

OLAMIDE ISHOLA

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PROFESSIONAL SUMMARY

Results-driven biochemistry professional with over 7 years of progressive experience spanning academic research, teaching, pharmaceutical manufacturing, and contract research operations. Proven expertise in recombinant protein production, advanced analytical techniques (EPR, electron microscopy), and laboratory quality control. Strong track record in project coordination, cross-functional collaboration, and delivering high-quality scientific outcomes in fast-paced research environments. Demonstrated ability to bridge technical complexity with operational efficiency, from bench-level protein engineering to production workflow optimization. Published researcher with 20+ peer-reviewed articles and exceptional attention to regulatory compliance, data integrity, and scientific documentation standards. Seeking to leverage a comprehensive technical skillset and research acumen in pharmaceutical, biotechnology, or R&D laboratory settings.

CORE COMPETENCIES

- Recombinant Protein Production & Purification
- Viral Protein Structure & Function Analysis
- Membrane Protein Characterization
- Protein-Protein & Protein-Drug Interactions
- Spectroscopic Analysis & Structural Studies
- Plant Compound Extraction & Isolation
- Phytochemical & Antioxidant Profiling
- DNA Extraction & Genetic Characterization
- Laboratory Management & Research Design

TECHNICAL SKILLS

- **Protein Analysis:** EPR Spectroscopy, SDS-PAGE, Western Blotting, Size Exclusion Chromatography, Mass Spectrometry, Spectrofluorometer
- **Structural Techniques:** Negative Staining Electron Microscopy, Isothermal Titration Calorimetry (ITC)
- **Protein Engineering:** Expression Systems, Protein Purification, Recombinant Protein Production
- **Computational Methods:** AlphaFold (Protein Structure Prediction), Swiss Model (3D Structural Modeling), MATLAB, and OriginPro (Data Analysis)
- **Plant Analysis:** Phytochemical Screening, Extraction, Isolation, Antioxidant Profiling, Proximate Analysis
- **Biotechnology:** DNA Extraction, Isolation, Sequencing, Gel Electrophoresis, Plant Tissue Culture
- **Pharmaceutical:** Drug Manufacturing, Quality Control Testing, Chemical & Microbiological Testing

EDUCATION

PhD Chemistry & Biochemistry Texas Tech University	GPA: 4.0/4.0	2026
Master of Science in Biochemistry University of Ilorin, Ilorin	Distinction	2021
Bachelor of Science in Biochemistry. Bowen University, Iwo	GPA: 4.33/5.0 (Second Class Upper)	2015

PROFESSIONAL EXPERIENCE

Graduate Research Assistant, Ph.D.

January 2022 - May 2026

Department of Chemistry & Biochemistry, Texas Tech University

Principal Investigator: Dr. Elka Georgieva

- Conduct research on viral proteins in cellular membranes with a focus on proteins from oncoviruses
- Investigate molecular mechanisms of HIV-1 viral membrane proteins using advanced structural techniques
- Perform protein engineering for structure-function relationship studies
- Research molecular mechanisms of virus-host interactions
- Study membrane proteins in drug development applications
- **Technical Skills Applied:**
 - Recombinant protein production, expression & purification
 - Protein-protein and protein-drug interaction analysis using ITC
 - EPR spectroscopy for conformational dynamics of membrane proteins
 - Negative staining electron microscopy for membrane protein structure
 - SDS-PAGE and Western Blotting for molecular weight and purity determination
 - Computational prediction of protein structure using AlphaFold, Swiss Model and MATLAB, OriginPro for data analysis
 - Size exclusion chromatography for oligomeric state and molecular weight determination
 - Spectrofluorometry for protein-protein interactions and FRET signal monitoring

Graduate Teaching Assistant

January 2022 - May Present

Department of Chemistry & Biochemistry, Texas Tech University

- Teach general chemistry laboratory courses to approximately 80 undergraduate students
- Lead laboratory experiments and supervise student laboratory activities
- Grade and evaluate student laboratory work and reports
- Instruct students on proper laboratory conduct and safety protocols
- Mentored and instructed undergraduate students in General Biochemistry, facilitating comprehension of complex biochemical concepts
- Led interactive learning sessions incorporating active learning strategies such as problem-solving, peer discussion, and concept-based teaching
- Provided individualized academic support and feedback to enhance student performance
- Mentored and lectured over 50 Lubbock High School students on general biochemistry topics and laboratory techniques, providing exposure to molecular virology research.

