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**Department of Pathology**  
**Stanford University, California, USA**  
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**Education:**

➤ **Michigan State University, East Lansing, Michigan**

**Ph.D. in Microbiology and Molecular Genetics (2019 – September 2024)**

*Dissertation Title: Chemical genetics of new nitro-containing compounds that inhibit the growth of Mycobacterium tuberculosis and M. abscessus*

*Research Mentor: Robert B. Abramovitch, Ph.D.*

➤ **University of Nigeria, Nsukka (UNN), Nigeria**

**Bachelor of Science (First Class Honors) in Microbiology (2012 – 2016)**

*Thesis Title: Crosslinked enzyme immobilization of raw mango starch-degrading amylase for improved stability.*

*Research Mentor: Tochukwu N. Nwagu, Ph.D.*

**Research/Work Experience:**

- **Postdoctoral Research Associate**, Department of Pathology, Stanford University, California (August 2024 – present)
- **Graduate Assistant**, Microbiology, Genetics, and Immunology, Michigan State University, East Lansing (2019 – 2024)
- **Graduate Teaching Assistant**, Department of Biology, Wayne State University, Detroit (2018 – 2019)
- **Research Assistant**, Nanodrug Delivery Research Team, Faculty of Pharmaceutical Sciences, UNN (2016 – 2018)
- **Research Intern**, South-East Zonal Biotechnology Centre, Nsukka, Nigeria (2015)
- **High School Biology Tutor**, Child of Destiny International Academy, Aba, Nigeria (2013 – 2014)

**Laboratory Skills and Training:**

- **Chemical biology:** Mechanism-of-action studies of antimicrobial molecules; forward genetic screening; chemical probing
- **Biochemistry:** Protein expression and purification; radioactivity-based enzyme assays; enzyme immobilization
- **Pharmacology:** Dose-response relationships; *in vitro* drug-drug interactions; isothermal titration calorimetry
- **Bioinformatics:** Whole genome and bulk RNA sequence analysis; Molecular docking; phylogenetic tree
- **Virology:** Transfection; mammalian cell culture maintenance and passaging; enzyme-linked immunosorbent assay
- **Others:** Biosafety Level 3 (BSL3) Lab Operations; qPCR; SDS-PAGE and Western blotting

**Journal Publications and Book Chapters ([Google Scholar Citations = 1032; h-index = 7](#)):**

- **Eke IE**, Williams JT, Haiderer ER, *et al.* Discovery and characterization of antimycobacterial nitro-containing compounds with distinct mechanisms of action and *in vivo* efficacy. *Antimicrobial Agents and Chemotherapy* 2023; 67(9): e00474-23. Times Cited: 3
- Onwosi CO, Ozoegwu CG, Nwagu TN, Nwobodo TN, **Eke IE**, Igbokwe VC, *et al.* Cattle manure as a sustainable bioenergy source: prospects and environmental impacts of its utilization as a major feedstock in Nigeria. *Bioresource Technology Reports* 2022; 19:101151. Times Cited: 18
- Uhal BD, Connolly D, Darbeheshti F, Zheng YH, **Eke IE**, Chung Y, Samavati L. Host and pathogen-specific drug targets in COVID-19. In Book: *COVID-19: from bench to bedside* (Lundstrom K, Barh D, Eds). CRC Press, 2022
- **Eke IE**, Nweze EI. Tinea capitis in school children: current status. In Book: *Dermatophytes and Dermatophytoses* (Bouchara JP, Nenoff P, Gupta AK, Chaturvedi V, Eds). Springer International Publishing, 2021. Times Cited: 1
- Onwosi CO, **Eke IE**, Igbokwe VC, *et al.* Towards effective management of digester dysfunction during anaerobic treatment processes. *Renewable and Sustainable Energy Reviews* 2019; 116:109424. Times Cited: 25
- Onwosi CO, Odimba JN, Igbokwe VC, Nduka FO, Nwagu TN, Aneke CJ, **Eke IE**. Principal component analysis reveals microbial biomass carbon as an effective bioindicator of health status of petroleum-polluted agricultural soil. *Environmental Technology* 2019; 41(24): 3178-3190. Times Cited: 15

- Onyedikachi AP, Nweze EI, **Eke I**. Prevalence, biofilm formation and antimicrobial susceptibility testing of bacterial and fungal etiological agents associated with external ocular infections in Nigeria. *Asian Journal of Biological Sciences* 2019; 15:677-681. Times Cited: 2
- Eneh C, Nweze EI, **Eke I**. Incidence and antimicrobial susceptibility of *Listeria monocytogenes* isolated from different food sources in Enugu, Nigeria. *Asian Journal of Biological Sciences* 2019; 12(4):671-676. Times Cited: 2
- Nweze EI, **Eke IE**. Dermatophytes and dermatophytosis in eastern and southern parts of Africa. *Medical Mycology* 2018; 56(1):13-28. Times Cited: 112
- Nweze JA, **Eke IE**, Nweze EI. HIV and AIDS in sub-Saharan Africa: current status, challenges and prospects. *Asian Journal of Tropical Disease* 2017; 7(4):239-256. Times Cited: 73
- Onwosi CO, Igbokwe VC, Odimba JN, **Eke IE**, Nwankwoala MO, Iroh IN, Ezeogu LI. Composting technology in waste stabilization: on the methods, challenges and future prospects. *Journal of Environmental Management* 2017; 190:140-157. Times Cited: 728
- Attama AA, Agbo IS, **Eke IE**, Onigbo EB, Ogbonna JC. Bacteriophage: clinical applications. In Book: *Antimicrobial Research: Novel Bioknowledge and Educational Programs* (Méndez-Vilas A, Ed). Formatex Research Center, Spain 2017. Times Cited: 4
- Nweze IE, **Eke IE**. Dermatophytosis in northern Africa. *Mycoses* 2016; 59(3):137-144. Times Cited: 49

