

# Carolyn Damilola Ekpruke

[carolyn\\_ekpruke@taylor.edu](mailto:carolyn_ekpruke@taylor.edu)

[linkedin.com/in/carolyn-damilola-e-42359116b](https://www.linkedin.com/in/carolyn-damilola-e-42359116b)

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## SUMMARY OF QUALIFICATIONS

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### a. Research

A Human Physiologist, with over sixteen years of research experience in various systems including cardiovascular, endocrinology, and respiratory system research with twenty-three publications and an additional one under review. My research interests include lung biology, identifying mediators of sex differences in respiratory system diseases, and investigating sex disparities in lung diseases to elucidate the mechanisms involved. I have experience collaborating with diverse internal and external partners and stakeholders across different jurisdictions. The American Physiological Society-Physiological Genomics section awarded me an Excellence in Research award in April 2024, the usha award in March 2025, and one of my publications was selected for distinction in the journal's February 2024 edition. Also, I am a recipient of the research grant awarded by the Indiana Clinical and Translational Science Institute for winning the Postdoc \$5000 grant writing challenge in 2023.

### b. Teaching

As a member of the Board of Studies, I have over ten years of experience teaching Physiology and research methodology courses in the Department of Physiology, School of Basic Medical Sciences, University of Benin, Nigeria, and the Institute of Health Technology, University of Benin Teaching Hospital, Nigeria. In these institutions, I helped to develop physiology course curricula and taught these courses to undergraduates and graduate students ranging an average of over 700 students of Medicine, Nursing, Physiology, Anatomy, Medical Biochemistry, Medical Laboratory Science, Physiotherapy, Optometry, Pharmacy, and Radiology majors. I have also taught a graduate class alongside my supervisor on research methodology and continue to participate in mentoring both undergraduate and graduate students at the Indiana University School of Public Health Bloomington, USA. These extensive skills make me a competitive candidate and give me an edge in teaching students.

### c. Service

Over three years of experience serving as a course advisor, transcript officer, nursing program director, and research coordinator at the Department of Physiology, University of Benin, Nigeria. Also, I have two years of experience supporting Monroe County Community School Cooperation organizing programs to educate girls about STEM courses and serving as a poster judge on research days organized by the Center of Excellence for Women in Science in Indiana University Bloomington for two years.

### d. Professional Experience

Elected member of the International Committee at the American Physiological Society for a three-year term, to help foster relationships between the society and other Physiological Societies worldwide. I have been a reviewer for the American Physiological Journals for two years and have reviewed six manuscripts. I am also a member of the grant committee for the Cystic Fibrosis Foundation

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## CURRENT POSITION

### Tenure-track Assistant Professor of Biology,

Department of Biology, Environmental Science, & Sustainable Development.  
Taylor University-School of Natural and Applied Science

UPLAND, INDIANA, USA

February 2026

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## EDUCATION

### a. University of Benin, School of Basic Medical Science

*Doctor of Philosophy* in Human Physiology (Cardiorespiratory system)

Thesis: Impact of Emissions from a Gas Turbine on Some Hematological Parameters and Cardiorespiratory Functions of Workers of Power Generating Stations in South-South of Nigeria.

EDO STATE, NIGERIA

May 2017

Advisor: Professor V. I Iyawe (Provost, College of Medical Sciences, University of Benin, Nigeria)

Departmental Chair: Professor O. Ajayi (Department of Physiology, University of Benin, Nigeria)

**b. University of Benin, School of Basic Medical Sciences**

EDO STATE, NIGERIA

*Master of Science in Human Physiology (Endocrinology)*

February 2012

Thesis: The Effect of Ingestion of Different Cassava Components on Blood Glucose Levels and Serum Testosterone of Male Wistar Rats

Advisor/Departmental Chair: Professor M. I. Ebomoyi (Department of Physiology, University of Benin, Nigeria)

**c. University of Ilorin, Faculty of Basic Medical Sciences**

KWARA STATE, NIGERIA

*Bachelor of Science in Human Physiology (Cardiovascular System)*

February 2007

Thesis: Cardiovascular System Response to Cold Pressor Test During Menstrual Cycle

Advisor/Departmental Chair: Professor A. Olatunji (Department of Physiology, University of Ilorin, Nigeria)

## RESEARCH EXPERIENCE

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**a. Indiana University - School of Public Health.**