Research Fellow

June 2020 - Dec 2021

Bio-medicinal Research Centre, Forestry Research Institute of Nigeria (FRIN)

- Performed isolation, extraction, and separation of bioactive compounds from plant materials
- Conducted phytochemical screening and antioxidant profiling of plant extracts
- Executed nutritional analysis, including proximate analysis, macro/micronutrient determination, and anti-nutrient profiling
- Performed ethnopharmacological assay, including antimicrobial, toxicity, anti-parasitic, and anti-inflammatory testing

Research Fellow

March 2019 - Jun 2020

Biotechnology Research Centre, Forestry Research Institute of Nigeria (FRIN)

- Identified and characterized forest tree species using genetic information
- Conducted DNA extraction, isolation, and sequencing of plant species
- Performed gel electrophoresis of extracted DNA from plant species
- Collected and analyzed data on plant genetic diversity
- Executed mass propagation of plant species through tissue culture techniques
- Prepared plant media (Murashige and Skoog) and cultivated plant specimens

Quality Control Chemist

June - Sep 2014

Bond Chemicals Pharmaceutical Industry

- Performed identification, screening, sampling, testing, analysis, and purification of raw materials and finished pharmaceutical products
- Manufactured drugs by converting raw materials into finished products according to quality standards
- Conducted chemical and microbial tests on drug samples to ensure quality and safety
- Implemented tests to check for cross-contamination to maintain product quality
- Performed weekly physicochemical properties tests on treated and raw water

Graduate Researcher (Master's)

May 2021

Department of Biochemistry, University of Ilorin

Advisor: Prof A.T. Oladiji

- Researched preservation methods and effects of iron fortification of tomato and pepper paste in iron-deficient rats
- Performed a comprehensive proximate analysis on food paste samples
- Conducted microbial analysis to determine the shelf life and safety of fortified food products

Undergraduate Researcher

June 2015

Bowen University

Advisor: Dr. A.S. Tijani

- Assessed the anti-inflammatory effects of the methanol extract of *Chasmanthera dependens* stem in indomethacin-induced gastric ulcer in male Wistar rats
- Performed the extraction and isolation of plant compounds
- Conducted antioxidant activity assessment of plant extracts
- Completed biochemical assays to determine therapeutic effects

RESEARCH PROJECTS AND PRESENTATIONS

- **Center for Membrane Protein Research CMPR XVII Annual Symposium** - Monday, April 27, 2026
Texas Tech University Health Science Center
- **American Chemical Society Fall 2025 Washington, DC** (Aug 17-21) Identifying Ca^{2+} bound calmodulin as a binding partner of the soluble form of HIV1 Vpu protein.

Olamide Ishola¹, Md Majharul Islam¹, Elaheh Hadadianpour¹ Peter P. Borbat², Elka R. Georgieva*¹

