Victoria Anthony Uyanga, Ph.D.

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Academic profiles

ORCID
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GoogleScholar
https://scholar.google.com/citations?hl=en&user=UOlCaR0AAAAJ

Research Gate
https://www.researchgate.net/profile/Victoria_Uyanga

LinkedIn
https://www.linkedin.com/in/victoria-anthony-uyanga-5b65a4109/

Global Academy
https://theglobalacademy.ac/iowa-state-university/dr-victoria-anthony-uyanga/

Summary

An enthusiastic researcher with extensive experience in Animal Nutrition and Physiology. Proficient in modern molecular biology skills and scientific research techniques to study the environmental and nutritional factors affecting animal production. Research interest includes poultry nutrition, stress physiology, gut health, functional amino acids, immunology, alternative feed ingredients, and animal welfare. Seeking to contribute to the animal production sector via research and development opportunities within academia and research institutions.

Education

Doctor of Philosophy in Animal Nutrition and Physiology

- Department of Animal Nutrition and Feed Sciences, Shandong Agricultural University, China. 03.2019 - 06. 2022
- Dissertation: The Functional Roles and Mechanisms of L-Citrulline in Heat Stressed and Immune Challenged Chickens.
- Major Advisor : Prof Dr. Hai Lin

Masters of Agriculture in Animal Physiology

- Department of Animal Physiology. Federal University of Agriculture, Abeokuta, Nigeria. 01. 2016 - 07.2018
- Dissertation: Effects of Age of broiler breeders and egg storage duration on egg quality, blastodermal characteristics, hatchability and chick quality
- Major Advisor : Prof Dr. Okanlawon M. Onagbesan

Professional Diploma in Education

- School of Vocational Studies, Federal College of Education, Oshiele, Abeokuta, Nigeria, 06.2017 - 06. 2018

Bachelor of Agriculture in Animal Science

- Department of Animal Science, Faculty of Agriculture, University of Uyo, Uyo, Nigeria. 10. 2008 - 09. 2014
- Dissertation: Effects of feeding dumpsite forage (*Calapogonium mucunoides*) on the haematology and histology of the kidney and liver of Rabbits (*Oryctolagus cuniculus*)
- Major Advisor : Prof Dr. Isongesit Solomon

Work Experience

Assistant Professor of Animal Science 10.2024 to Present

Lincoln University of Missouri, USA

1. Develop and deliver undergraduate and/or graduate courses in animal science
   a) Instructor - AGR-101: Introduction to Animal Science
   b) Instructor - AGR-300: Meat Science
   c) Instructor - AGR-421: Ethics and Welfare in Animal Agriculture
   d) Instructor - AGR-308: Beef Cattle Production and Lab
   e) Instructor - AGR 339: Poultry Production and Lab
   f) Instructor - AGR 320A: Animal Breeding and Genetics
   g) Instructor - AGR 331: Animal Feeds and Nutrition
2. Design course materials, including syllabi, lectures, labs, exams, and assignments, and assess student performance.
3. Mentor undergraduate and graduate students, advising on academic progress, career pathways, and professional development.
4. Conduct original research within the area of animal science, with emphasis on nutrition, physiology, welfare, and production.
5. Collaborate with other researchers, institutions, farm employees, extension educators, producers, and industry partners to conduct interdisciplinary research that advances knowledge and practical solutions in animal science
6. Participate in grant writing, scholarships, conference presentations, and other professional services.

Postdoctoral Research Associate 05.2023 to 09.2024

Iowa State University, USA

1. Taught classes and laboratory techniques on modern poultry production trends with a focus on broiler, layer, and turkey industries.
   a). Teaching Assistantship- ANS 223: Poultry Science - 3 credit unit- Fall 2023
2. Co-led the Organic Agriculture Research and Extension Initiative (OREI) research project integrating poultry production with vegetables, and cover cropping practices using pasture-raised poultry systems.
3. Conducted poultry research trials covering studies related to immunology, gut physiology, performance, behavior, meat quality, and welfare in chickens
4. Participate in grant writing, scholarships, conference presentations, and other professional services.
5. Engagement with relevant scientific communities and societies

Associate Professor 10. 2022 to 04. 2023

Shandong Agricultural University, Tai'an, China

1. Participated in undergraduate and postgraduate teaching, mentoring, and research activities
2. Taught classes on Academic writing in English for graduate students
3. Conducted scientific research in the fields of animal nutrition, animal physiology, and molecular biology
4. Applied for competitive external research funding such as the Research Fund for International Scientists (RFIS) by the National Natural Science Foundation of China.
5. Timely publication of research findings in peer-reviewed scientific journals
6. Worked with the International Office to facilitate the internationalization program of the institution