BLOOMINGTON, IN

*Postdoctoral fellow*

November 2021–December 2025

- Support and coordinate research activities of NIH-funded projects related to the role of sex hormones and gut microbiome in allergic airway inflammation using animal models. These projects attempt to unveil sex-specific mechanisms that can contribute to the development of novel sex-specific therapeutics to reduce sex disparities that occur in asthma.
- Acting as Lead in writing manuscripts from our findings for publications in scientific journals. These were published in reputable journals including the American Physiological Society Journals and Frontiers in Allergy Journal, and one of my first-authored manuscripts was selected for the **Excellence in Research award** by the Physiological Genomics group of the American Physiological Society during the 2024 conference.
- Received a grant awarded \$5,000 by the Indiana Clinical and Translational Sciences Institute for core facility access to create a path for my research projects. This project investigated the impact of a ketogenic diet on the recruitment of immune cells to the lungs in allergic airway inflammation to provide dietary intervention that could complement the treatment of asthma.
- Support and coordinate two graduate student projects. One of which attempts to reveal the phenotypic effect of sex chromosomes versus the sex hormones in lung cancer and the other investigated the sex-specific contributions of the lung-gut axis microbiome to allergic airway inflammation. My strong research background will enhance distinctive strategic collaboration with established experts within the Institution.

**b. University of Benin**

EDO STATE, NIGERIA

*Faculty Member in the Department of Physiology*

May 2017 – June 2022

- Designed, supervised, and graded scientific projects for 10 undergraduates. One of the project groups studied the effect of antioxidants and exercise on improving respiratory system disease outcomes after exposure to allergens (mosquito repellent). At the same time, the other investigated the impact of high and low-fat diets on allergic airway diseases using an animal model.

*Laboratory Technologist in the Department of Physiology*

March 2012-May 2017

- Demonstrated basic physiology experiments to a class of 700 Undergraduates: Anatomy Majors, Physiology Majors, Pharmacy Majors, Optometry Majors, Medical Biochemistry Majors, Physiotherapy Majors, Radiography Majors, Medical Laboratory Science Majors, Nursing Majors, Medicine, and Dentistry Majors and supported them in carrying out their research projects.

*Research Assistant in the Department of Mental Health*

February 2008- April 2009

- Coordinated and executed research activities, under the supervision of Professor KO Akhigbe, in a study on how stigmatization affects mental health patients. We collected data and did community education among residents of Benin City in Nigeria on the danger of stigmatization of mental health patients.

## TEACHING EXPERIENCE

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**a. University of Benin School of Basic Medical Sciences**

EDO STATE, NIGERIA

*Faculty Member*

May 2017 – October 2021

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- Developed the Physiology of Special Senses course structure and instructional materials. Taught the course to Pharmacy, Optometry, and Nursing major undergraduates, a total of 600 students.
- Taught Animal experimentation and research methodology (PHS 320) to Medical Laboratory Science, Physiology, and Anatomy major undergraduates, a total of 240 students.

*Laboratory Technologist*

- Designed the Physiology laboratory courses (PHS 206 & 215) and demonstrated basic physiology experiments to Anatomy, Physiology, Pharmacy, Optometry, Medical Biochemistry, Physiotherapy, Radiography, Medical Laboratory Science, Nursing, Medicine, and Dentistry Majors, a total of 750 students.

**b. University of Benin Teaching Hospital Institute of Health Technology**

EDO STATE, NIGERIA

*Physiology lecturer*

February 2008 – October 2011

- Developed Human Physiology course structure and instruction materials for the different trainings in the institution, including paramedics, environmental science, and pharmacy technician training.
- Taught cardiovascular, respiratory, nervous, endocrinology, and gastrointestinal system physiology to the 270 students in the six programs/training run by the institution.

**MENTORING EXPERIENCE**

**a. Indiana University, School of Public Health**

BLOOMINGTON, IN

*Postdoctoral Fellow*

November 2021 – Present

- Engage in mentoring graduates and undergraduate students, two graduates in the Master of Sciences in Public Health program, one in the Doctor of Philosophy in Environmental Science and Occupational Health program, and two undergraduates in the Predoctoral program.

**b. University of Benin School of Basic Medical Sciences**

EDO STATE, NIGERIA

*Faculty Member (Senior Lecturer)*

May 2017 – October 2021

- Engaged in mentoring graduates and undergraduate students. As a course advisor for three consecutive school years (2018-2021), co-mentored three graduates and several undergraduates. All graduates successfully finished their Doctor of Philosophy in Human Physiology program and are employed in different colleges in Nigeria as faculty members. Mentees were the best graduating students in the Department of Physiology in the 2020 and 2022 school years and are currently in graduate programs in Human Physiology. Adewole Joel was the best-graduating student in the 2020 session while Favour Obodo was the best-graduating student in the 2022. Both students have enrolled in a graduate program in the same department.

**PROFESSIONAL EXPERIENCE**

**a. American Physiological Society Conference**

NEW ORLEANS, LA

*Chairing Scientific Session at the New trends in Sex differences and Women's Health Research Conference.*

October 2025

- Session Chair, *Session 1: "Cardiovascular Risk and Women's Health Across the Lifespan,"* Sex Differences and Women's Health Research Conference, Tulane University, New Orleans, LA (October 24, 2025).

