

# Oladipupo Ridwan Bello

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New York, USA

## SUMMARY

Computational Immunologist with proven expertise in applying bioinformatics and machine learning to decode immune system complexity. Skilled at translating data-driven insights into actionable solutions that accelerate immunotherapy development and enable innovative diagnostic and prognostic biomarkers to improve human and animal health.

## EDUCATION

### PhD in Animal Sciences, 2025

University of Maryland, College Park, USA

Dissertation: Exploring the Drivers of Public T-Cell Receptors Using Deep Learning and Transcriptomics

### MSc in Animal Breeding & Genetics, 2019

University of Ibadan, Nigeria

Thesis: Relationship Between Milk Yield and Udder Traits in White Fulani Cows

### Professional Certification: Graduate Animal Scientist (Distinction), 2016

Exam: Graduate Animal Scientist Examination

Body: Nigerian Institute of Animal Science ([nias.gov.ng](https://nias.gov.ng))

### BSc in Animal Science (First Class Honors), 2015

University of Ibadan, Nigeria

Project: Variations in Hematological and Serum Biochemical Indices Among White Fulani Bulls, Ouda Rams, and West African Dwarf Bucks

## RELEVANT SKILLS

- **Programming:** R, Python, Bash, SQL, Rust, web development (HTML, CSS, JavaScript).
- **Statistical Analysis:** Hypothesis testing, linear and generalized linear models, mixed models, survival analysis, multivariate statistics, time series analysis, Bayesian statistics.
- **Bioinformatics:** NGS data analysis (bulk/single-cell RNA-Seq, WGS, ChIP-Seq, ATAC-Seq), TCR/BCR repertoire analysis, structural modeling, metagenome analysis, GWAS, genomic selection.
- **Machine Learning:** Neural networks, transformers, generative models, classification, regression, clustering.
- **Developer Tools & Environments:** Git, Docker, Singularity, Quarto, HPC/Slurm, Linux, MacOS, Windows.
- **Laboratory Techniques:** DNA Extraction, PCR, Gel Electrophoresis, Molecular Cloning.

## RESEARCH EXPERIENCE

### Doctoral Research Assistant (January 2021 – August 2025)

Department of Animal and Avian Sciences, University of Maryland, College Park, USA

- **Evaluated the role of public (shared) T cell receptors in human and bovine immunity**
  - Designed and trained a high-performance convolutional neural network classifier (over 85% precision and recall) to distinguish highly variable public and private T cell receptor nucleotide sequences.
  - Modeled 3D T-cell receptor structures in MHC contexts to investigate the structural basis of publicness.
  - Isolated T cell receptor sequences from single-cell RNA-Seq data and examined the transcriptome profile of public and private T cells.
  - Studied intercellular communication patterns of public and private T cells with other immune cells.
  - Functionally characterized T cells with public and private receptor sequences to identify candidate genes that are associated with T cell receptor publicness.
  - Integrated GWAS of important traits to identify the role of public T cells in complex traits.
  - Examined the relationship between gut microbial diversity and public T cell receptor diversity in surrounding tissues.
- **Evaluated the genetic and epigenetic mechanisms of Marek’s disease resistance in chicken**
  - Examined the gene expression profile of Marek’s disease-resistant and susceptible chicken lines with bulk RNA-Seq to identify candidate genes that are associated with Marek’s disease resistance.
  - Used ChIP-Seq and ATAC-Seq to corroborate and resolve candidate genes identified by RNA-Seq.
  - Leveraged the highly inbred nature of the chicken lines to identify RNA editing events and associated genes potentially contributing to Marek’s disease resistance.
  - Examined the biological functions and implicated pathways of co-expressed candidate genes.

### Project Assistant (National Youth Service Corps) (April 2016 – April 2017)

Faculty of Agriculture, Adekunle Ajasin University, Ondo, Nigeria

- Managed the on-campus cocoa nursery for the Ondo State cocoa revolution project, overseeing the propagation and care of *Theobroma cacao* seedlings.

