Charity Wiafe Akenten Ph.D.

(formerly; Charity Danquah)

Kumasi Center for Collaborative Research in Tropical Medicine, Private Mail Bag,

Kwame Nkrumah University of Science and Technology (KNUST), Kumasi-Ghana

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**EDUCATION**

2019-2023 Kwame Nkrumah University of Science and Technology (KNUST), Kumasi-Ghana, Ph.D.

candidate

2011-2013 University of Baltimore. Master of Science (Health System Management)

2007-2009 University of Maryland School of Medical Research and Technology Bachelor of Science (Medical Research and Technology)

2004-2007 Howard Community College, Columbia, Maryland, Associate Degree of Arts and Science

**RESEARCH INTEREST**

I am a dedicated Microbiologist and Biomedical Scientist with a strong research focus on antimicrobial resistance (AMR). My expertise includes studying resistance patterns in bacteria, particularly Extended-Spectrum Beta-Lactamases (ESBLs) and carbapenem resistance in *Klebsiella pneumoniae* and *Escherichia coli*, multidrug resistance (MDR) in *Acinetobacter* species, and mobile colistin resistance (mcr) in Gram-negative bacteria.

Currently, I serve as the Project Coordinator for the One Health Bacteriology Group at the Kumasi Centre for Collaborative Research (KCCR), where I oversee research initiatives, review test results for unusually resistant isolates, and analyze resistance trends. Additionally, I actively contribute to the AMR network in Ghana, supporting the establishment and monitoring of bacteriology research laboratories and training staff in bacteriology standards

**PROFESSIONAL EXPERIENCE**

2025 till date, Part-time lecturer, School of Veterinary Medicine, Kwame Nkrumah University of Science and Technology

2024 till date Project Coordinator, One Health Bacteriology group: KUMASI CENTER FOR

COLLABORATIVE RESEARCH IN TROPICAL MEDICINE

2014-2023 Biomedical Scientist: KUMASI CENTER FOR COLLABORATIVE RESEARCH IN Tropical

MEDICINE,

2009- 2013 Biomedical Scientist /University of Maryland Medical Center

2007-2009 Research Assistant, Shock Trauma UMMC, Baltimore, Maryland

Skills Highlights

* Bacterial Culture and isolation
* Bacterial identifications
* Antibiotic susceptibility Testing (AST)
* Library preparation and sequencing
* Real-time and conventional PCR
* Bacteria Genotyping
* Salmonella Serotyping
* DNA and RNA Isolation/Extraction,
* Gel Electrophoresis
* Phlebotomy
* Working knowledge of the Microsoft Office package
* Computer information system, Microsoft WORD, Excel, PowerPoint Point, Microsoft Works,
* Competent and knowledgeable of most standard laboratory equipment in microbiology

**EXTRACURRICULAR ACTIVITIES/HONORS**

Dean’s List, 2005-2007

Senatorial Scholarship

University of Maryland Medical Center Full-time scholarship

Upsilon Phi Delta- National Administrator Honor Society-member

**SELECTED WORKSHOPS/TRAINING/skills**

1. Sequencing and Bioinformatics using ONT, RKI, Berlin Germany
2. Workshop on Dataset Development for Clinical Decision Support Tool for Antibiotic Prescribing 2023
3. Setting up Antimicrobial Resistance (AMR) Surveillance satellites in Ghana and Tanzania
4. SARS-CoV-2 genome sequencing applying Nest Generation Sequencing (NGS), Kumasi, Ghana
5. Remote/Virtual training on the use of Vitek 2 Compact, 2020, KCCR
6. Application and use of SeqStudio (Sequencer) Analyzer, 2019, KCCR
7. Antimicrobial Resistance Surveillance Evaluation and Monitoring, 2018, KCCR
8. Microbiology of NTS and Application of Molecular Typing Methods,2018, Tanzania
9. Molecular analysis and real-time PCR on Mobile colistin Resistance, 2017, Hamburg, Germany
10. Organize Training on phenotypic and genotypic identifications of antibiotic resistance in Bacteria
11. Establishing AMR surveillance labs in Ghana and Tanzania
12. Facilitator and training for physicians and Nurses on Antimicrobial resistance