**b. American Physiological Society (APS)**

ROCKVILLE, MD

*Chairing Scientific session at 2025 APS Summit*

April 2025

- Led the submission of an approved proposal titled "Chromosomal contributions to cardiopulmonary and neurological disease" for a scientific session symposium at the 2025 APS summit.
- Approved to be a speaker at the APS 2025 summit on the Sex Chromosome Associations with Asthma Phenotypes: The Role of the Microbiome
- Abstract titled Influence of sex chromosomes and gonadal sex on immune responses following allergen exposure was accepted for oral presentation by the Sex and Gender subgroup of APS and was given an abstract distinction award

*Member of International Committee*

April 2024 – April 2027

- Engage in discussions that help to protect the interests of non-US members of the society.
- Ensure that international members are well-informed about the opportunities available in the society.

- Facilitate the participation of international members of the society in meetings and leadership.
- Forge deeper relationships with other physiology societies worldwide.

*APS journal Reviewer*

January 2023 – Present

- Review scientific journals that are sent to any of the APS journals for publication. Successfully reviewed four papers for second review submission and served as a primary reviewer for two other papers submitted to APS journals.

**c. Frontiers in Public Health**

July 2024

- Served as a first reviewer for two manuscripts submitted to the frontiers in public health journal.

**d. Czech Science Foundation**

EVROPSKÁ, CZECH REPUBLIC

*Grant Reviewer*

August 2023

- Reviewed a biomedical project proposal submitted to this foundation. The project aimed to invert a mixture of toxicology models for environmental endocrine disruptors.

**e. Scientific reports**

November 2024

- Served as a first reviewer for a manuscript submitted to the journal of Scientific reports

**f. Cystic Fibrosis Foundation**

BETHESDA, MARYLAND

*Reviewer committee member*

June 2024-Present

- Reviewed a project proposal submitted to the foundation. The project was for \$800,000 .
- Reviewed four full proposal applications for more than \$1 million grants submitted to the foundation.
- Served as a Primary reviewed for two, secondary reviewer for one and a tertiary reviewer for one.

**ADMINISTRATIVE EXPERIENCE**

**a. University of Benin School of Basic Medical Sciences**

EDO STATE, NIGERIA

*Departmental Research Director*

May 2017 – October 2021

- Organized research presentations in the Department of Physiology and appointed project/seminar supervisors to third-year and fourth-year undergraduate students, a total of 250 students each year.
- Reviewed student presentations and thereafter fixed the date for departmental presentations.
- Developed literature review courses on how to write a good review and report your research.
- Taught the course to third-year and fourth-year students for three academic years, a total of 250 students.

*Course Advisor (first-year to third-year) Undergraduates*

March 2018 – October 2021

- Advised and guided undergraduate students, 150 in total (class of 2022 Physiology Majors), on the selection of courses (main/major and elective courses) in the department.
- Registered students' courses every year.
- Collated all the grades/scores of all the students from the different courses, both major and elective, that they do every semester.
- Presented the results every semester to the school board of studies for approval or amendment.
- Made the results available to students every semester.
- Advocated for students in every area of their studies.

*Nursing Program Director (Physiology courses)*

May 2017– March 2018

- Represented the Department of Physiology in the Department of Nursing.
- Organized and coordinated all the Physiology courses/programs in the Department of Nursing,
- Organized Physiology course examinations in the Nursing Department
- Collated and presented results for all Physiology courses taken by the Nursing majors in the School of Basic Medical Sciences, University of Benin, Nigeria to the School Board of Studies for approval.

*Department of Physiology Transcript Officer*

March 2018 – October 2021

- Prepared the results of students who graduated from the Department of Physiology, School of Basic Medical Sciences, University of Benin, Nigeria for Exams and Record Department of the University.

All these professional and administrative experiences make me a very resourceful asset.

## VOLUNTEER/COMMUNITY SERVICES

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- a. Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS)** PITTSBURGH, PA  
*Judge Travel Award* November 13-16, 2024
- Reviewed 27 travel award applications submitted to the association.
  - Scored graduate and undergraduate posters.
  - Moderated scientific sessions and graduate student oral presentations
- b. Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS).** SANTA CRUZ, CA  
*Abstract reviewer* July 2024 – Present
- Scored 15 abstracts from the total number submitted to the association for the Abstract Award.
- c. Indiana University Center of Excellence for Women in Science** BLOOMINGTON, IN  
*Poster judge* April 2023 – Present
- Organized research days among undergraduates and Graduate women doing STEM courses in the various departments of the University.
  - Scored posters submitted for the presentation competition among participants.
- d. Monroe County Community School Corporation** BLOOMINGTON, IN  
*Program organizer* March 2023 – Present
- Organized (setting up) the program venue for the Girls in Engineering, Mathematics, and Sciences (GEMS) program.
  - Serve as a co-educator in the GEMS program where we educate elementary girls annually (10 in each group) about the different STEM fields they can explore.
- e. City of Bloomington Parks and Recreation** BLOOMINGTON, IN  
*Program organizer* April 2024
- Coordinated the Children’s expo program organized in the community.
- f. American Physiological Society, Respiration Section** ROCKVILLE, MD  
*Poster organizer* April 2024
- My team of three organized all the posters submitted to the section during the conference.
  - Assigned the posters to different group reviewers, collating all the scores awarded to each poster.
- Proposal reviewer* June 2024
- Reviewed twenty-five proposals submitted to the group for approval for the 2025 conference.
- g. Department of Biology, Indiana University Bloomington** BLOOMINGTON, IN  
*Flow cytometry Station volunteer* October 2022
- Educated K-12 grade kids about the flow cytometer, including the importance and how to operate the machine at the Science Fest program organized by the Department.