Extension Agent 2018 - 2019

N-Power-Agricultural Development Programme (AKADEP), Uyo, Nigeria

1. Communicated with local farmers on recent agricultural practices
2. Worked with farm management to create simple, intuitive interactions and experiences.
3. Participated in fourth weekly training and meetings organized by senior extension agents

Assistant Examiner 2018; 2017

West African Examination Council (WAEC), Abeokuta, Nigeria

1. Worked with the examination council to score and grade candidates
2. Maintained project timeline, reporting, and optimal workflow.
3. Attended training workshops for sensitization and updates

Teaching Practice 2017-2017

Bioku Grammar School, Lanlate, Ogun State, Nigeria

1. Completed six (6) months of teaching practice for teacher-training certification
2. Taught students agriculture and animal science subjects
3. Evaluated and graded student's performances

Graduate Intern 2017 - 2017

Obasanjo Farms Nig. Ltd, Nigeria

1. Worked with hatchery personnel on routine farm operations such as egg handling, egg storage, incubation, and hatching
2. Carried out quality assurance such as egg candling tests to discover losses and optimize usability
3. Completed assigned tasks and ensured adherence to farm biosecurity measures

Animal Husbandry Instructor and Laboratory Attendant 2014 - 2015

Command Day Secondary School, Oyo State, Nigeria

1. Completed mandatory one (1) year teaching and training of students in animal science subject
2. Taught students animal husbandry techniques and practical on poultry and rabbitry
3. Evaluated and graded student's performances for assignments, mid-terms, and promotion examinations

Research Experience

Postdoctoral Research Associate 2023- 2024

Department of Animal Science, Iowa State University, United States of America

1. Conducted poultry research trials, including mixing feed, poultry husbandry, weighing and feeding birds, collecting samples, performing sample analysis, generating data, data analysis, and publication
2. Applied and molecular assays supporting poultry work in the laboratory such as nucleic acid extraction, qRT-PCR, ELISA, flow cytometry, hematoxylin and eosin staining, immunohistochemistry, and behavioral assessment
3. Data interpretation, publication, and presentation
4. Assisted with poultry science laboratory training for the fall session
5. Assisted with mentoring and training other graduate and undergraduate students
6. Management, organization, and coordination of team activities and laboratory engagements

Doctoral Researcher 2019- 2022

Department of Animal Nutrition and Feed Science, Shandong Agricultural University, China

1. Conducted primary research with broilers and laying hens: routine management, feeding, common injections, surgical procedures such as intracerebroventricular cannula insertion, microinjections and laparotomy.
2. Extensive experience with various cellular and molecular biology techniques, such as nucleic acid extraction, RT-PCR, ELISA, spectrophotometry, flow cytometry, electrophoresis and western blotting, paraffin embedding, hematoxylin and eosin staining, and immunohistochemistry
3. Experienced with biotelemetry tools and software for physiological monitoring such as core body temperature sensors, infrared thermography, and rectal thermometers
4. Outstanding collaborative skills, organizational skills, and engagement in teamwork

Graduate Researcher 2016-2018

Department of Animal Physiology, Federal University of Agriculture Abeokuta, Nigeria

1. Managed research projects sponsored by the Association of African Universities (AAU) that focused on the influence of age of broiler breeders and egg storage duration on egg quality, blastodermal characteristics, hatchability, and chick quality
2. Performed standard biology techniques including embryo culture and isolation, cell counting, mortality staging
3. Conducted egg quality evaluation for broiler breeder eggs based on flock ages and pre-incubation storage durations
4. Routine egg management, incubation practices, and hatching of fertile eggs
5. Troubleshooting hatchery problems such as examining hatch debris and categorization of embryonic mortality
6. Data collection, record keeping, statistical analysis, and report generation for fertility and hatchability indices.

Graduate Internship 2017

Hatchery Unit, Obasanjo Farms Nigeria (OFN) Limited, Nigeria

1. Monitoring hatchery performance by taking daily data to assess fertility, hatchability, egg weight loss, chick quality, and embryo mortality
2. Assisted with routine quality control in hatchery such as disinfection, fumigation, and quarantine.
3. Prepared quarterly reports on work practices for presentation and documentation
4. Demonstrated skills essentials for hatchery management such as incubation, candling, sorting and grading, transferring, and hatching of eggs
5. Adoption of essential biosecurity measures and the management of hatchery waste

Undergraduate Internship 2013-2014

University of Uyo Teaching and Research Farm, Uyo, Nigeria

1. Conducted primary research on rabbit rearing, crossbreeding, kindling, and hutch management
2. Nutrition-based experiments evaluating the influence of heavy metals in rabbit diets
3. Routine poultry management practices
4. Feed formulation and feed evaluation techniques

