

Dr. CHIKA E.P. EJIKEUGWU, PhD

Environmental Antimicrobial Resistance (eAMR) Research Group, Department of Applied Microbial Ecology (AME),
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<https://www.linkedin.com/in/chika-ejikeugwu/?originalSubdomain=ng>

1. Education

- 2013-2017 **Ph.D., Pharmaceutical Microbiology & Biotechnology, Nnamdi Azikiwe University, Nigeria**
Dissertation: Characterization of Metallo- β -Lactamase and AmpC Genes from Environmental Isolates of *Escherichia coli*, *Klebsiella* species and *Pseudomonas aeruginosa*
Dissertation Advisors: Prof. Charles Esimone, PhD, Prof. Michael Adikwu, PhD, Prof. Iroha I.R, PhD.
- 2010-2012 **M.Sc., Pharmaceutical Microbiology & Biotechnology, Nnamdi Azikiwe University, Nigeria**
Thesis: Detection and Antimicrobial Studies on Some Gram-Negative Bacteria Producing Extended Spectrum β -Lactamases and Metallo- β -Lactamases from a Tertiary Hospital in Enugu State
Thesis Advisors: Prof. Charles Esimone, PhD, Prof. Michael Adikwu, PhD.
- 2005-2008 **B.Sc., Applied Microbiology (Second Class Upper Division), Ebonyi State University, Nigeria**
Thesis title: Prevalence of Extended Spectrum Beta – Lactamase (ESBL)- Producing *Escherichia coli* from Two Tertiary Hospitals in Enugu State, Nigeria
Thesis Advisor: Professor Iroha Ifeanyichukwu, PhD.

2. Professional Experience / Employment

- 2023-present **Helmholtz Centre for Environmental Research (UFZ), Leipzig, Germany**
Department of Applied Microbial Ecology (AME)
Research Fellow
- 10/2024-01/2025 **Helmholtz Centre for Environmental Research (UFZ), Leipzig, Germany**
Department of Applied Microbial Ecology (AME)
Research Assistant (Working Contract: E13 TVöD)
- 2021-2023 **Enugu State University of Science & Technology (ESUT), Enugu, Nigeria**
Department of Pharmaceutical Microbiology & Biotechnology
Senior Lecturer
- 2019-2021 **Coal City University (CCU), Enugu, Nigeria**
Department of Microbiology
Visiting Senior Lecturer
- 2021 **Federal Institute for Materials Research and Testing (BAM), Berlin, Germany**
Division of Biodeterioration and Reference Organisms
Postdoctoral Fellow
- 2021 **Federal University of Health Sciences, Uburu, Nigeria**
Department of Microbiology & Parasitology
Part-time (Senior Lecturer)
- 2017-2020 **Ebonyi State University (EBSU), Abakaliki, Nigeria**
Department of Applied Microbiology
Lecturer
- 2018 **Kyoto University, Kyoto, Japan**
Center for the Evolutionary Origins of Human Behavior
Postdoctoral Fellow
- 2014-2016 **Ebonyi State University (EBSU), Abakaliki, Nigeria**
Department of Applied Microbiology
Assistant Lecturer
- 2012-2013 **Konigin Des Friedens College (KFC), Enugu, Nigeria**
Vice Principal (Academics) & Biology Teacher
- 2009-2010 **Government Secondary School (G.S.S.), Jagindi-Tasha, Kaduna, Nigeria**
Biology Teacher (National Youth Service Corps, NYSC)

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3. Academic Awards and Achievements