## LICENSES AND CERTIFICATIONS

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- a. American Physiological Society Reviewer Certificate Program** 2023
- b. NIH Recombinant DNA Guidelines** (Credential ID: 45377486) October 2021
- b. IUEHS Safety and Health for Animal Users Training** (Credential ID: 45377487) September 2021
- C. Working with Mice in Research** (Credential ID: 45377485) September 2021
- d. Working with the IACUC- Investigator, Staff, and Students** (Credential ID: 45377483) October 2021
- e. IUEHS Bloodborne Pathogen Training** (Credential ID: 50175741) October 2022

## SKILLS

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- Project/Program management
- Proficient in the use/operation of laboratory equipment such as FlexiVent (mechanical ventilator) and Flow cytometer

- Laboratory management
- Public Health-related research
- University Teaching
- Bilingual: Yoruba and English
- Science Communication
- Proficient in quantitative and qualitative data collection, management, analysis and interpretation
- Extensive use of MS Word, Excel, PowerPoint, IBM SPSS and Graphpad Statistical software
- Quantitative and qualitative methods
- Research with animal and human subjects
- Grant and manuscript writing

## HONORS AND AWARDS

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- Martin Frank Diversity Travel Award* October 2025  
**American Physiological Society** NEW ORLEANS, LA
- \$1500 scholarship to support travel related to attendance of the New trends in Sex differences and Women's Health Research Conference.
- Usha Award* April 2025  
**American Physiological Society-Respiration section** BALTIMORE, MD
- Awarded in recognition of outstanding contributions to respiratory physiology research
  - Award included: Certificate of recognition, \$500 award, Reimbursement of early registration fee for the American Physiology Summit, Complimentary ticket to the Respiration Section banquet.
- Abstract of Distinction Award* April 2025  
**American Physiological Society-Sex and Gender section** BALTIMORE, MD
- Awarded in recognition of outstanding abstract submitted to Sex and Gender interest group of the APS.
  - Did an oral presentation at the Sex Differences on a continuum session during APS2025 summit
- Judge Travel Award* November 2024  
**Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS)** PITTSBURGH, PA
- \$1,500 Travel Stipend to assist with the cost of travel.
  - Served as a reviewer for the ABRCMS Student Travel Award Program.
  - Served as a Judge during poster sessions.
- Best Poster presenter award* October, 2024  
**Indiana University Pediatric/Adult Pulmonary and Pulmonary/Chronic Care Management Services Research and Scholarship Day** INDIANAPOLIS, IN
- Presented a poster on Sex-specific anti-inflammatory effects of a ketogenic diet in a mouse model of allergic airway inflammation.
- Excellence in Research Award* April 2024  
**American Physiological Society, Physiological Genomics Section** SAN DIEGO, CA
- This award included a \$250 gift and was given for the high-quality research submitted to the journal for publication.
- APSelect article* February 2024  
**American Physiological Society, Physiological Genomics Section** ROCKVILLE, MD
- A manuscript I took the lead to write after coordinating the research was selected as the *APSelect*, an award given to the best well-conducted research and well-written manuscript for a particular volume of the journal.
  - The manuscript was titled: **Ekpruke CD**, Alford R, Rousselle D, Babayev M, Sharma S, Commodore S, Buechlein A, Rusch DB, Silveyra P. Transcriptomics analysis of allergen-induced inflammatory gene expression in the Four-Core Genotype

mouse model. *Physiol. Genomics*. 2024 Feb 1;56(2):235-245. doi: 10.1152/physiolgenomics.00112.2023. Epub 2023 Dec 4. PMID: 38047309.

*Editorial Fellow*

January 2023-January 2024

**American Journal of Physiology- Lung Cellular and Molecular Physiology section**

ROCKVILLE, MD

- Trained for one year to review manuscripts submitted to the journal under the supervision of Prof. Susan Gunst.

