

CHIOMAH HEPHZIBAH (QUEENETTE) EZEOMAH
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New York, New York

EDUCATION

Cornell University, Weill Cornell Graduate School of Medical Sciences

- Masters of Science – Biostatistics and Data Science (In View)

University at Buffalo, The State University of New York

- Bachelor of Arts, Mathematics-Economics with Honors and Distinction (Magna Cum Laude); Bachelor of Science, Biological Sciences with Honors (Magna Cum Laude); University Honors Scholar with Thesis
- Overall GPA: 3.634/4.00

RESEARCH EXPERIENCE

April 2018 – September 2019 **Research Project Coordinator – University of Texas Medical Branch, Department of Pathology, Galveston National Laboratory and Lab Manager – Cisneros Lab**

Translational Research:

1. **Sequelae of Lassa Fever - Post Viral Cerebellar Ataxia:** Review paper submitted to Open Forum Infectious Diseases Journal. Authors: Chiomah Ezeomah Adeyi Adoga, Chikwe Ihekweazu, Slobodan Paessler, Irma Cisneros, Oyewale Tomori, David Walker.
2. **Case-Control Study of the Association of Lassa virus exposure and hearing loss (manuscript being prepared):** Performed a case-controlled study to investigate the association between Lassa virus infection and hearing loss in patients with partial or complete hearing impairment at the Jos University Teaching Hospital (JUTH). Faculty Sponsor: Prof. David Walker; Nigerian supervising authors: Prof. Oyewale Tomori, Prof. Adeyi Adoga (Head of the Otorhinolaryngology Department at JUTH).
3. **Fentanyl Self-Administration Impacts Brain-Specific Immune Responses in Male Sprague-Dawley Rats (manuscript being finalized for submission to scientific journal):** Was responsible for RNA extraction, cDNA preparation, protein extraction and quantification, gene expression assays using quantitative real-time polymerase chain reaction technology, western blot assays. Helped with data analysis and manuscript preparation.
4. **Characterizing the Effects of Cocaine on Mitochondrial Antiviral Signaling Protein (MAVS) and Stimulator of Interferon Genes (STING) in HIV transgenic rats (Manuscript being Prepared):** Was responsible for the gene expression assays using quantitative polymerase chain reaction (qPCR) technology and western blot assays including RNA extraction, cDNA preparation, protein extraction and quantification, in addition to data analysis.
5. **Validation of Novel Assays for Detecting Lassa Virus Antigen:** Designed novel primers for detecting Lassa virus in human whole blood/plasma/serum samples using Reverse Transcription Polymerase Chain Reaction. Responsible for designing the assay, getting ethical clearance for the study from the relevant Institutional Review Boards and also traveling to Nigeria to acquire deidentified samples from patients and preparing for the validation studies.

OTHER RESPONSIBILITIES:

1. **Study Coordinator:** Worked as the study coordinator for the human studies of the NIH funded study: Sequelae of Lassa fever awarded to conduct human studies (Nigeria) and animal studies at the Galveston National Laboratory. In this role, was responsible for writing IRB protocols,

preparing SOPs & other supporting study materials, training laboratory personnel in Nigeria on detection of Lassa virus in biological samples, setting up laboratory operations in Nigeria for the detection of Lassa fever cases and supporting the Principal Investigators.

2. **Liaison:** Served as a liaison between the Galveston National Laboratory and research institutions and hospitals in Nigeria like the Jos University Teaching Hospital, Bingham University Teaching Hospital, the Nigerian Center for Disease Control, the Irrua Specialist Teaching Hospital and the Institute of Human Virology, Nigeria. Facilitated the sharing of biological samples and controls for testing of Zika, Dengue, Yellow fever and Lassa viruses in biological samples.

July 2017 – April 2018 **Research Associate I – University of Texas Medical Branch, Department of Pathology, Galveston National Laboratory**

