhD, FNSE), Former Dean, College of Science and Engineering, Landmark University, Omu-Aran, Kwara State, Nigeria. Mobile: +234(0)803 378 7394; E-mail: adeniyi.jones@lmu.edu.ng