*Winner of the Clinical and Translational Sciences Institute (CTSI) Postdoc Challenge*

June 2023-July 2024

**Indiana Clinical and Translational Sciences Institute**

INDIANAPOLIS, IN

- This award involved the writing of a good proposal.
- Proposed the use of a ketogenic diet to complement the treatment of asthma.
- Awarded a \$5000 grant to access the flow cytometry core facility at Indiana University Bloomington to analyze immune cells in response to the administration of the diet after allergen exposure.

*Martin Frank Diversity Travel Award*

April 2024

**American Physiological Society**

ROCKVILLE, MD

- \$1500 scholarship to support travel related to attendance of the annual American Physiological Society conference, 2024.

*Women's Health Initiative Scholar*

March 2024

**National Institute of Health-NHLBI**

BETHESDA, MD

- Selected as a scholar to attend the Women's Health Initiatives across the Lifespan Workshop by submitting a proposal that addresses women's Health.
- Proposed using the C-reactive protein-albumin ratio to predict the risk of developing COPD among postmenopausal women.

*National Science Foundation-Rising Scientist Award*

March 2024

**Genetics Society of America**

WASHINGTON, DC

- \$1900 scholarship to support travel related to the attendance of the annual conference, The Allied Genetics Conference, TAGC 2024.

*Presidential Membership Award*

March 2024

**Genetics Society of America**

WASHINGTON, DC

- Awarded a one-year society membership.

*Travel Award*

March 2024

**International Mammalian Genomes Society**

WASHINGTON, DC

- Scholarship for annual conference registration and accommodation, The Allied Genetics Conference, TAGC 2024.

*Research Recognition*

April 2023, 2024

**American Physiological Society- Respiration Trainee Section**

SAN DIEGO, CA

*The Underrepresented Trainee Development Scholarship Chair Award*

May 2023

**American Thoracic Society**

WASHINGTON, DC

- \$1000 scholarship to support travel related to attendance of the annual American Thoracic Society conference, 2023.

*Steven M. Horvath Professional Opportunity Award*

April 2023

**American Physiological Society**

LONGBEACH, CA

- Awarded this award for my top-ranked research in Respiration.

- \$1000 scholarship to support travel related to attendance of the annual American Physiological Society conference, 2023.

*Outstanding Course Advisor*

**Department of Physiology, University of Benin**

April 2019

EDO STATE, NIGERIA

- Head of Department Commendation for an outstanding course advisor by the then Chair of the Department, Prof F.O Agoreyo.

### **PUBLICATIONS (PEER-REVIEWED)**

**Ekpruke CD**, Silveyra P. The role of estrogen receptors in lung diseases. *Am J Physiol Lung Cell Mol Physiol*. 2026 Feb 1;330(2):L159-L168. doi: 10.1152/ajplung.00060.2025. Epub 2025 Dec 31. PMID: 41474472.

Silveyra P, Babayev M, and **Ekpruke CD** (2025). Sex, hormones, and lung health. *Physiological reviews*, 10.1152/physrev.00026.2024. Advance online publication. <https://doi.org/10.1152/physrev.00026.2024>

**Ekpruke CD**, Borges-Sosa O, Hassel CA, Rousselle D, Dinwiddie L, Babayev M, Bakare A, and Silveyra P. (2025). Sex-Specific Anti-Inflammatory Effects of a Ketogenic Diet in a Mouse Model of Allergic Airway Inflammation. *International Journal of Molecular Sciences*. 26(7):3046. <https://doi.org/10.3390/ijms26073046>.

**Ekpruke CD**, Alford R, Rousselle D, Babayev M, Sharma S, Parker E, Davis K, Hemmerich C, Rusch DB, Silveyra P (2024). Sex-specific alterations in the gut and lung microbiome of allergen-induced mice. *Frontiers in Allergy*. 5:1451846.

Sharma S, Rousselle D, Parker E, **Ekpruke CD**, Alford R, Babayev M, Commodore S, Silveyra P. (2024). Sensitivity of Mouse Lung Nuclear Receptors to Electronic Cigarette Aerosols and Influence of Sex Differences: A Pilot Study. *International Journal of Environmental Research and Public Health*. 20;21(6):810.

**Ekpruke CD**, Alford RR, Parker E, Silveyra P. (2024). Gonadal sex and chromosome complement influence the gut microbiome in a mouse model of allergic airway inflammation. *Physiol. Genomics*. 2024 Apr 19. doi: 10.1152/physiolgenomics.00003. Epub. ahead of print. PMID: 38640403.

**Ekpruke CD**, Alford R, Rousselle D, Babayev M, Sharma S, Commodore S, Buechlein A, Rusch DB, Silveyra P. (2024). Transcriptomics analysis of allergen-induced inflammatory gene expression in the Four-Core Genotype mouse model. *Physiol Genomics*. 56(2):235-245. doi: 10.1152/physiolgenomics.00112.2023. Epub 2023 Dec 4. PMID: 38047309. **APSselect article for February 2024.**

Commodore S, **Ekpruke CD**, Rousselle D, Alford R, Babayev M, Sharma S, Buechlein A, Rusch DB, Silveyra P. (2024). Lung pro-inflammatory microRNA and cytokine expression in a mouse model of allergic inflammation: role of sex chromosome complement and gonadal hormones. *Physiol Genomics*. 56(2):179-193. doi: 10.1152/physiolgenomics.00049.2023. Epub 2023 Dec 4. PMID: 38047312.