1. National Institute of Health (NIH) Grant (\$25,000)	2024
2. Alexander von Humboldt-Stiftung/Foundation (AvH) Research Fellowship, Germany (€166,000)	2023
3. COMPASS Mentoring Program Grant, Germany (€5,000.00)	2023
4. Travel Grant to Science and Technology in Society <i>forum</i> (STS <i>forum</i>), Kyoto, Japan (¥393,000)	2023
5. Rising Star Postdoctoral Fellowship, Freie Universität Berlin, Berlin, Germany (declined)	2023
6. Hamburg Institute for Advanced Study (HIAS) Fellowship, Hamburg, Germany (declined)	2023
7. The World Academy of Sciences (TWAS) Young Affiliateship Award	2023
8. Young Investigator Award on Antimicrobial Resistance (AMR), Institute Mérieux, France (€10,000)	2021
9. DAAD Postdoctoral Fellowship, BAM Institute, Berlin, Germany (€10,000)	2021
10. Elected Affiliate Member of the African Academy of Sciences (AAS)	2021
11. Speakers Fund Scholarship from Institut de Recherche pour le Développement, France	2021
12. DAAD Postdoctoral Fellowship, Germany [<u>declined due to COVID-19</u>]	2020
13. National Researchers Prize in Microbiology (₦50,000)	2020
14. Elected Member of the Global Young Academy (GYA), Germany	2020
15. Elected Fellow of the Africa Science Leadership Programme	2020
16. Travel Grant from Tertiary Education Trust Fund (TETFund), Nigeria to ASM Meeting in USA (\$1,500)	2019
17. Travel Grant from Association of Commonwealth Universities to FEMS Meeting in Scotland (£2,000)	2019
18. Travel Grant from Bill & Melinda Gates Foundation to Keystone Symposia in Canada (\$5,000)	2019
19. Postdoctoral Fellowship, Kyoto University, Kyoto, Japan (¥1,640,000)	2018
20. Institutional Based Research Grant for Early Career Researchers from TETFund, Nigeria (₦2,000,000)	2018
21. Millennium Development Goals (MDGs) Award of Excellence, Nigeria	2010

4. Funded Research (Grant) Projects

2023-present	Helmholtz Centre for Environmental Research (UFZ), Leipzig, Germany; (€166,000), PI <u>Title</u> : Impact of antibiotic mixtures on soil microbiomes in agricultural soils (soilRESIST) <u>Awarding body</u> : Alexander von Humboldt-Stiftung/Foundation, Bonn, Germany
2024-2025	Enugu State University of Science & Technology (ESUT), Enugu, Nigeria; \$25,000, PI <u>Title</u> : Metagenomics to monitor abundances and diversity of antimicrobial resistance (AMR) genes and strains circulating in poultry food chain in Nigeria <u>Awarding body</u> : National Institutes of Health (NIH), USA
2021	Enugu State University of Science & Technology (ESUT), Enugu, Nigeria; \$10,000, PI <u>Title</u> : Functional Metagenomics to Reveal and Monitor Novel AMR Genes and Strains Circulating in Food Chain in Nigeria <u>Awarding body</u> : Institute Mérieux, France
2018	Ebonyi State University, Abakaliki, Nigeria; ₦2,000,000, Co-PI <u>Title</u> : Detection of methicillin resistant <i>Staphylococcus aureus</i> (MRSA) from clinical samples <u>Awarding body</u> : Tertiary Education Trust Fund (TETFund), Nigeria

5. Teaching: Course(s) Taught, Supervising and Mentoring Activities

Courses Taught

2024	Co-Instructor, University of Leipzig, Germany; Courses: Global Change Microbiology and Antimicrobial Resistance in Soil and the Environment
2021-2023	Lecturer, Enugu State University of Science & Technology, Nigeria; Courses: PMB531/PMB232 Pharmaceutical Microbiology and Antimicrobial Pharmaceutical Products
2019-2021	Lecturer, Coal City University, Nigeria; Courses: MCB201/MCB431/MCB432 General Microbiology, Virology, and Epidemiology & Public Health
2017-2020	Lecturer, Ebonyi State University, Nigeria; Courses: AMB421/AMB422/AMB457/AMB435/AMB361/AMB424/AMB351 Pharmaceutical Microbiology, Medical Virology, Research Methods in Microbiology, Microbial Genetics, Principles of Biotechnology, Analytical Microbiology, and Microbial Physiology & Metabolism
2014-2016	Assistant Lecturer, Ebonyi State University, Nigeria; Courses: AMB323/AMB325/AMB101 Pathogenic Bacteriology, Mycology, and Introductory Microbiology

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Supervising and Mentoring Activities