- Translational Research:
 1. **Field Collection of Mosquitoes from Nigeria and Lake Flies from Uganda:** Field collection of mosquitoes from Nigeria to study what potential viruses are present in the mosquito samples collected from Nigeria. Samples were collected from 3 states in Nigeria. Field collection of Lake flies (*Chaoborus edulis*) from Uganda to study the potential viruses that are present in Lake flies. A related species *Chaoborus trivittatus* was found to have novel Bunyavirus-like viruses. *Chaoborus edulis* is eaten in some East African countries this motivated this study. The viruses found in these samples will be deposited at the World Reference Center for Emerging Viruses and Arboviruses headed by Prof. Scott Weaver (project sponsor).
 2. **Lassa Glycoprotein Precursor Complex (GPC) Study:** Helped in a study to attenuate the Lassa virus, increase its immunogenicity and develop a vaccine candidate. Was responsible for created mutants of Lassa virus GPC genes for this study.
 3. **The glycoprotein of the live-attenuated Junin virus vaccine strain induces ER stress and forms aggregates prior to degradation in the lysosome (submitted to Journal of Virology):** Helped in a study to characterize the vaccine GPC (Candid vaccine) in order to link removal of N-Linked glycans to attenuation. Authors: John Manning, Nadya Yun, Alexey Seregin, Takaaki Koma, Rachel Sattler, **Chiomah Ezeomah**, Cheng Huang, Juan de la Torre, and Slobodan Paessler
 4. **Flu Study:** Helped in a study testing adenovirus based flu vaccines in both mice and ferret models of flu infection.
- BSL 2, BSL 3, ABSL 2 and ABSL3 trained, BSL4 training commenced.
- **Technical Skills:** Agents worked with include – **Influenza, Lassa virus, Zika virus, Yellow fever virus** and **Junin virus**. **In vitro laboratory techniques** include – virus titrations, plaque assays, plaque reduction neutralization test (PRNT), cell culture maintenance, neutralization assay, virus stock preparation, molecular cloning, site directed mutagenesis, DNA, RNA and protein extraction, real-time qPCR, conventional PCR, conventional western blotting and western blotting using the Simple Wes, immunohistochemistry, hematoxylin and Eosin staining, conventional microscopy, transmission electron microscopy sample preparation and photography using Philips C100 transmission electron microscope and rat brain sectioning using Leica CM3050S Cryostat, and Enzyme Linked Immunosorbent Assay (ELISA). **Animal experience** with mouse, guinea pigs, ferrets and rats. **Animal techniques** include – subcutaneous, intraperitoneal, intramuscular and intranasal injections; retroorbital, cardiac puncture, and vena cava bleeds; inhalational and injectable anesthesia administration; euthanasia and necropsy with tissue collection.

ABSTRACTS & PRELIMINARY COMMUNICATIONS:

1. **Ezeomah C**, Manning JT, Paessler S, Taylor D, Badzioch B. Phylogenetic Analysis of 68 Strains of Lassa Virus (LASV) Samples Collected from 1969-2012 from Nigeria using the JTT Model. University at Buffalo Biological Sciences Honors Symposium, 2017, Buffalo, New York.
2. **Ezeomah C**, Manning JT, Paessler S, Taylor D, Badzioch B. Phylogenetic Analysis of 68 Strains of Lassa Virus (LASV) Samples Collected from 1969-2012 from Nigeria using the JTT Model. University of Texas Medical Branch, McLaughlin Colloquium, 2018, Galveston, Texas.
3. **Ezeomah C**, Muoebounam E, Ikponmwonsa O, Oyebanji O, Cisneros I, Manning T, Asogun D, Ihekweazu C, Tomori O, Paessler S. Economics, Agriculture and the 2018 Lassa Fever Outbreak in Nigeria. University of Texas Medical Branch, Pathology Research Day, 2018, Galveston, Texas.

Undergraduate Research Assistant (March 2016 – February 2017), College of Arts and Sciences, Department of Biological Sciences – SUNY at Buffalo

- Performed phylogenetic analysis of the Lassa fever virus (LASV) over a 38 year period to confirm that Nigerian lineages were divided based on geographical regions in Nigeria as part of honors requirement for Biological Sciences Department, Mathematics Department and Honors College of The State University of New York at Buffalo.
- Managed the collection of *Chaoborus edulis* from Uganda to investigate the likelihood of viral genome being present in lake flies from East Africa.
- Modified Biopython code to interact with NCBI to perform blast searches and extract desired results based on preset parameters.

Undergraduate Research Assistant (Summer 2005), College of Arts and Sciences, Department of Biological Sciences – SUNY at Buffalo

- Helped generate the G6 mutant which was used by Thomas J. Lampert, Kevin D. Coleman, Todd M. Hennessey in researching G-Protein activity and chemoattraction in *Tetrahymena* which led to the publication: "*A Knockout Mutation of a Constitutive GPCR in Tetrahymena Decreases Both G-Protein Activity and Chemoattraction*" by Thomas J. Lampert, Kevin D. Coleman and Todd M. Hennessey in 2011. Funding for this research work was provided by the U.S. National Science Foundation (NSF) – grant number: MCB-0445362 – to Todd M. Hennessey.

Undergraduate Research Assistant (Summer 2003), School of Medicine, SUNY at Buffalo

- Helped generate mutant genes of voltage gated potassium channels in rat (heart) cells thought to be identical to the voltage gated potassium channels in human beings that has been closely linked with Arrhythmia (especially in athletes).
- Worked under the supervision of Prof. Morales to implement protocol for experiments..
- Worked under minimal supervision and with minimal training.

VOLUNTEER EXPERIENCE

- **Volunteer – Jos University Teaching Hospital (JUTH), Jos, Plateau State, Nigeria
February – April 2017**
Volunteered at the Jos University Teaching Hospital. Worked with scientists and physicians in hospitals in Nigeria and the principal investigator at UTMB to prepare documentation for the grant application for the study: Sequelae of Lassa fever study which eventually got funded by the NIH.
- **Volunteer – University of Texas Medical Branch
August 2017 – November 2017**
Volunteered at the Pediatric Urgent Care clinic in Galveston and the Emergency room. At the

Emergency Room, I help at the front desk and serve as a guide to lead patients to their loved ones admitted at the ER.