Commodore S, Sharma S, **Ekpruke CD**, Pepin R, Hansen AM, Rousselle D, Babayev M, Ndeke JM, Alford R, Parker E, Dickinson S, Sharma S, Silveyra P. (2023). Thirdhand vaping exposures are associated with pulmonary and systemic inflammation in a mouse model. *Journal of Environmental Exposure Assessment*. 2(4): 22.

**Ekpruke CD**, Silveyra P. (2022). Airway remodeling in asthma. *ANNALS OF TRANSLATIONAL MEDICINE*.

**Ekpruke CD**, Silveyra P. (2022). Sex differences in airway remodeling and inflammation: clinical and biological factors. *Frontiers in Allergy*, 3.

**Ekpruke CD**, Iyawe VI. (2020). Forced Vital Capacity, forced expiratory volume, and Peak Expiratory Flow rate in workers of power generating stations. *European Journal of Biology and Medical Science Research*, 8(2), 30-44.

- Ekpruke D.** (2020). Bleeding and Clotting Time in Male and Female Young Healthy Adults of Different Blood Groups-A Pilot Study. *Nigerian Journal of Physiological Sciences*, 35(2), 213-215.
- Ekpruke CD, Iyawe, VI.** (2020). Cardiovascular System Response to Chronic Exposure to Emissions from Gas Turbines Power Plants. *World Journal of Cardiovascular Diseases*, 10(4), 208-224.
- Ogheyemhe BE, Amaechi RA, **Ekpruke CD**, Airiagbonbu BO, Odigie EB. (2020). Comparative Benefits of *Cocos nucifera L.* Husk, Milk and Shell Extracts on Body Weight Changes and Haematological Indices in Male Rats: doi.org/10.26538/tjnpr/v4i8. 22. *Tropical Journal of Natural Product Research (TJNPR)*, 4(8), 455-462.
- Osayande OE, **Ekpruke CD**, Inikogbashe D. (2017). Serum Cortisol Levels in Pregnancy and Six Weeks Post-Partum. *African Scientist*, 18(4), 235238.
- Ekpruke CD**, Ebomoyi MI. (2019). Effects of Ingestion of Various Cassava (*Manihot utilissima*) Components on Serum Testosterone Level and Testicular Morphology in Male Wistar Rats. *African Scientist*, 18(1), 17-24.
- Olaitan OH, **Ekpruke CD.** (2019). Reference Value of Some Hematological Parameters in Female Newzealand Rabbits. *International Journal of Forensic Medical Investigation*, 4(2), 19-21.
- Innih O, Owolabi J, **Ekpruke CD.** (2018). Histological evaluation of the antidyslipidemic effects of aqueous root extract of *Morinda lucida*. *Journal of Experimental and Clinical Anatomy*, 17(1), 23-23.
- Eze GI, Innih SO, **Ekpruke CD.** (2021). Ameliorative effect of aqueous extract of dried seeds of *persea americana* on lipid profile of adult Wistars on high cholesterol diet. *Journal of Science Research*. 17:106-111.
- Eze GI, Innih SO, **Ekpruke CD.** (2022). Administration of Aqueous Extract of Ginger Abrogated Dyslipidemia in Adult Wistar Rats. *Journal of Science Research*. 18:1-4.
- Lawal ET, **Ekpruke CD**, Abu E. (2017). Effects of Mistletoe on the lipid profile and aorta of Triton WR-1339 treated Wistar rats. *Annals of Biomedical Sciences*, 16(2), 271-289.
- Oigbochie VE, **Ekpruke CD**, Okemute GA. (2017). Abrogation by Human Menopausal Gonadotropin on Testicular Disorders Induced by Cisplatin in Adult Male Rats. *Annals of Biomedical Sciences*. 16:110-118.
- Oigbochie TE, Lawal TE, **Ekpruke CD.** (2017). Effect of Human Menopausal Gonadotropin on Rats Testes Damaged by Cisplatin Treatment. *Journal of Nigeria Society for Experimental Biology*. 18(1):33-41.
- Ekpruke CD**, Innih SO, Ebomoyi MI. (2015). The effect of different cassava (*Manihot utilissima*) components on liver function of male Wistar rats. *Journal of Experimental and Clinical Anatomy*, 14(1), 34-34.
- Innih SO, Eze GI, **Ekpruke CD**, Baxter-Grillo D. (2014). The effect of aqueous extract of neem (*Azadirachta indica*) leaves on liver functions of Wistar rats. *Journal of Medicine and Biomedical Research*, 13(2), 61-66.
- Balogun CD**, Ebomoyi MI. (2012). Blood glucose level in rats fed on cassava (*manihot utilissima*) components. *Journal of Medicine and Biomedical Research*, 11(2), 107-110.