1. Students Projects Supervised (including Co-supervision, Indirect Supervision, or Oversight)
 - B.Sc., students (>30)
 - M.Sc., students (>10)
 - Ph.D., students (5)
2. Other Supervisory and mentoring activities
 - Supervising and mentoring one student as part of a Bachelors Thesis on the project: Effect of manure from antibiotic-treated animals on soil microbial activity and antibiotic resistance genes (ARGs) levels in agricultural soils at the University of Leipzig, Germany (2024 – present).
 - Supervising and mentoring one student on internship as part of examination regulations in the field of Biotechnology on the subject: effects of antibiotic mixtures on bacterial communities in the soil at the Brandenburgische Technische Universität Cottbus - Senftenberg, Germany (Oct. 2024 – Apr. 2025).
 - Mentored three (3) selected Members of the Global Young Academy (GYA), Germany (2022-2024).
 - Supervised work activities of research and technical staff of the Antibiotic Resistance Research Group of Enugu State University of Science and Technology, Nigeria (2021 – 2023).
 - Supervised the microbiology aspects of projects carried out by pharmacy students of the Pharmaceutical Microbiology Department at Enugu State University of Science and Technology, Nigeria (2021 – 2023).
 - Supervised and mentored graduating university students at Coal City University, Nigeria (2019 – 2021).
 - Mentored graduating students at Federal University of Health Sciences, Uburu, Nigeria (2021).
 - Supervised work activities of research staff at Ebonyi State University, Nigeria (2017 – 2020).
 - Mentored students on grant and CV/resume writing at Ebonyi State University, Nigeria (2018-2019).
 - Supervised work activities of technical staff at Ebonyi State University, Nigeria (2015 – 2016).
 - Trained and mentored 500 youths on the Millennium Development Goals (MDGs) at National Youth Service Corps, Nigeria (2010 – 2015).

6. Research (Fellowship) Experience

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|--------------|--|
| 2023-present | Alexander von Humboldt-Stiftung Fellowship, Helmholtz Centre for Environmental Research (UFZ), Leipzig, Germany. <u>eAMR Lab</u> : https://www.ufz.de/index.php?en=38744Leipz <ul style="list-style-type: none">• Designed and conducted a study to unravel effect of antibiotic mixtures on soil microbiomes and antibiotic resistance evolution and spread in the environment.• Drafted and prepared 1 peer-reviewed manuscript for publication.• Submitted 1 conference abstract paper to attend International One Health Symposium in Berlin (October 17-19, 2024). |
| 2021 | DAAD Postdoctoral Fellowship, Federal Institute for Materials Research and Testing (BAM), Berlin, Germany. <u>Dr. rer. nat Frank Schreiber's Lab</u> : https://shorturl.at/DgfgE <ul style="list-style-type: none">• Designed and developed research to study effect of antibiotics and biocide mixtures on <i>Pseudomonas aeruginosa</i> mutant strains.• Developed soft skills in project management, experimental research design and data analysis using R and ORIGIN Pro. software.• Contributed to the drafting and writing of 1 peer-review manuscript for publication. |
| 2018 | Matsumae international Foundation (MIF) Postdoctoral Fellowship, Kyoto University, Kyoto, Japan. <u>Prof. Hirofumi AKARI's Lab</u> : https://akari-labo.jimdofree.com/ <ul style="list-style-type: none">• Assisted in sample collection for investigating HIV-1 reservoir in HIV-1<i>mt</i> (HIV-1 macaque tropic) cell lines.• Drafted and published 1 review paper on: minding the gap of primate research in Africa.• Assisted in data management and analysis, and in literature reviews on topics related to <i>functional HIV cure</i>. |

7. Research Interests

- ✓ One Health
- ✓ New perspectives to control and prevent antimicrobial resistance (AMR) and infectious disease spread in humans.
- ✓ Application of metagenomics for early detection and reporting of viral and bacterial infections.
- ✓ Pandemic preparedness: Zoonotic diseases and bioterrorism risks in human population.
- ✓ Development of educational tools to understand climate change impact on the evolution and spread of diseases.

8. Journal Publications

Peer-reviewed articles (selected)