- **Center for Membrane Protein Research, CMPR XVI Annual Symposium** (April 3-4, 2025)
Texas Tech University Health Science Center-School of Medicine
The soluble form of HIV-1 Vpu protein interacts with calmodulin in a Ca²⁺-dependent manner
Olamide Ishola, Md Majharul Islam, Elaheh Hadadianpour, Peter P. Borbat, Elka R. Georgieva*
- **American Society for Biochemistry and Molecular Biology, DiscoverBMB 2024** (March 23-26, 2024) San Antonio
Production and reconstitution in lipid nanoparticles of an engineered chimera construct of the Mtb EfpA drug exporter with apolipoprotein
Olamide Ishola#, Adeyemi Ogunbowale#, Md Majharul Islam, Elaheh Hadadianpour, Saman Majeed, Oluwatosin Adetuyi, Elka R. Georgieva*
- **Center for Membrane Protein Research 15th Annual Research Symposium** (November 12, 2023)
Texas Tech University Health Science Center
Production and reconstitution in lipid nanoparticles of an engineered chimera construct of the Mtb EfpA drug exporter with apolipoprotein
Olamide Ishola, Adeyemi Ogunbowale, Md Majharul Islam, Elaheh Hadadianpour, Saman Majeed, Oluwatosin Adetuyi, Elka R. Georgieva
- **Center for Membrane Protein Research 15th Annual Research Symposium** (November 12, 2023)
Texas Tech University Health Science Center
Cryo-Em and EPR with Protein Spin Labeling to Reveal the Structure of HIV-1 VPU
Md Majharul Islam, Saman Majeed, Lan Dang, Peter P. Borbat, **Olamide Ishola**, Steven J. Ludtke, Elka R. Georgieva
- **67th Biophysical Society Annual Meeting** (February 18-22, 2023)
San Diego, California
Cryo-em snapshots and protein spin labeling in structural studies of HIV-1 vpu
Md Majharul Islam, Oluwatosin Adetuyi, Saman Majeed, **Olamide Ishola**, Isaac Forester, Steven J. Ludtke, Elka R. Georgieva
- **Landmark 2022, 56th Annual Conference**
Moringa Oleifera-Cowpea Intercrop, Cost-Benefit Analysis in Sabon-Gari Local Government Area of Kaduna State, Nigeria
O.A Adebisi, N.O Haastrup, M.O. Lawal, E.O Oladipupo-Alade, M.D Oyedele, O.W. Bolaji, O.R Jeminiwa, O.A Aina-Oduntan, **F.O Akanni** and O.O Bolaji
- **14th Annual meeting of the Center for Membrane protein research symposium** (September 12-14, 2022)
Texas Tech University Health Science Center
Negative Staining Electron Microscopy Provides Insight into HTLV-1 P13II Protein Interactions with Lipid Membrane
Md Majharul Islam, Oluwatosin Adetuyi, Lithasha Wickramasinghe, **Olamide Ishola**, Saman Majeed, Elka R. Georgieva
- **32nd Annual International Biotechnology Society Conference** (August 2019)

PUBLICATIONS

1. **Ishola O**, Islam MM, Hadadianpour E, Borbat PP, Ogunbowale A, Amador JCR, et al. The soluble state of the HIV-1 Vpu protein forms a complex with Ca²⁺-calmodulin. *Protein Science*. 2026;35(2): e70487. <https://doi.org/10.1002/pro.70487>
2. **Ishola, O.**, Ogunbowale, A., Abdul-Rahman, E., Starr, K., Zhu, P., Borbat, P. P., & Georgieva, E. R. (2025). CW ESR spectroscopy and protein spin labeling in membrane biology. *Physical Biology*, 23(1), 011001. <https://doi.org/10.1088/1478-3975/ae2db1>