#### **Patents and Patent Applications:**

- Abramovitch RB, Ellsworth E, **Eke IE**, Williams JT. Therapeutic compounds and uses thereof (Nitro-containing compounds). *Provisional patent application filed, 2023.*

#### **Conference Presentations:**

- **Eke IE**, Abramovitch RB. Characterization of new nitro-containing compounds that kill *Mycobacterium tuberculosis*. MSU's Council of Graduate Students Academic Conference 2024 (**3<sup>rd</sup> Place for Best Oral Presentation**)
- **Eke IE**, Abramovitch RB. Discovery of new nitro-containing compounds that kill *Mycobacterium tuberculosis*. Michigan Branch of the American Society for Microbiology Spring 2024 Meeting at University of Michigan, Ann-Arbor (**Oral**)
- **Eke IE**, Williams JT, Haiderer E, *et al.* Mechanistic insights into the antimycobacterial activities of new nitro-containing compounds. Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS), Phoenix, 2023 (**Oral**)
- **Eke IE**, Abramovitch RB. Characterization of a novel scaffold that is active against *Mycobacterium abscessus*. Mid-West Microbial Pathogenesis Conference at Northwestern University, Chicago; 2023 (**Poster**)
- **Eke IE**, Williams JT, Abramovitch RB. Characterizing new nitro-containing compounds that kill *Mycobacterium tuberculosis*. Michigan Branch of the American Society for Microbiology Spring 2023 Meeting at Oakland University, Oakland (**Best Graduate Student Poster Award**)
- **Eke IE**, Williams JT, Abramovitch RB. Characterizing new nitro-containing compounds that kill *Mycobacterium tuberculosis*. Mid-West Microbial Pathogenesis Conference at the University of Wisconsin, Madison; 2022 (**Poster**)
- **Eke IE**, Williams JT, Abramovitch R. HC2210: an antitubercular prodrug that depends on cofactor F<sub>420</sub> machinery. Integrative Pharmacological Sciences Training Program (IPSTP) Retreat, Graduate Hotel, East Lansing; 2022 (**Poster**)

#### **Select Fellowships and Awards:**

- **Dissertation Completion Fellowship**, The Graduate School, Michigan State University (2024)
- **Research Enhancement Award**, The Graduate School, Michigan State University (2023)
- **Philipp and Vera Gerhardt Travel Award**, Microbiology and Molecular Genetics, Michigan State University (2020, 2023)
- **Integrative Pharmacological Sciences Training Program (IPSTP) Fellowship**, Michigan State University (2021-2023)
- **Rudolph Huge Scholarship Award**, Microbiology and Molecular Genetics, Michigan State University (2022)
- **Early Start Summer Fellowship**, Biomolecular Sciences Gateway, Michigan State University (2019)
- **Opportunity Fund Program** offered by EducationUSA Abuja, United States of America Embassy, Nigeria (2017-2018)
- **Reward Nigeria Award** presented by Culbeat Foundation, as the overall best-graduating student of the UNN (2017)
- **University Valedictorian**, University of Nigeria Graduating Class of 2015/2016 Academic Session

- **Indira Gandhi Memorial 1<sup>st</sup> Prize** for the Best Graduating Student of the University of Nigeria (2017)
- **Faculty Prize** for the Best Graduating Student in the Faculty of Biological Sciences, University of Nigeria (2017)
- **Departmental Prize** for the Best Graduating Student of the Department of Microbiology, University of Nigeria (2017)

**Leadership Positions and Community Service:**

- **Chief Organizer and Co-Chair**, the 5<sup>th</sup> Annual African Graduate Students Association (AGSA-MSU) Conference held at the International Center, Michigan State University (November 3<sup>rd</sup>, 2023)
- **President**, African Graduate Students Association (AGSA), Michigan State University (2022 – 2024)
- **Student Representative**, African Studies Center Advisory Committee, Michigan State University (2023 – 2024)
- **Student Co-Representative**, Microbiology and Molecular Genetics Seminar Planning Committee (2022 – 2023).
- **Vice-President**, Kongamano Student Group, Michigan State University (2021 – 2022)

**Membership in Professional Societies:**

- American Society for Microbiology (2020 – present)
- American Society for Virology (2020 – 2021)
- American Society for Biochemistry and Molecular Biology (2023)
- American Association for the Advancement of Science (2023)