Publications

1. Thorsten Thye, Ralf Krumkamp, John P. A. Lusingu, Linda Aurelia Ofori, Daniel T. R. Minja, Antje Flieger, Samwel Gesase, Richard Phillips, Sandra Simon, Kwasi Obiri-Danso, **Charity Wiafe** Akenten, Joyce Mbwana, Ellis Paintsil, Oumou Maiga Ascofare, Anna Jaeger, Maike Lamshöft, Daniel Eibach, Wibke Loag, Stefan Berg, Jürgen May & Denise Dekker; Non-typhoidal  *Salmonella* transmission reservoirs in sub-Saharan Africa: a genomic assessment from a One Health perspective. *Antimicrob Resist Infect Control* **14**, 46 (2025). https://doi.org/10.1186/s13756-025-01561-2
2. Bernadette Agbavor, Rejoice Agyeiwaa Arthur, Abigail Agbanyo, Dzifa Kofi Ahiatrogah, **Charity Wiafe Akenten,** Cynthia Adu-Asiamah, Kabiru Mohammed Abass, Elizabeth Ofori, George Amofa, Kwadwo Boampong, Thorsten Thye, Denise Dekker, Mathew Glover Addo, Mark Wansbrough-Jones, Tim John Bull, Yaw Ampem Amoako & Richard Odame Phillips Improved protocols for isolation of Mycobacterium ulcerans from clinical samples. BMC Microbiol 25, 118 (2025). <https://doi.org/10.1186/s12866-025-03835-6>
3. Ackam N, Opoku-Boadi A, Agbavor B, Adjei JK, Agbanyo A, Oppong MN, **Wiafe-Akenten C,** Sylverken A, Obiri-Danso K, Wansbrough-Jones M, Amoako YA, Phillips RO. Bacterial diversity in Buruli ulcer lesions in Ghana. J Clin Tuberc Other Mycobact Dis. 2024 Jul 26;36:100468. doi: 10.1016/j.jctube.2024.100468. PMID: 39171276; PMCID: PMC11338157.
4. Helen Rautman L, Maiga-Ascofaré O, Eibach D, Hogan B, Dekker D, Jaeger A, **Akenten CW**, et al. Fever in focus: Symptoms, diagnoses and treatment of febrile children in Ghana-A longitudinal hospital study. Trop Med Int Heal [Internet]. 2024 [cited 2024 Mar 11];29:206–13. Available from: <https://onlinelibrary.wiley.com/doi/10.1111/tmi.13962>
5. Ofori, Linda Aurelia, Dennis Fosu, Seth Ofori, **Charity Wiafe Akenten**, Antje Flieger, Sandra Simon, Anna Jaeger et al. "Salmonella enterica in farm environments in the Ashanti Region of Ghana." BMC microbiology 23, no. 1 (2023): 370.
6. **Akenten, C. W.,** Khan, N. A., Mbwana, J., Krumkamp, R., Fosu, D., Paintsil, E. K., Boahen, K. G., Osei-Mensa, J., Maiga-Ascofare, O., May, J., Obiri-Danso, K., Phillips, R. O., Ofori, L. A., & Dekker, D. (2023). Carriage of ESBL-producing Klebsiella pneumoniae and Escherichia coli among children in rural Ghana: a cross-sectional study. Antimicrobial Resistance and Infection Control, 12(1), 60. <https://doi.org/10.1186/S13756-023-01263-7/FIGURES/2>
7. **Akenten, C. W**., Ofori, L. A., Khan, N. A., Mbwana, J., Sarpong, N., May, J., Thye, T., Obiri-Danso, K., Paintsil, E. K., Fosu, D., Philipps, R. O., Eibach, D., Krumkamp, R., & Dekker, D. (2023). Prevalence, Characterization, and Antimicrobial Resistance of Extended-Spectrum Beta-Lactamase-Producing Escherichia coli from Domestic Free-Range Poultry in Agogo, Ghana. Foodborne Pathogens and Disease, 20(2), 59–66. <https://doi.org/10.1089/FPD.2022.0060>
8. Rautman, L. H., Maiga-Ascofaré, O., Eibach, D., Hogan, B., Dekker, D., Jaeger, A., **Akenten, C. W.,** Owusu-Dabo, E., Boateng, F. O., Hanson, H., Boahen, K. G., Sarpong, N., Adu-Sarkodie, Y., Kreuels, B., May, J., & Krumkamp, R. (2023). Fever in focus: Symptoms, diagnoses and treatment of febrile children in Ghana-A longitudinal hospital study. Tropical Medicine & International Health: TM & IH. https://doi.org/10.1111/tmi.13962)