3. **Ishola, O.**, Islam, M. M., Hadadianpour, E., Borbat, P. P., & Georgieva, E. R. (2025). The soluble HIV-1 Vpu protein interacts with calmodulin in a Ca²⁺-dependent manner. *bioRxiv*, 2025-06.
4. Akanni OA, Yakubu IM, Ojorongbe AO, Fijabiyi MO, **Ishola O**, Akanni O. Cervical Cancer Knowledge and Screening Perceptions Among Women in Keffi, Nigeria: A Facility-Based Cross-Sectional Study. *The Nigerian Health Journal* 2025; 25(4): 1525 – 1535. <https://doi.org/10.71637/tnhj.v25i4.1240>
5. Elka R Georgieva, MD, Majharul Islam, Adeyemi Ogunbowale, Saman Majeed, Lan Dang, Peter P Borbat, **Olamide Ishola**, Elaheh Hadadianpour, Arvin S Delkhosh, Juan C Rueda Amador, Steven Ludtke. "BPS2025 - Biophysical approaches to study viral proteins at the cellular membranes." Volume 124, Issue 3, Supplement 1, 547a, (February 13, 2025). [https://www.cell.com/biophysj/abstract/S0006-3495\(24\)03581-1](https://www.cell.com/biophysj/abstract/S0006-3495(24)03581-1)
6. BAMIGBOYE, O. A; **AKANNI, F. O**; ORIPELAYE, O. S; OSAZUWA, D. K; BAMGBOYE, A. M; FADOYIN, A. S; AGBOJE, I.; BAKPOLOR, V. R; LAWAL, M. O; HAASTRUP, N. O; ADELEYE, O. A. (2024). "Profitability Level of Fish Farming In Ife-Ijesa Agricultural Development Programme, Osun State, Nigeria." *J. Appl. Sci. Environ. Manage.* 28 (8) 2287-2293. DOI: <https://dx.doi.org/10.4314/jasem.v28i8.4>
7. Lawal I. O., Sowunmi L I., Olaniyi M. B., Jegede A. E., **Akanni F. O.**, Akinwumi I. A., Babalola O. Y. "Ethnobotany, Chemistry and Toxicity of Petiveria alliacea: A Review." *Functional Food Science* 2024; 4(2): 69-82. DOI: <https://www.doi.org/10.31989/ffs.v4i2.1280>
8. **Ishola, O.**, Ogunbawale, A., ISLAM, M. M., HADADIANPOUR, E., SAMAN, M., Adetuyi, O., & Georgieva, E. (2024). "Abstract 1073 Production and reconstitution in lipid nanoparticles of an engineered chimera construct of the Mtb EfpA drug exporter with apolipoprotein." *Journal of Biological Chemistry*, 300(3).
9. OLASUPO, O. O; ASONIBARE, A. O; BABALOLA, Y. O; AKEREDOLU, O. A; BAMGBOYE, A. M; **AKANNI, F. O**. (2024). "Comparative Reports on Pleurotus Sajor-caju Cultivated on Local Wood Wastes in Ibadan Metropolis, Nigeria." *J. Appl. Sci. Environ. Manage.* 28 (2) 595-601. <https://dx.doi.org/10.4314/jasem.v28i2.33>
10. **Olamide Ishola**, Adeyemi Ogunbowale, Md Majharul Islam, Elaheh Hadadianpour, Saman Majeed, Oluwatosin Adetuyi, Elka R Georgieva. "Protein engineering, production, reconstitution in lipid nanoparticles, and initial characterization of the Mycobacterium tuberculosis EfpA drug exporter." *bioRxiv*, 2023.06.26.546575
11. S Majeed, O Adetuyi, PP Borbat, MM Islam, **O Ishola**, B Zhao, Elka R Georgieva. "Insights into the oligomeric structure of the HIV-1 Vpu protein." *Journal of Structural Biology*, 107943. (2023). <https://doi.org/10.1016/j.jsb.2023.107943>
12. Md Majharul Islam, Oluwatosin Adetuyi, Saman Majeed, **Olamide Ishola**, Isaac Forester, Steven J Ludtke, Elka R Georgieva. "Cryo-EM snapshots and protein spin labeling in structural studies of HIV-1 Vpu." *Biophysical Journal* 122 (3), 52a-53a. (2023). [https://www.cell.com/biophysj/pdf/S0006-3495\(22\)01409-6.pdf](https://www.cell.com/biophysj/pdf/S0006-3495(22)01409-6.pdf)
13. Saman Majeed, Lan Dang, Md Majharul Islam, **Olamide Ishola**, Peter P Borbat, Steven J Ludtke, Elka R Georgieva. "HIV-1 Vpu protein forms stable oligomers in aqueous solution via its transmembrane domain self-association." *bioRxiv*, 2023.05.08.539839. <https://www.biorxiv.org/content/10.1101/2023.05.08.539839v1.abstract>
14. OO Bolaji, **FO Akanni**, NO Haastrup, AO Asonibare, OI Ajao, AA Ogundoyin, JA George-Onaho (2023). "Assessment of Ecological Status and Tree Diversity in Watershed Area of Dandi Local Government Area in Kebbi State, Nigeria." *Journal of Applied Sciences and Environmental Management* 27 (1), 107-113. <https://doi.org/10.4314/jasem.v27i1.16>
15. O.F.J. Awofadeju, I.T. Ademola, J.O. Afolabi, E.O. Oloyede, A.O Oyeleye, **F.O. Akanni**. "Sensory, chemical and nutritional evaluation of flour blends for preparation of stiff dough." (2022). *Journal of Agriculture, Forestry and the Social Sciences* 18(2), 22-34. <https://doi.org/10.4314/joafss.v18i2.3>