Completed Research Projects

Postdoctoral Period

1. Effects of arginine silicate (ASI) supplementation in late lay hens. IACUC-23-207. January to April, 2024
2. Introduction to Poultry Science 223. IACUC-21-223. August to November, 2023
3. Immunological studies in chickens. Funded by USDA-AFRI-SAS. IACUC Number-22-113. September to October, 2023
4. Integrating vegetable, poultry, and cover cropping practices to enhance resiliency in organic production Systems. Funded by USDA-NIFA-OREI. IACUC Number-23-047. June to September, 2023
5. Poultry Laser Enrichment. Funded by USDA-NIFA. IACUC Number-22-219. June 2023

Graduate School

1. **Uyanga**, V.A. 2022. The Functional Roles and Mechanisms of L-Citrulline in Heat Stressed and Immune Challenged Chickens. Doctoral Dissertation. Department of Animal Nutrition and Feed Science, Shandong Agricultural University, Tai'an, China
2. **Uyanga**, V.A. 2018. "Effects of Age of broiler breeders and egg storage duration on egg quality, blastodermal characteristics, hatchability and chick quality". Master's Thesis, Department of Animal Physiology, Federal University of Agriculture, Abeokuta, Nigeria.
3. **Uyanga**, V.A. 2018. "Perception of public and private secondary schools students' towards agriculture as a career choice: A case study of Odeda Local Government Area,

Ogun state". Professional Diploma project to Federal College of Education Osiele, Abeokuta, Nigeria.

4. **Uyanga**, V. A 2014. Effects of feeding dumpsite forage (*Calapogonium mucunoides*) on the haematology and histology of the kidney and liver of Rabbits (*Oryctolagus cuniculus*). B. Agric. Research submitted to Department of Animal Sciences, University of Uyo, Uyo, Nigeria.

Publications (full text at https://scholar.google.com/citations?hl=en&user=UOlCaR0AAAAJ)

1. Li, X., **Uyanga, V. A.,** Jiao, H., Wang, X., Zhao, J., Zhou, Y., Li, H. and Lin, H. 2024. Effects of low dietary calcium and lipopolysaccharide challenges on production performance, eggshell quality, and bone metabolism of laying hens. Frontiers in Physiology, 15. doi:10.3389/fphys.2024.1396301

2. **Uyanga, V.A.,** Bello, S.F., Bosco, N.J., Jimoh, S.O., Mbadianya, I.J., Kanu, U.C., Okoye, C.O., Afriyie, E., Mak-Mensah, E., Agyenim-Boateng, K.G., Ogunyemi, S.O., Nkoh, J.N., Olasupo, I.O., Karikari, B., Ahiakpa, J.K., 2024. Status of Agriculture and Food Security in post-COVID-19 Africa: Impacts and Lessons Learned. *Food and Humanity*, 100206. doi:10.1016/j.foohum.2023.100206

3. Li, K., **Uyanga, V.A.,** Wang, X., Jiao, H., Zhao, J., Zhou, Y., Li, H., Lin, H., 2024. Allicin Promotes Glucose Uptake by Activating AMPK through CSE/H2S-Induced S-Sulfhydration in a Muscle-Fiber Dependent Way in Broiler Chickens. *Molecular Nutrition & Food Research* 68, 2300622.doi: 10.1002/mnfr.202300622

4. Adebayo, M.O., Abiona, J.A., **Uyanga, V.A.,** Onagbesan, O.M., Oke, O.E., 2024. Growth and reproductive performance of broiler breeders reared to puberty under the open-sided housing in a tropical environment. *Animal Production Science* 64, doi: 10.1071/AN23183

5. Oke, O.E., Akosile, O.A., **Uyanga, V.A.,** Oke, F.O., Oni, A.I., Tona, K., Onagbesan, O.M., 2024. Climate change and broiler production. *Veterinary Medicine and Science* 10, e1416.doi: 10.1002/vms3.1416

6. **Uyanga, V.A.,** Sun, L., Liu, Y., Zhang, M., Zhao, J., Wang, X., Jiao, H., Onagbesan, O.M., Lin, H., 2023. Effects of arginine replacement with L-citrulline on the arginine/nitric oxide metabolism in chickens: An animal model without urea cycle. *Journal of Animal Science and Biotechnology* 14, 9. doi: 10.1186/s40104-022-00817-w

7. **Uyanga V. A.,** Ejeromedoghene, O., Lambo, M.T., Alowakennu, M., Alli, Y.A., Ere-Richard, A.A., Min, L., Zhao, J., Wang, X., Jiao, H., Onagbesan, O.M., Lin, H., 2023. Chitosan and chitosan-based composites as beneficial compounds for animal health: Impact on gastrointestinal functions and biocarrier application. *Journal of Functional Foods,* 104:105520. doi: 10.1016/j.jff.2023.105520