9. Paintsil EK, Ofori LA, **Akenten CW**, Zautner AE, Mbwana J, Khan NA, et al. Antibiotic-Resistant Arcobacter spp. in commercial and smallholder farm animals in Asante Akim North Municipality, Ghana and Korogwe Town Council, Tanzania: a cross-sectional study. Gut Pathog. 2023 Dec 1;15(1) DOI: 10.1186/s13099-023-00588-3
10. Krumkamp, Ralf, Matin Kohsar, Kolja Nolte, Benedikt Hogan, Daniel Eibach, Anna Jaeger**, Charity Wiafe Akenten,** et al. 2023. “Pathogens Associated with Hospitalization Due to Acute Lower Respiratory Tract Infections in Children in Rural Ghana: A Case–Control Study.” Scientific Reports 2023 13:1 13 (1): 1–9. https://doi.org/10.1038/s41598-023-29410-5.
11. **Akenten, C.W**.; Weinreich, F.; Paintsil, E.K.; Amuasi, J.; Fosu, D.; Loderstädt, U.; May, J.; Frickmann, H.; Dekker, D. Intestinal Helminth Infections in Ghanaian Children from the Ashanti Region between 2007 and 2008—A Retrospective Cross-Sectional Real-Time PCR-Based Assessment. Trop. Med. Infect. Dis. 2022, 7, 374. https://doi.org/10.3390/ tropicalmed711037
12. Paintsil EK, Ofori LA, **Akenten CW**, Zautner AE, Mbwana J, Jaeger A, Lamshöft M, May J, Obiri-Danso K, Philipps RO, Krumkamp R and Dekker D (2022) Antibiotic-resistant Campylobacter coli and Campylobacter jejuni in commercial and smallholder farm animals in the Asante Akim North Municipality of Ghana. Front. Microbiol. 13:983047. doi: 10.3389/fmicb.2022.983047
13. Pankok, F.; Taudien, S.; Dekker, D.; Thye, T.; Oppong, K.; **Wiafe Akenten, C**.; Lamshöft, M.; Jaeger, A.; Kaase, M.; Scheithauer, S.; et al. Epidemiology of Plasmids in Escherichia coli and Klebsiella pneumoniae with Acquired Extended Spectrum Beta-Lactamase Genes Isolated from Chronic Wounds in Ghana. Antibiotics 2022, 11, 689. https://doi.org/10.3390/ antibiotics11050689
14. Paintsil, E.K.; Ofori, L.A.; Adobea, S.; **Akenten, C.W**.; Phillips, R.O.; Maiga-Ascofare, O.; Lamshöft, M.; May, J.; Obiri Danso, K.; Krumkamp, R.; et al. Prevalence and Antibiotic Resistance in Campylobacter spp. Isolated from Humans and Food-Producing Animals in West Africa: A Systematic Review and Meta-Analysis. Pathogens 2022, 11, 140. https://doi.org/10.3390/ pathogens11020140
15. Ellis Kobina Paintsil, Linda Aurelia Ofori, **Charity Wiafe Akenten,** Dennis Fosu, Seth Ofori, Maike Lamshöft, Jürgen May, Kwasi Obiri Danso, Ralf Krumkamp, Denise Dekker; (2021) ‘Antimicrobial Usage in Commercial and Domestic Poultry Farming in Two Communities in the Ashanti Region of Ghana’, Antibiotics 2021, Vol. 10, Page 800. Multidisciplinary Digital Publishing Institute, 10(7), p. 800. doi: 10.3390/ANTIBIOTICS10070800.
16. Dekker, D.; Pankok, F.; Thye, T.; Taudien, S.; Oppong, K.; **Akenten, C.W**.; Lamshöft, M.; Jaeger, A.; Kaase, M.; Scheithauer, S.; et al. Clonal Clusters, Molecular Resistance Mechanisms and Virulence Factors of Gram-Negative Bacteria Isolated from Chronic Wounds in Ghana. Antibiotics 2021, 10, 339. https:// doi.org/10.3390/antibiotics10030339
17. **Charity Wiafe Akenten,** Kennedy Gyau Boahen, Kwadwo Sarfo Marfo, Nimako Sarpong, Denise Dekker, Nicole Sunaina Struck, Lawrence Osei‑Tutu, Juergen May, John Humphrey Amuasi and Daniel Eibach Bloodstream infection with *Acinetobacter baumanii* in a *Plasmodium falciparum* positive infant: a case report. *J Med Case Reports* **15**, 46 (2021). https://doi.org/10.1186/s13256-020-02648-7