**ACCEPTED FOR PUBLICATION**

**Ekpruke CD**, Rousselle D, Alford R, Borges-Sosa O, Babayev M, Sharma S, Dinwiddie L, Parker E, and Silveyra P. Sex Chromosomes and Gonadal Sex Interactions in Airway and Immune Responses to Allergen Challenge. A research article submitted to the American Physiological Journal-Lungs

## PROFESSIONAL DEVELOPMENT PROGRAM

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Participant

September 2024-January 2025

**Indiana University National Institute of Health (NIH) Writing Cohort Program organized by the Proposal Development Service Office of Indiana University Bloomington, Indiana.**

- Trained by grant experts to craft winning NIH-Grant proposal: A cohort workshop.

Participant

June 10-21, 2024

**Advanced Statistics Summer Workshop organized by The Department of Biostatistics and Health Data Science, School of Medicine, Indiana University**

- Mentoring and training program that helps you develop research projects and analyze data, especially in human research.

Participant

October 2021-Present

**Responsible conduct of Research**

- The Office of Research Compliance at Indiana University Bloomington offers a 2-hour Responsible Conduct of Research (RCR) Seminar Series every 2 weeks during the school year.
- These seminars are taken by senior researchers within and outside the institution discussing topics like authorship, data management, grant writing, etc.

## PRESENTATIONS/ABSTRACT PUBLICATIONS

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**Ekpruke CD**, Rousselle D, Babayev M, Borges-Sosa O, Dinwiddie L, Silveyra P. Estrogen Receptor  $\beta$  Mediates Allergen-Induced Airway Hyperresponsiveness: Insights from Knockout Mouse Models. Accepted for Oral presentation at New trends in Sex differences and women's Health Research Conference, Oct 23-25, 2025, New Orleans, Louisiana.

**Ekpruke CD**, Borges-Sosa O., Hassel C., Rousselle D, Dinwiddie L., Babayev M, Bakare A., Erik P., Silveyra P. Sex-Specific Anti-inflammatory Effects of a Ketogenic Diet in a Mouse Model of Allergic Airway Inflammation. Accepted for Poster Presentation at the 2025 American Thoracic Society Meeting, May 16-21, 2025, San Francisco, California.

**Ekpruke CD**, Rousselle D, Alford R., Borges-Sosa O., Babayev M, Sharma S, Dinwiddie L., Erik P., Silveyra P. Influence of sex chromosome and gonadal sex on lung immune cell responses following allergen exposure. Accepted for Poster and Oral Presentation at the 2025 American Physiological Conference, Baltimore, Maryland, April 24-27, 2025.

Babayev M, **Ekpruke CD**, Borges-Sosa O, Sharma S, Rousselle D, Igwe C, Boulos MC, Parekh A, Silveyra P. The role of sex hormones and sex chromosomes in urethane-induced lung carcinogenesis. Accepted for Poster Presentation at the 2025 American Association for Cancer Research Meeting, April 25-30, 2025 Chicago, Illinois.

**Ekpruke CD**, Rousselle D, Babayev M, Sharma S, Silveyra P. Characterization of the role of estrogen receptors in exacerbating airway hyperresponsiveness. Accepted for Poster Presentation at the 2024 American Physiological Conference, Long Beach California April 4-7, 2024.

**Ekpruke CD**. Proposal presentation on the Combined Association of C-Reactive Protein/Albumin Ratio and Physical Activities in the Incident of Chronic Obstructive Pulmonary Disease Among Postmenopausal Women Undergoing Hormone Replacement Therapy: Insights from the Women Health Initiatives. Accepted for Oral Presentation at the 2024 Women Health Initiative Workshop, Washington DC, March 6-8, 2024.

**Ekpruke CD**, Alford RR, Parker E, Silveyra P. Sex hormones and chromosomal complements influence on gut microbiome in allergic airway inflammation. Accepted for Poster Presentation at the 2024 American Thoracic Society Meeting, May 17-22, 2024, San Diego California.

**Ekpruke CD**, Alford R, Rousselle D, Babayev M, Sharma S, Commodore S, Buechlein A, Rusch DB, Silveyra P. Transcriptomics analysis of allergen-induced inflammatory gene expression in the Four-Core Genotype mouse model. Accepted for Poster Presented at the Genetics Society of America Conference, March 6-10, 2024 Washington, DC.