8. **Uyanga, V. A,** Musa, T., Oke, O.E., Zhao, J., Wang, X., Jiao, H., Onagbesan, O.M., Lin, H., 2023. Global trends and research frontiers on heat stress in poultry from 2000 to 2021:

A bibliometric analysis. *Frontiers in Physiology* 14, 1123582. doi:10.3389/fphys.2023.1123582

9. **Uyanga, V.A.,** Bello, S.F., Qian, X., Chao, N., Li, H., Zhao, J., Wang, X., Jiao, H., Onagbesan, O.M., Lin, H., 2023. Transcriptomics Analysis Unveils Key Potential Genes Associated with Brain Development and Feeding Behavior in the Hypothalamus of L-Citrulline-fed Broiler Chickens. *Poultry Science*, 103136. doi:10.1016/j.psj.2023.103136

10. Onagbesan, O.M., **Uyanga, V.A.,** Oso, O., Tona, K., Oke, O.E., 2023. Alleviating heat stress effects in poultry: updates on methods and mechanisms of actions. *Frontiers in Veterinary Science,* 10.doi:10.3389/fvets.2023.1255520

11. Adebayo, M., Abiona, J., **Uyanga, V.,** Onagbesan, O., Oke, O., 2023. Differential growth rate of three broiler breeder chicks raised to puberty under the conventional open-sided housing in a tropical environment. Animal-science proceedings 14, 310

12. Tang, C., Kong, W., Wang, H., Liu, H., Shi, L., **Uyanga, V.A.,** Zhao, J., Wang, X., Lin, H., Jiao, H., 2023. Effects of fulvic acids on gut barrier, microbial composition, fecal ammonia emission, and growth performance in broiler chickens. *Journal of Applied Poultry Research* 32, 100322. doi: 10.1016/j.japr.2022.100322

13. Liu, Y., **Uyanga, V.A.,** Jiao, H., Wang, X., Zhao, J., Zhou, Y., Lin, H., 2023. Effects of feeding strategies on eggshell quality of laying hens during late laying period. *Poultry Science* 102, 102406. doi: 10.1016/j.psj.2022.102406

14. Liu, M., **Uyanga, V.A.,** Cao, X., Liu, X., Lin, H., 2023. Regulatory effects of the probiotic *Clostridium butyricum* on gut microbes, intestinal health, and growth performance of chickens. *The Journal of Poultry Science*, 60, 2023011. doi: 10.2141/jpsa.2023011

15. Afriyie, E., Ahiakpa, K., **Uyanga, V.,** Okoye, C., Adejoke, A., Ogunyemi, S.O., Mbadianya, J., Akinyemi, F., Aluko, O., Acquah, P., Karikari, B., Jimoh, S., 2023. Improving agriculture and food security in Africa: Can the one health approach be the answer? *Qeios* 66UHUI, 1-18. doi: 10.32388/66UHUI

16. **Uyanga V.A.,** Oke E.O., Amevor F.K., Zhao J., Wang X., Jiao H., Onagbesan O.M., Lin H. 2022. Functional roles of taurine, L-theanine, L-citrulline, and betaine during heat stress in poultry. *Journal of Animal Science and Biotechnology,* 13:23, doi: 10.1186/s40104-022-00675-6.

17. **Uyanga, V.A.,** Zhao, J., Wang, X., Jiao, H., Onagbesan, O.M., Lin, H., 2022. Dietary L-citrulline modulates the growth performance, amino acid profile, and the growth hormone/insulin-like growth factor axis in broilers exposed to high temperature. *Frontiers in Physiology* 13. 937443. doi: 10.3389/fphys.2022.937443

18. **Uyanga, V. A.,** Zhao J., Wang X., Jiao H., Onagbesan O.M., Lin H. 2022. Effects of dietary L-citrulline supplementation on nitric oxide synthesis, immune responses and mitochondrial energetics of broilers during heat stress. *Journal of Thermal Biology,* 105:103227, doi:10.1016/j.jtherbio.2022.103227

19. **Uyanga V.A.,** Xin Q., Sun M., Zhao J., Wang X., Jiao H., Onagbesan O.M., Lin H. 2022. Research note: Effects of dietary l-arginine on the production performance and gene expression of reproductive hormones in laying hens fed low crude protein diets. *Poultry Science,* 101(5):101816, doi:10.1016/j.psj.2022.101816.