1. Wiebke Herr, Ralf Krumkamp, Benedikt Hogan, Denise Dekker, Kennedy Gyau, Ellis Owusu-Dabo, Nimako Sarpong, Anna Jaeger, Wibke Loag, Doris Winter, **Charity Wiafe Akenten**, Daniel Eibach, Helmut Fickenscher, Anna Eis-Hübinger, Jürgen May & Benno Kreuels A cross-sectional study on risk factors for infection with Parvovirus B19 and the association with anaemia in a febrile paediatric population in Ghana. *Sci Rep* **10,**15695 (2020). <https://doi.org/10.1038/s41598-020-72657-5>
2. Wolters, M.; Frickmann, H.; Christner, M.; Both, A.; Rohde, H.; Oppong, K.; **Akenten, C.W.**; May, J.; Dekker, D. Molecular Characterization of *Staphylococcus aureus* Isolated from Chronic Infected Wounds in Rural Ghana. *Microorganisms* **2020**, *8*, 2052. https://doi.org/10.3390/microorganisms8122052
3. Manouana GP, Lorenz E, Mbong Ngwese M, Nguema Moure PA, Maiga Ascofare´ O, **Akenten CW**, et al. (2020) Performance of a rapid diagnostic test for the detection of Cryptosporidium spp. in African children admitted to hospital with diarrhea. PLoS Negl Trop Dis 14(7): e0008448. https://doi. org/10.1371/journal.pntd.0008448
4. Ralf Krumkamp, Kwabena Oppong ,Benedikt Hogan,Ricardo Strauss, Hagen Frickmann, **Charity Wiafe-Akenten**, Kennedy G. Boahen, Volker Rickerts, Ilka McCormick Smith, Uwe Groß, Marco Schulze Anna Jaeger, Ulrike Loderstädt, Nimako Sarpong, Ellis Owusu-Dabo, Jürgen May, Denise Dekker (2020) Spectrum of antibiotic-resistant bacteria and fungi isolated from chronically infected wounds in a rural district hospital in Ghana. PLOS ONE 15(8): e0237263. <https://doi.org/10.1371/journal.pone.0237263>
5. Paintsil, E. K., **Akenten, C. W**., & Ofori, L. A. (2020). The Relationship between Haemoglobin Levels and Platelet Counts of Malaria Infected and Non-Infected Children in Offinso, Ghana. *Asian Journal of Biochemistry, Genetics and Molecular Biology*, *6*(3), 29-37. https://doi.org/10.9734/ajbgmb/2020/v6i330154
6. Dekker D, Eibach D, Boahen KG, **Akenten CW**, Pfeifer Y, Zautner AE, Mertens E, Krumkamp R, Jaeger A, Flieger A, Owusu-Dabo E, May J. Fluoroquinolone-Resistant Salmonella enterica, Campylobacter spp., and Arcobacter butzleri from Local and Imported Poultry Meat in Kumasi, Ghana. Foodborne Pathog Dis. 2019 May;16(5):352-358. doi: 10.1089/fpd.2018.2562. Epub 2019 Mar 23. PMID: 30907631; PMCID: PMC6529854.
7. Falgenhauer L, Imirzalioglu C, Oppong K, **Akenten CW**, Hogan B, Krumkamp R, Poppert S, Levermann V, Schwengers O, Sarpong N, Owusu-Dabo E, May J and Eibach D (2019) Detection and Characterization of ESBL-Producing *Escherichia coli* From Humans and Poultry in Ghana. *Front. Microbiol.* 9:3358. doi: 10.3389/fmicb.2018.03358
8. Hogan B, Eibach D, Krumkamp R, Sarpong N, Dekker D, Kreuels B, Maiga-Ascofaré O, Gyau Boahen K, **Wiafe Akenten C**, Adu-Sarkodie Y, Owusu-Dabo E. Malaria Coinfections in Febrile Pediatric Inpatients: A Hospital-Based Study from Ghana.