1. **Ejikeugwu C**, Duru C, Onu E, Adonu C, Ujam N, Nwakaeze E, Okorie N, Ebenebe I, Mba T, Mba A, Ezeador C, Edeh C, Ugwu M, Adikwu M (2024). Food chain milieus: Potential reservoirs and sources of metallo-beta-lactamase-producing antibiotic-resistant bacteria in Southeast Nigeria. *Microbe and Immunity* 1(1), 2319.
2. Nwike IE, Ugwu MC, **Ejikeugwu PC**, Ujam NT, Iroha IR and Esimone CO (2023). Phenotypic and molecular characterization of enteropathogenic *Escherichia coli* and *Salmonella* spp. causing childhood diarrhoea in Awka, South-Eastern Nigeria. *Bulletin of the National Research Centre*, 47:97.
3. Okafor COO, Iroha IR, Ude IU, Onuoha SC, **Ejikeugwu C**, Ovia KN, Eromonsele BO, Agah VM, Okoronkwo C, Gabriel-Ibeh I, Okoroafor I, Nwachukwu OB (2022). Drug resistance profile of biofilm forming *Pseudomonas aeruginosa* isolated from aquatic environment in South Eastern Nigeria. *Environmental Challenges*, 8:100530.
4. **Ejikeugwu C**, Nworie O, Saki M, Al-Dahmoshi HOM, Al-Khafaji NSK, Ezeador C, Nwakaeze E, Eze P, Oni E, Obi C, Iroha I, Esimone C, Adikwu MU (2021). Detection of metallo- β -lactamase and AmpC genes in *Escherichia coli*, *Klebsiella* species, and *Pseudomonas aeruginosa* isolates from abattoir and poultry origin in Nigeria. *BMC Microbiology*, 21(124):1-9.
5. Enabulele EE, Platt RN, Adeyemi E, Agbosua E, Aisien MSO, Ajakaye OG, Ali MU, Amaechi EC, Atalabi T.E, Auta T, Awosolu OB, Dagona AG, Edo-Taiwo O, **Ejikeugwu CEP**, Igbeneghu C, Njom VS, Orji MKN, Oyinloye FOP, Ozemoka HJ, Ugah UI, Anderson TJC (2021). Urogenital schistosomiasis in Nigeria post receipt of the largest single praziquantel donation in Africa. *ACTA Tropica*, 219:105916.
6. **Ejikeugwu C**, Hasson SO, Al-Mosawi RM, Alkhudhairy MK, Saki M, Ezeador C, Eze P, Ugwu M, Duru C, Ujam NT, Edeh C, Udu-Ibiam O, Iroha I, Adikwu M (2020). Occurrence of FOX-1 AmpC Gene among *Pseudomonas aeruginosa* isolates in abattoir samples from south-eastern Nigeria. *Reviews in Medical Microbiology*, 31(2):99-103.
7. **Ejikeugwu C**, Saki M, Nwakaeze E, Eze P, Chinedu O, Carissa D, Edeh C, Esimone C, Iroha I, Adikwu M (2019). Characterization of *bla*^{IMP-1} MBL genes among *Klebsiella* species from abattoir samples by multiplex PCR. *Gene Reports*, 16:100428.
8. **Ejikeugwu C**, Esimone C, Iroha I, Adikwu M (2018). First Detection of FOX-1 AmpC β -lactamase gene expression among *Escherichia coli* isolated from abattoir samples in Abakaliki, Nigeria. *Oman Medical Journal*, 33(3):134-140.
9. **Ejikeugwu C**, Esimone C, Iroha I, Okonkwo EC, Gugu T, Oli AN, Ugwu M, Ezeador C, Moses NI (2017). Detection of metallo- β -lactamase (MBL) among carbapenem-resistant Gram-negative bacteria from rectal swabs of cow and cloacae swabs of poultry birds. *Annals of Medical Health Science Research*, 7:51-56.
10. Ikegbunam MN, Anagu LO, Iroha IR, **Ejikeugwu C**, Esimone CO (2014). Abattoirs as Non-Hospital Source of Extended Spectrum Beta Lactamase Producers: Confirmed by the Double Disc Synergy Test and Characterized by Matrix-Assisted Laser Desorption/Ionization Time of Flight Mass Spectrometry. *PLoS ONE*, 9(4):e94461.
11. **Ejikeugwu C**, Iroha I, Adikwu M, Esimone C (2013). Susceptibility and Detection of Extended Spectrum β -Lactamase Enzymes from Otitis Media Pathogens. *American Journal of Infectious Diseases*, 9(1):24-29.

Complete list of my publications can be accessed via the following links:

ORCID: <https://orcid.org/0000-0002-3506-2346>

Google Scholar: <https://scholar.google.com/citations?user=FRvOnisAAAAJ&hl=en>

Loop: <https://loop.frontiersin.org/people/476560/overview>

Research Gate: <https://www.researchgate.net/profile/Chika-Ejikeugwu>

Book Chapters (selected)

1. Tim Sandle and **Ejikeugwu Chika** (2022). Antimicrobials: past, present and future. Amazon Kindle Edition. pp. 1-608. <https://www.amazon.com/Antimicrobials-Present-Future-Tim-Sandle-ebook/dp/B0BGJLL7QG>
2. C. Odimegwu, Kenneth Ngwoke, **Chika Ejikeugwu**, Charles O. Esimone (2015). Lichen Secondary Metabolites as Possible Antiviral Agents. In: Lichen Secondary Metabolites: Bioactive Properties and Pharmaceutical Potential. A Branislav Ranković (Ed). Springer International Publishing, Switzerland. pp. 165-177. <https://link.springer.com/book/10.1007/978-3-319-13374-4>