20. **Uyanga V.A.,** Zhao J., Wang X., Jiao H., Onagbesan O.M., Lin H. 2022. Dietary L-citrulline influences body temperature and inflammatory responses during nitric oxide synthase inhibition and endotoxin challenge in chickens. *Stress*. 25: 74-86. doi:10.1080/10253890.2021.2023495

21. **Uyanga, V. A.,** Liu, L., Zhao J., Wang X., Jiao H., Onagbesan O.M., Lin H. 2022. Central and peripheral effects of L-citrulline on thermal physiology and nitric oxide regeneration in broilers. *Poultry Science,* 101, 101669. doi: 10.1016/j.psj.2021.101669

22. Gbadegesin, L.A., Ayeni, E.A., Tettey, C.K., **Uyanga, V.A.,** Aluko, O.O., Ahiakpa, J.K., Okoye, C.O., Mbadianya, J.I., Adekoya, M.A., Aminu, R.O., Oyawole, F.P., Odufuwa, P. 2022. GMOs in Africa: Status, adoption and public acceptance. *Food Control,* 141:109193, doi: 10.1016/j.foodcont.2022.109193.

23. Xin, Q., **Uyanga, V.A**., Jiao, H., Zhao, J., Wang, X., Li, H. et al., 2022. Insulin-like growth factor-1 is involved in the deteriorated performance of aged laying hens. J Anim Sci 100, skac286.doi: 10.1093/jas/skac286

24. Oke, O.E., Oso, O.M., Logunleko, M.O., **Uyanga, V.A.,** Akinyemi, F., Okeniyi, F.A., Akosile, O.A., Baloyi, J.J., Onagbesan, O.M., 2022. Adaptation of the White Fulani cattle to the tropical environment. *Journal of Thermal Biology* 110:103372. doi: 10.1016/j.jtherbio.2022.103372

25. **Uyanga, V. A**., Amevor, F. K., Liu, M., Cui, Z., Zhao, X., H. Lin. 2021. Potential implications of citrulline and quercetin on gut functioning of monogastric animals and humans: A comprehensive review. *Nutrients* 13(11): 3782 doi: 10.3390/nu13113782

26. **Uyanga, V. A,** Wang, M., Tong, T., Zhao, J., Wang, X., Jiao, H., Onagbesan, O.M., Lin, H. 2021. L-Citrulline influences the body temperature, heat shock response and nitric oxide regeneration of broilers under thermoneutral and heat stress condition. *Frontiers in Physiology,* 12:671691. doi:10.3389/fphys.2021.671691

27. **Uyanga V.A.,** Okanlawon, O. M., Onwuka, C. F. I., Emmanuel, E., Lin, H. 2021. Coronavirus disease 2019 (COVID-19) and poultry production: Emerging issues in African countries, *World's Poultry Science Journal.* 77*:* 153-174, doi: 10.1080/00439339.2021.1874848

28. Oke, O.E., **Uyanga V.A.,** Iyasere, O.S., Oke, F.O., Majokdunmi, B.C., Logunleko, M.O., Abiona, J.A., Nwosu, E.U., Abioja, M.O, Daramola, J.A., Onagbesan, O.M. 2021. Environmental stress and livestock productivity in hot-humid tropics: Alleviation and future perspectives. *Journal of Thermal Biology*. 100:103077. doi: 10.1016/j.jtherbio.2021.103077

29. **Uyanga, V.A**., Jiao, H., Zhao, J., Wang, X., Lin, H. 2020. Dietary L-citrulline supplementation modulates nitric oxide synthesis and anti-oxidant status of laying hens during summer season. *Journal of Animal Science and Biotechnology,* 11, 103. doi: 10.1186/s40104-020-00507-5

30. Oke, O.E., Wheto, M., **Uyanga V.A.,** Aluko, F. A., Abiona, J.A., Adeleke, M.A., Ogbebor, C.O. 2021. Embryonic development and early juvenile growth of nigerian local chickens in crosses with exotic broiler breeder under humid tropical conditions. *Asian Journal of Animal Sciences*, 15: 60-66. doi: 10.3923/ajas.2021.60.66

31. **Uyanga, VA**, Onagbesan, O. M, Abiona, J. A, Egbeyale, L.T, Oke, O. E, Akinjute, O. F. Blastodermal development, hatchability and chick quality of Marshall® broiler breeders of different flock ages during egg storage. 2020. *Journal of Animal Physiology and Animal Nutrition.* 00: 1– 9. doi: 10.1111/jpn.13403

32. **Uyanga, V. A**., O. M. Onagbesan, O. E. Oke, J. A. Abiona, and L. T. Egbeyale. 2020. Influence of age of broiler breeders and storage duration on egg quality and blastoderm of marshall broiler breeders. *Journal of Applied Poultry Research* 29 (3):535-44. doi: 10.1016/j.japr.2020.03.001.

33. Sun, M., H. Jiao, X. Wang, **Uyanga V.A.,** J. Zhao, and H. Lin. 2020. Encapsulated crystalline lysine and dl-methionine have higher efficiency than the crystalline form in broilers. *Poultry Science,* 99:6914–6924 doi: 10.1016/j.psj.2020.09.023.