EXPERIENCE

February 2009 – 2016 **The Know Place Nigeria** Abuja/Lagos/Port Harcourt Nigeria

Founder/ Managing Director/ Head Tutor

- Developed business strategy, growth and development plan.
- Tutored mathematics, English, Chemistry
- Grew customer base and won sales opportunities with several leading schools in Nigeria.
- Won Consultancy position with Abuja Capital International College to drive its 2010/2011 marketing campaign in Lagos, Abuja and Port Harcourt.
- Won Federal Ministry of Finance (FMF) grant for SMEs through the YouWin! Business Plan competition organized by the Nigerian Federal Ministry of Finance in collaboration with the World Bank, and the UK's Department for International Development (DFID).
- Won strategic partnership with The Princeton Review (TPR). The Know Place was the exclusive licensee for in-class and online SAT, GRE, GMAT courses in Nigeria until 2016.
- Grew revenues by over 600% in 4 years by marketing aggressively and expanding branch network.
- Grew branch network by 200% by opening 2 new branches in Lagos and Port Harcourt, Nigeria.

June 2008– September 2009 **PointCare Technologies Inc** Marlborough, MA, United States

Country (Sales) Director, Nigeria

- Increased sales in the Niger-Delta area of Nigeria in 5 months by establishing and maintaining working contact and exerting positive influence with government and multinational leaders in the health sector.
- Increased customer base in Nigeria by 50% by developing and implementing territory business plan with detailed business activity plans for distributors and key accounts.
- Maintained a professional and open relationship with customers and product end-users that encouraged information sharing which led to improvements in service and sales deliveries.
- Utilized strong leadership, motivational and customer care skills that helped reverse the previous year's declining revenue trend and led to a 240% increase in active PointCare NOW CD4 testing sites throughout the country which directly translated into more sales.
- Possessed leading marketing and business development skills that led to a rapid increase in sales opportunities. Major client portfolios managed include: Shell Petroleum Development Corporation of Nigeria (SPDC)'s Corporate Community Health, Bayelsa State Government of Nigeria, Catholic Relief Services.
- Responsible for communicating and solving problems arising from the marketing and sales of PointCare products within the assigned territory.
- Responsible for all major contract negotiations and renewals with State Ministries of Health and corporate decision makers.
- Led and implemented end user clinical and instrument training in all the new PointCare NOW CD4 testing sites in the Niger-Delta area of Nigeria which led to increased reagent sales in the region.

March 2004 – December 2004 **U.S. Embassy (Educational Advising Center)** Abuja, Nigeria

Educational Advising Intern

- Advised and mentored students interested in studying in the US
- Implemented training and development sessions for students on a regular basis which helped improve their test taking and interview skills and prepared them for life in US Universities.

August 2015 – May 2016 **University at Buffalo, The State University of New York at Buffalo**
Secretary - Creekside and Flickinger Village Council (Residence Halls Association)

- Took minutes of village council meetings.
- Helped organize programs for Creekside and Flickinger apartment complex residents to help foster a healthy community.

AWARDS AND HONORS

- Dean's list (SUNY Buffalo), Fall 2002 and Spring 2003, Spring 2016
- National Deans list (USA), 2003/2004
- Phi Eta Sigma, National Freshman Honor Society, 2002/2003
- Alpha Epsilon Delta, Pre-Health Honor Society, 2004/2005
- Listed on Who's Who among Students in American Universities and Colleges, 2006
- Won Diamond Bank's Scholarship to attend the 2013 Certificate in Entrepreneurship Management (CEM) Course organized by the Enterprise Development Center of Pan-Atlantic University. 2013.
- Ranked amongst top 3% of Executives in the Education Sector (Nigeria) by The Top Executives Publications & Ranking. 2015
- Won Reichbach Memorial Scholarship. 2015, 2016.
- Won Harry Merrill Gehman Scholarship (University at Buffalo Mathematics Department Award): The Gehman scholarship is awarded to one or more mathematics majors who have demonstrated an interest in teaching.
- Member – Golden Key Honor Society
- Named 2017 Graduating Department Representative for the University at Buffalo Biological Sciences Department Convocation: Delivered a speech at the department's convocation to the graduating class of 2017.

SOFTWARE

- Microsoft Office 2016: MS Excel, MS Word, MS PowerPoint, MS Publisher, Outlook express
- Adobe Illustrator

LANGUAGES

- Python, Biopython, beginner R programmer and beginner SAS programmer

UNDERGRADUATE RESEARCH THESIS

Phylogenetic Analysis of 68 Strains of Lassa Virus (LASV) Samples Collected from 1969-2012 from Nigeria using the JTT Model

MEMBERSHIP OF PROFESSIONAL BODIES

- Member, American Society of Virology
- Member, American Society for the Advancement of Science
- Member, American Society of Tropical Medicine and Hygiene