**Ekpruke CD**, Alford RR, Sharma S, Rousselle D, Babayev M, Silveyra P. *The phenotypic effect of sex chromosomes versus sex hormones in a mouse model of allergic asthma*. Accepted for Oral Presentation at the 2023 American Thoracic Society Meeting, May 19-24, 2023, Washington DC.

**Ekpruke CD**, Alford RR, Sharma S, Rousselle D, Babayev M, Commodore S, Silveyra P. *Characterization of allergic inflammation and gene expression profiles in the Four Core Genotype mouse model*. This was accepted for Poster presentation at the Physiology Summit, Long Beach, CA, April 20-23, 2023.

Sharma S, Rousselle D, **Ekpruke CD**, Alford RR, Babayev M, Silveyra P. *Differential Expression of Nuclear Receptors and Determination of Potential of phthalates in electronic nicotine delivery systems (ENDS)*. This was accepted for Poster presentation at the Society of Toxicology's 62nd Annual Meeting, Nashville, TN, March 19-23, 2023.

Alford RR, **Ekpruke CD**, Silveyra P. *Sex differences in the gut microbiome in a mouse model of allergic asthma*. This was accepted for Poster presentation at the Society of Toxicology's 62nd Annual Meeting, Nashville, TN, March 19-23, 2023.

Commodore S, **Ekpruke CD**, Rousselle D, Alford RR, Babayev M, Sharma S, Silveyra P. *The role of sex chromosome complements and gonadal hormone in lung microRNA expression in a mouse model of allergic inflammation*. This was accepted for Poster presentation at the Society of Toxicology's 62nd Annual Meeting, Nashville, TN, March 19-23, 2023.

**Ekpruke CD**, Adewole J, Osamwonyi K, Otabor M, Silveyra P. *Attenuation of tissue damages caused by mosquito repellent with administration of vitamin C and daily exercise in male Wistar rats*. This was accepted for Poster presentation at the Society of Toxicology's 62nd Annual Meeting, Nashville, TN, March 19-23, 2023.

Sharma S, Rousselle D, **Ekpruke CD**, Alford RR, Babayev M, Silveyra P. *Sex Influences on Nuclear Receptor Expression in Electronic Cigarette Induced Lung Inflammation*. Accepted for Poster presentation at the American Thoracic Society Meeting, May 19-24, 2023.

## INVITED TALK

Guest Speaker

October 3<sup>rd</sup>, 2024

**Department of Microbiology and Immunology, School of Medicine , Indiana University Indianapolis, Indiana**

- Invited as a guest speaker to the Department's seminar series.
- Presented a seminar, titled "Sex Chromosome Associations with Asthma Phenotypes: The Role of the Microbiome."

## GRANTS (PI: EKPRUKE)

Grants submitted

- **NIH/NHLBI K99/R00 (Submitted 2024)**  
**Project Title:** *The Role of Ferroptosis in Allergic Airway Inflammation: Sex Differences and Sex-Specific Mechanisms*  
Focus: Iron-dependent programmed cell death pathways and sex-regulated molecular mechanisms.
- **NIH/NIAID DP2 New Innovator Award (Submitted 2025)**  
**Project Title:** *The Role of Iron Metabolism in the Sex-Specific Alterations of Gut–Lung Axis Microbiome in Allergic Airway Inflammation*  
Focus: High-impact integration of iron biology, microbiome remodeling, and sex-specific immune regulation.
- **NIH/NIAID K22 (Submitted 2025) (UNDER-REVIEW)**  
**Project Title:** *Mechanistic Role of Estrogen Receptors in Regulating Mitochondrial Function During Allergic Airway Inflammation*  
Focus: Nuclear receptor control of mitochondrial responses and sex-biased immunometabolic regulation.

*Funded Grants*

**Indiana Clinical and Translational Sciences Institute Postdoc Challenge Award**

Indiana University CTSI — \$5,000 (2023–2024)

*Project:* Using a ketogenic diet to modulate immune cell recruitment in allergic airway inflammation.

**PROFESSIONAL ORGANIZATION**

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<i>Presidential Member</i>	2024-2025
<b>Genetics Society of America (GSA)</b>	
<i>Member</i>	2024-2025
<b>International Mammalian Genome Society (IMGS)</b>	
<i>Member</i>	2023-2025
<b>American Academy of Allergy, Asthma &amp; Immunology (AAAAI)</b>	
<i>Member</i>	2023-2024
<b>Society of Toxicology (SOT)</b>	
<i>Member</i>	2021-Present
<b>American Physiological Society (APS)</b>	
<i>Member</i>	2021-Present
<b>American Thoracic Society (ATS)</b>	
<i>Member</i>	2020-Present
<b>Organization for Women in Science for Developing World (OWSD)</b>	
<i>Member</i>	2014-Present
<b>Physiological Society of Nigeria (PSN)</b>	
<i>Member</i>	2009-Present
<b>Institute of Strategic Management (ISM)</b>	

**REFERENCES**

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Available on Request