16. R.I. Oyediran, J.O. Afolabi, D.B. Olomola and **F.O. Akanni**. (2021). "Mass Propagation of *Nauclea diderrichii* (de Willd. & Th. Dur) Merr. Seedlings through Tissue Culture Technique." *Plant Tissue Cult. & Biotech.* 31(1): 51-60. <https://doi.org/10.3329/ptcb.v31i1.54111>
17. Sowunmi L. Ifeanyichukwu, Elizabeth A. Ogidan, Omowunmi A. Idowu, Oyinkansade Y. Babalola, Anne A. Adam, Temitope O. Omogbene, Basirat O. Rafiu, **Funmilola O. Akanni**, Ayokunmi O. Oyeleye, Toluope F. Okanlawon, Musbau B. Olaniyi, Rofiat I. Oyediran and Ibraheem O. Lawal (2021). "A Review on the Diverse Uses, Conservation Measures and Agronomic Aspect of *Aloe vera* (L.) Burm.f." **32(9): 39-51, 2021; Article no.EJMP.73989** DOI: 10.9734/EJMP/2021/v32i930417
18. Joel, I.Y, Adigun, T.O, Bankole, O.O, Mohammed, A.I, Abel-Jack, S.T, Ani, O. G, Olapade, E.O, Dada, M.F, Adetiwa, O.M, Ofeniforo, E.B and **Akanni, F.O**. "Insights into Features and lead optimization of novel Type 1½ inhibitors of p38α mitogen-activated protein kinase using QSAR, quantum mechanics, bioisostere replacement, and ADMET studies." *Results in Chemistry.* 2020; 2: 100051. <https://doi.org/10.1016/j.rechem.2020.100044>
19. Adegboyega, D.A, Akala, A.O, **Akanni, F.O**, Ademuwagun, A.A, Olatunji, A.O and Eniola, O. (2020). "Pesticides: Physiological Effects on Soil MicroFlora." *International Journal of Agriculture, Environment, and Bioresearch.* Vol 5, No. 05. 2456-8643. <https://doi.org/10.35410/IJAEB.2020.5550>
20. Akala, A.O., Adegboyega, DA., Olatunji, A.O., Kolawole, I.O., Edet, S.E., Oloyede, E.O and **Akanni, F.O**. (2020). "Isolation, Characterization, and Identification of Bacteria on Two Selected medicinal plants." Vol 5, No. 05. 2456-8643. <https://doi.org/10.35410/IJAEB.2020.5551>
21. SO Bankole, MB Oyedeji, **FO Akanni**, EP Chukwudebe, AO Olatunji, OS Ariwoola. "Bacteria Associated with Petroleum Hydrocarbon Contaminated Soil from NNPC Depot." (2020). *Journal of Advances in Microbiology* 20 (6), 77-82. <https://doi.org/10.9734/jamb/2020/v20i630257>

AWARDS & HONORS

- Outstanding Teaching Assistant Award in General Chemistry, Department of Chemistry and Biochemistry, Texas Tech University (2026)
- Graduate Student Research Support Award, Texas Tech University (2026)
- American Chemical Society (ACS) Student Travel Award Division of Biochemistry and Chemical Biology (2025)
- American Society for Biochemistry and Molecular Biology (ASBMB) Graduate Student Diversity, Equity, and Inclusion Travel Award (2024)

PROFESSIONAL CERTIFICATIONS & MEMBERSHIP

- American Chemical Society (ACS) (2025)
- American Society for Biochemistry and Molecular Biology (ASBMB) (2023)

ADDITIONAL SKILLS

- Strong scientific research methodology
- Effective written and verbal communication
- Exceptional organizational skills with attention to detail
- Interdisciplinary research and problem-solving capabilities
- Laboratory management and protocol development
- Data analysis and interpretation
- Technical writing for scientific publications
- Scientific presentation development and delivery
- Collaborative research experience

REFERENCES

- **Dr. Elka Georgieva** | Assistant Professor, Texas Tech University | elgeorgi@ttu.edu
- **Dr. Adam Smith** | Professor, Texas Tech University | AW.Smith@ttu.edu
- **Dr. Saman Majeed** | Assistant Professor, University of North Carolina Asheville | smajeed@unca.edu