### Intern—Cocoa Research Institute of Nigeria, Ibadan, Nigeria (July – August 2014)

- Served in the entomology unit as a research assistant on the use of neem extract (*Azadirachta indica*) as an organic pesticide for *Theobroma cacao*.
- Served in the pathology unit as a research assistant on the potency of different candidate fungicides on black pod disease of *Theobroma cacao*.

### Intern—Teaching & Research Farm, University of Ibadan, Nigeria (April – June 2014)

- Assisted with daily animal husbandry, including feeding, watering, sanitation, and health monitoring, across the poultry, piggery, rabbitry, and dairy units.

## TEACHING EXPERIENCE

### Graduate Teaching Assistant (January 2021 – August 2025)

Department of Animal and Avian Sciences, University of Maryland, College Park, USA

- **ANSC 101 & 103 (Principles of Animal Science Lab)**, Fall 2023 – Spring 2025
  - Demonstrated animal handling, stockmanship, and health care to students on the farm and in the lab.
  - Introduced students to experimental design and statistical analyses used in animal research.
  - Proctored and graded laboratory reports, tests, and exams.
- **ANSC 627/327 (Quantitative and Molecular Genetics)**, Spring 2023
  - Held weekly TA office hours to assist students with the course materials.
  - Led course review sessions and graded exams.
- **ANSC 447 (Physiology of Mammalian Reproduction Lab)**, Fall 2021
  - Demonstrated gross anatomy and histology of livestock reproductive system to students in the lab.
  - Proctored and graded tests and laboratory reports

### Tutorial Assistant (March 2017 – September 2018)

Department of Animal Science, University of Ibadan, Nigeria

- Coordinated and led tutorials on molecular and quantitative genetics for undergraduate students.
- Coordinated and led tutorials on probability, probability distributions, and design of experiments for undergraduate students.

## PUBLICATIONS ([Google Scholar](#))

**Bello, O.R.**, Salako, A.E., Akinade, A.S., & Yakub, M. (2023). Relationship between Milk Yield and Udder Morphology Traits in White Fulani Cows. *Dairy*, 4, 435-444. <https://doi.org/10.3390/dairy4030029>

Ewuola, E.O., Adeyemi, A.A., & **Bello, O.R.** (2020). Variations in haematological and serum biochemical indices among White Fulani bulls, Ouda rams and West African Dwarf bucks. *Nigerian Journal of Animal Production*, 44(1), 136–143. <https://doi.org/10.51791/njap.v44i1.561>

## SELECTED CONFERENCE PRESENTATIONS

**Bello, O.R.**, & Johnson, P.L.F. (2025, January 10-15). *Public T Cell Receptors in Bovine Immunity*. International Plant & Animal Genome Conference, San Diego, California, USA.

**Bello, O.R.**, Chu, Q., & Song, J. (2023 July 10-13). *Temporal profiling of the bursa transcriptome reveals systemic differences induced by Marek’s disease virus*. Poultry Science Meeting, Philadelphia, Pennsylvania, USA.

## SELECTED HONORS AND AWARDS

- Jacob K. Goldhaber Travel Grant (2025): Graduate School, University of Maryland, College Park, USA
- Animal Health and Care Academy Fellow (2024/2025 cohort): MANRRS, USA.
- Shaffner Award for Second Place in Poultry Research (2022): 35th Annual Symposium, Department of Animal and Avian Sciences, University of Maryland, College Park, USA
- Dean’s Fellowship (2021): Graduate School, University of Maryland, College Park, USA
- EducationUSA Opportunity Funds Program Fellow (2019): United States Embassy and Consulate in Nigeria
- University of Ibadan Master’s Scholarship and Tutorial Assistantship (2017): University of Ibadan, Nigeria
- Overall Best Candidate, Graduate Animal Scientist Exam (2016): Nigerian Institute of Animal Science (NIAS)