34. Wang, M., X. Lin, H. Jiao, **Uyanga V.A.,** J. Zhao, X. Wang, H. Li, Y. Zhou, S. Sun, and H. Lin. 2020. Mild heat stress changes the microbiota diversity in the respiratory tract and the cecum of layer-type pullets. *Poultry Science,* 99:7015–7026. doi: 10.1016/j.psj.2020.09.024.

35. Ejeromedoghene, O., J. N. Tesi, **Uyanga V.A.,** A. O. Adebayo, M. C. Nwosisi, G. O. Tesi, and R. O. Akinyeye. 2020. Food security and safety concerns in animal production and public health issues in Africa: A perspective of Covid-19 pandemic era. *Ethics, Medicine and Public Health* 15:100600. doi: 10.1016/j.jemep.2020.100600.

36. Akinyemi F.T., Bello S.F., **Uyanga V.A.,** Oretomiloye C. and Meng H. 2020. Heat stress and gut microbiota: Effects on poultry productivity. *International Journal of Poultry Science,* 19: 294-302. doi:10.3923/ijps.2020.294.302

37. Oke, O. E., Daramola, J. O., **Uyanga, V. A**., Iyasere, O. S., Njoku, C. P., Babatunde, M. B. 2019. Influence of bedding materials on organs weights, meat quality, breast and footpad dermatitis of broiler chickens under hot humid climate. *Agricultura Tropica et Subtropica,* 52 (1), 147–154. doi: 10.2478/ats-2018-0017

38. Iyasere, O. S., Oyeniran, V. J., Oyawale, O., Adeniyi, D., **Uyanga, V. A**. 2018. Social facilitation between commercial broilers and Nigerian indigenous chicks and its effect on their welfare. *Agricultura Tropica et Subtropica*, 51 (4), 139–146. doi:10.2478/ats-2018-0016.

39. Oke O. E., Bamidele F.A., Oluwatosin O.O., Oke F.O, Adeleye O.O., Adegbenjo A.A., **Uyanga, V.A**. and Ogundipe A.A. 2018. Comparative physiological responses of exotic turkeys fed different dietary methionine types under hot humid conditions. *Tropical Agriculture (Trinidad),* 95, (4): 337-349.

40. Sikiru, A.B, Makinde, O. J., Opoola, E., and **Uyanga, V.A**. 2018. In-vitro evaluation of Tamarindus indica as novel resources of use in tropical animal production and management. *Nigerian Journal of Animal Science*. 2018, 20 (3): 251-256

Academic Presentations

Oral presentations

1. **Victoria Uyanga,** Kevin Bolek, and Elizabeth Bobeck. 2024. Abstract 196P: MicroLife Prime direct-fed microbial exerts immunomodulatory effects in broiler chickens challenged with Salmonella Enteritidis. Poultry Science Association 2024 Annual Meeting.

2. Elizabeth Bobeck, **Victoria Uyanga** and Kevin Bolek. 2024. Abstract 256P: A Bacillus-based direct fed microbial altered growth performance and circulating immune cell populations post-Salmonella Enteriditis challenge in broiler chicks. Poultry Science Association 2024 Annual Meeting.

3. Aderanti I. Oni, **Victoria A. Uyanga,** Emmanuel O. Oke and Emmanuela Nwosu. 2024. Abstract 228P: Evaluation of synergistic influence of early age thermal manipulation with selenium and vitamin E on juvenile growth, antioxidant status and physiological responses of heat-stressed broiler chickens. Poultry Science Association 2024 Annual Meeting.

4. **Victoria Anthony Uyanga.** 2023. Case Study 3: In-Ovo Sexing Techniques, at the Adisseo Poultry Leaders of Tomorrow Workshop October 11-13, 2023

5. **Victoria Anthony Uyanga**. 2020. COVID-19 & Agricultural Production in Nigeria. The Third Annual Conference of Belt and Road/South-South Cooperation Agricultural Education, Science and Technology Innovation League (BRSSCAL) November 25-28, 2020, Hainan, China

6. **Victoria Anthony Uyanga.** 2020. L-Citrulline induces hypothermia via dysregulation in NOS-COX-PGE pathway and its down-regulation of ATP production via PGC1α signaling. One Health for Food Systems Conference: Integrating Veterinary, Food, Animal, Agriculture, and Engineering Sciences.

7. **Victoria Anthony Uyanga**, O. M. Onagbesan, J. A. Abiona, L. T. Egbeyale, and O. E. Oke. 2018. Effects of age of broiler breeders and egg storage duration on blastodermal growth of chicken embryo in Proceedings of the 43rd Annual Conference of the Nigerian Society of Animal Production, Owerri, Nigeria 1: 116, APRW 76.