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9. Presentations: Conference Papers and Invited Lectures

Conference papers (selected)

- 7-10 May, 2024 **Chika Ejikeugwu.** Transformative and Inclusive Science for a Sustainable Future. International Conference of Young Scientist and Annual General Meeting (AGM) of the Global Young Academy (GYA). U.S. National Academies of Science, Engineering, and Medicine, Washington D.C., USA. [*Lightning talk*].
- 7-11 July, 2019 **Chika Ejikeugwu.** FOX-1 AmpC β -Lactamase Gene Expression in *Escherichia coli* Isolates from Abattoir. 8th Congress of European Microbiologists (FEMS 2019). SEC Center, Glasgow, Scotland, UK. [*Presented 1 Poster*].
- 24-28 March, 2019 **Chika Ejikeugwu.** Frequency and antibiogram of uropathogens isolated from urine samples of HIV infected patients on antiretroviral therapy. X7 HIV Vaccines conference. Fairmont Chateau Whistler, Whistler, British Columbia, Canada. [*Presented 1 Poster*].
- 3-6 Sept., 2019 **Chika Ejikeugwu.** *Schistosoma haematobium* miracidia sampling in Nigeria for population genomics analysis. 42nd Nigerian Society for Microbiology (NSM) Conference. Crawford University, Igbesa, Ogun State, Nigeria. [*Presented 1 Poster*].

Invited lectures (selected)

- 2021 09 **Science Presenter**, 10th Biannual Conference of the Society of Environmental Toxicology & Chemistry (SETAC). Held a 2-hour session to teach undergraduate students on "How to become Successful in Academia."
- 2020 07 **Science Presenter**, Kachem Young Initiative, Ebonyi State, Nigeria. Held a 1-hour talk to teach young people on "The truth about COVID-19 pandemic and how to stay safe in the pandemic."
- 2020 08 Science Presenter, The Teenz Global Foundation in partnership with the YALI Network Ebonyi State, Nigeria. Held a 1-hour session to guide young people on "Mental Health Perspective in Combating COVID-19 Pandemic."

10. Academic and Community Service and Volunteerism

Manuscript Peer Review

Journal of Pediatrics & Child Health, Gene Reports, Journal of Clinical Laboratory Analysis, Nigerian Journal of Microbiology, European Journal of Medicinal Plants, African Journal of Microbiology Research

Academic Service

- 2023 Member, Selection Committee on Calls for Membership of Global Young Academy (GYA), Germany
- 2022 Member, Selection Committee on Calls for Membership of the GYA, Germany
- 2021 Member, Planning Organizing Committee (POC) for 2021 Annual General Meeting (AGM) of Global Young Academy (GYA) and International Conference of Young Scientists
- 2021 Member, POC of the First Online International Applied Microbiology Conference for Early and Mid-Career Scientists organized by the Society for Applied Microbiology, United Kingdom
- 2020 Secretary, POC of the 7th Nigerian Society for Microbiology Annual Southeast AGM, Imo, Nigeria
- 2019-2021 Assistant Editor-in-Chief I, *EBSU Science Journal*, an Institutional Journal of Ebonyi State University

Additional Activities

- Volunteered in de-worming of 1080 indigent primary school pupils in Kaduna State, Nigeria. **2010**
- Volunteered in vaccination of 200 high school students against HBV infection in Kaduna State, Nigeria **2010**
- Volunteered in empowering high school students with 800 books & writing materials in Kaduna, Nigeria **2010**
- Volunteered in distributing 10 treated mosquito nets to a primary healthcare center in Kaduna, Nigeria **2010**
- Volunteered in distribution of 10 classroom desks to a high school in Kaduna, Nigeria **2010**

11. Membership of Scientific Societies

- 2008-present** Member, American Society for Microbiology (ASM)
- 2023-present** Member, European Society of Clinical Microbiology and Infectious Diseases (ESCMID)
- 2019 present** Member, Applied Microbiology International
- 2019 present** Member, Nigerian Society for Microbiology (NSM)
- 2020 present** Affiliate Member, Microbiology Society, Scotland, UK
- 2018 present** Member, Asian Council of Science Editors (ACSE)