Clinical Infectious Diseases. 2018 Feb 2.

1. Hogan B, Ammer L, Zimmermann M, Binger T, Krumkamp R, Sarpong N, Rettig T, Dekker D, Kreuels B, Reigl L, Boahen KG, **Wiafe Akenten C,** Burden of influenza among hospitalized febrile children in Ghana. Influenza and other respiratory viruses. 2017 Nov 1;11(6):497-501.
2. Eibach D, Dekker D, Gyau Boahen K, **Wiafe Akenten C**, Sarpong N, Belmar Campos C, Berneking L, Aepfelbacher M, Krumkamp R, Owusu-Dabo E, May J.” Extended-spectrum beta-lactamase-producing Escherichia coli and Klebsiella pneumoniae in local and imported poultry meat in Ghana” (2018)
3. Falgenhauer L, Imirzalioglu C, Oppong K, **Akenten CW,** Hogan B, Krumkamp R, Poppert S,Levermann V, Schwengers O,Sarpong N, Owusu-Dabo E, May J and Eibach D (2019) Detection and Characterization of ESBL-Producing Escherichia coli From Humans and Poultry in Ghana

**Oral Presentation**

1. Characterization of extended-spectrum beta-lactamase-producing Escherichia coli from domestic free-range poultry in Agogo, Ghana

The Inaugural Africa One Health Network Workshop, held October 3-7, 2022 in Ghana,

Accra, Ghana,2022; Audience

1. Carriage of ESBL-producing Klebsiella pneumoniae and Escherichia coli among children in rural Ghana KNUST SCIENTIFIC RESEARCH CONFERENCE 2023,

**Poster Presentation**

1. Antimicrobial Profile of Acinetobacter spp. from clinical isolates of patients in rural Ghana

**C. W. Akenten**, R. Moirongo M. Lamshöft, J. H.. Amuasi1, J. Ankomah 1, K. Baffour, O. M. Ascofaré, W. Loag, E. Lorenz, J. May, D. Eibach, D. Dekker. 33rd ECCMID 2023: European Congress of Clinical Microbiology & Infectious Diseases, 15. April 2023 - 18. April 2023

1. Strengthening Diagnostic Laboratories in Rural Ghanaian Hospitals: An Integrated Approach to Tackle Antimicrobial Resistance.

M. Lamshöft **C. W. Akenten**, K. Oppong,L. M. Aglanu, R. Moirongo,W. Loag,O. M. Ascofaré, E. Lorenz, J. May, D. Eibach, D. Dekker,J. Amuasi

OWSD 6th General Assembly and International Conference, November 08 - November 19, 2021

1. Antimicrobial Resistance - The Subtle Killer - in the Mid of Covid-19," **Charity Wiafe Akenten**, Kwabena Oppong, Oumou Maiga Ascofare, John H Amuasi, KNUST 9th Biennial Scientific Conference September 2021

**Online Poster Presentation**

1. Extended-Spectrum Beta-Lactamase-Producing *Escherichia coli* and *Klebsiella pneumoniae* among Diarrhoea and Non-Diarrhoea Children and Farm Animals in Peri-Rural Ghana, “**Charity Wiafe Akenten**, Linda Ofori, Richard Odame Phillips, Kwasi Obiri-Danso, Denise Dekker, WCS CONFERENCE Antimicrobial Resistance

**Conferences**

1. KNUST 9th Biennial Scientific Conference September 2021
2. OWSD CONFERENCE 2024 held at KNUST
3. ESCMID conference, Copenhagen, Denmark (2023).
4. WCS CONFERENCE Antimicrobial Resistance – Genomes, Big Data and Emerging Technologies 2024 (Online)
5. ESCMID conference, Barcelona, Spain (2024)
6. Antimicrobial Chemotherapy Conference (ACC) 2025

**Funds**

1. Winner Travel grant for presentation of my PhD poster (One Health Platform)
2. Winner of funds for the Celebration of Antimicrobial Resistance week (WAAW2024)

**Journal Reviewer**

1. 2024-present Reviewer Editor Frontier Microbiology
2. 2024 Plos One
3. 2024 AC-Antimicrobial Resistance
4. 2023 Access Microbiology
5. 2023 Journal of Applied Microbiology
6. 2023 Microbiology Spectrum (ASM)
7. 2020-date Foodborne pathogen