Poster Presentations

1. **Victoria Anthony Uyanga**, Lan Li, Jingpeng Zhao, Xiaojuan Wang, Hongchao Jiao, Okanlawon M. Onagbesan and Hai Lin. 2024. Abstract 435P: Protective effects of L-Citrulline on the intestinal junction markers of broiler chickens fed arginine-deficient diets with or without dexamethasone," Poultry Science Association Annual Meeting, 2024
2. **Victoria Anthony Uyanga**, Jingpeng Zhao, Xiaojuan Wang, Hongchao Jiao, and Hai Lin. 2021. Abstract #362: Effects of dietary L-Citrulline supplementation on the nitric oxide synthesis and mitochondrial bioenergetics in the breast muscle of heat-stressed broilers at the Virtual 2021 PSA Annual Meeting on July 19-22, 2021.
3. **Victoria Anthony Uyanga,** Jingpeng Zhao, Xiaojuan Wang, Hongchao Jiao, and Hai Lin. 2021. Abstract #366: Protective effect of L-Citrulline on the growth performance of cyclic heat-stressed broilers via modulation of hypothalamic GH/IGF-1 pathway proteins at the Virtual 2021 PSA Annual Meeting on July 19-22, 2021.

Digital Communications

1. "Episode #12 - The intersection of poultry nutrition and immunology" by Dr. Victoria Anthony Uyanga. September 6, 2023. The Poultry Nutrition Black Belt Podcast. https://www.youtube.com/watch?v=F2IhcFZG5iM&t=6s

2. Featured blog publication on the INASP AuthorAID platform titled "COVID-19 and poultry production: Emerging issues in African countries" https://www.authoraid.info/en/news/details/1455/

Grants and Research Scholarships

1. **Postdoctoral Research Fellowship** – Department of Animal Science, Iowa State University, May 2023
2. **National Natural Science Fund of China -Research Fund for International Scientists (NSFC-RFIS), 2023.** The role of TRPV1/eNOS signaling in L-citrulline-induced nitric oxide production and thermoregulation in Chickens (Grant No. 32350410421) (PI; Approved)
3. **International Students Grant from Shandong Provincial Government** (Awarded twice), March 2022 and June 2022
4. **Doctoral Fellowship**, Shandong Agricultural University, China, 2019- 2022
5. **Association of African Universities (AAU)** - Small grants for theses and dissertations: 2017/2018 academic year
6. **Association of African Universities (AAU)** - AAU 2017 Graduate Internship Grant

Honors and Awards

1. Second Prize Winner, 2022 Graduate Students Academic and Innovation Award at Shandong Agricultural University. May 2022.
2. Excellent presentation award during the "One Health for Food Systems Online Conference: Integrating Veterinary, Food, Animal, Agriculture, and Engineering Sciences," July 20 – 31, 2020 sponsored by the University of California, Davis, Western Institute for Food Safety and Security.
3. Character Award from Postgraduate Students Association (PGSA-FUNAAB), 2018
4. Award of Honor from the National Agency for Food Drugs Administration and Control (NAFDAC-NYSC CDS), 2015
5. Commendation from Office of the Dean, Student Affairs, University Of Uyo, 2014.
6. National Association of Agricultural Students (NAAS), University of Uyo Chapter, 2010.

Workshops and Trainings for Teaching and Learning

1.	College Classroom (Fall 2024) ***The Center for the Integration of Research, Teaching and Learning (CIRTL) Network***	September to December, 2024
2.	Teaching with Transparency Evidence-Based Approaches to Foster Student Motivation and Engagement. ***The Center for the Integration of Research, Teaching and Learning (CIRTL) Network***	November 2, 2023
3.	Fostering Student Belonging through Inclusive Language. ***The Center for the Integration of Research, Teaching and Learning (CIRTL) Network***	October 11, 2023
4.	College Classroom (Fall 2023) ***The Center for the Integration of Research, Teaching and Learning (CIRTL) Network***	September to December, 2023
5.	Writing an Effective Teaching Philosophy Statement Section 1 (Fall 2023). ***The Center for the Integration of Research, Teaching and Learning (CIRTL) Network***	September 29, 2023
6.	Beyond participation: Inclusive Perspectives on Student Engagement and Feedback (Fall 2023) ***The Center for the Integration of Research, Teaching and Learning (CIRTL) Network***	September 28, 2023
7.	Preparing Your Teaching Demo for a Job Interview (Summer 2023) ***The Center for the Integration of Research, Teaching and Learning (CIRTL) Network***	July 13, 2023

Professional Training and Certifications

1.	Grazing Essentials ***Noble Research Institute***	2024
2.	Beef Cattle Artificial Insemination School ***Lincoln University College of Agriculture***	2024
3.	AVMA Guidelines for the Euthanasia of Animals: 2020 Edition ***AALAS Learning Library***	2023
4.	Biosafety/Biosecurity Basic ***The Collaborative Institutional Training Initiative (CITI Program)***	2023
5.	Investigators, Staff, and Students ***The Collaborative Institutional Training Initiative (CITI Program)***	2023
6.	Working with Swine in Research Settings ***The Collaborative Institutional Training Initiative (CITI Program)***	2023
7.	Time Management Fundamentals ***LinkedIn Learning & Project Management Institute, Inc.***	2023
8.	Strategic Thinking Tips to Solve Problems and Innovate ***LinkedIn Learning & Project Management Institute, Inc.***	2023
9.	Problem-Solving Techniques ***LinkedIn Learning & Project Management Institute, Inc.***	2023
10.	Data Science and Analytics Career Paths and Certifications: First Steps ***LinkedIn Learning***	2023
11.	NIH Guidelines ***Environmental Health and Safety (EH&S) Training, Iowa State University***	2023
12.	Biohazardous Materials: An Introduction ***Environmental Health and Safety (EH&S) Training, Iowa State University***	2023
13.	Biological Risk Assessments for Researchers ***Environmental Health and Safety (EH&S) Training, Iowa State University***	2023
14.	Bloodborne Pathogens and Sharps Safety ***Environmental Health and Safety (EH&S) Training, Iowa State University***	2023
15.	Biohazardous Materials: An Introduction ***Environmental Health and Safety (EH&S) Training, Iowa State University***	2023
16.	Biosafety Cabinets: Safe Use and Maintenance ***Environmental Health and Safety (EH&S) Training, Iowa State University***	2023
17.	Personal Protective Equipment ***Environmental Health and Safety (EH&S) Training, Iowa State University***	2023
18.	Laboratory Safety: Chemical Storage ***Environmental Health and Safety (EH&S) Training, Iowa State University***	2023

19. Laboratory Safety: Spill Procedures 2023
Environmental Health and Safety (EH&S) Training, Iowa State University

20. Laboratory Safety: Core Concepts 2023
Environmental Health and Safety (EH&S) Training, Iowa State University

21. Emergency Response Guide Video 2023
Environmental Health and Safety (EH&S) Training, Iowa State University

22. Fire Safety and Fire Extinguisher Training 2023
Environmental Health and Safety (EH&S) Training, Iowa State University

23. Autoclave Operation for Sterilizing 2023
Environmental Health and Safety (EH&S) Training, Iowa State University

24. Drug-Free Workplace 2023
Environmental Health and Safety (EH&S) Training, Iowa State University

25. Building Supportive Communities: Clery Act and Title IX (Full Course) 2023
Iowa State University - SCORM

26. Fundamentals of Western Blotting Course #1 to #5 2022
BIO-RAD Academy

27. Research Writing in the Sciences 2022
Author Aid, International Network for the Availability of Scientific Publications (INASP)

28. Exploring One Health Lessons 2022
One Health Student Committee (OHSC), University of Guelph

29. Exploring One Health Lessons 2021
One Health Student Committee (OHSC), University of Guelph

30. Global Youth Leadership Programme 2020,2021

31. Techniques for publishing in Highly Selective journals at Cell Press 2020
Elsevier Researcher Academy on Campus

32. Research for Life MOOC: 2019
Elsevier Foundation and Food and Agricultural Organization of the United Nations (FAO)

33. Open data Management, Nutrition and Land 2018
UK Department for International Development (DFID)

34. Research Writing in the Sciences 2018
Author Aid, International Network for the Availability of Scientific Publications (INASP)

35. Project Management Practitioner 2015
Project Management Professionals Institute (PMPI)

36. Level II Competence certificate in Health, Safety and Environment (H.S.E). 2015
Project Management Professionals Institute (PMPI)

37. Graduate Animal Scientist 2014
Nigerian Institute of Animal Science (NIAS)
38. Certification of National Service 2014
National Youth Service Corps (NYSC), Federal Republic of Nigeria

Service to Professional Associations

Committee Membership

1. ASAS 2024 Non-Ruminant Nutrition Program Committee 2024-Present
2. Topical Advisory Panel Member of Agriculture MDPI 2024-Present

Editorial Roles

1. Guest Editor - Animals (SI: Metabolic Disorders of Poultry) 2024-Present
2. Guest Associate Editor - Frontiers in Veterinary Science (Topic: Climate-Smart Livestock Production: Strategies for Enhanced Sustainability and Resilience) 2024-Present
3. Guest Associate Editor -Frontiers in Physiology (Topic: Integrated Approaches to Enhance Poultry Health and Productivity through Promoting Liver-Gut Functions). 2024-Present
4. Handling Editor 2024-Present
    a) Frontiers in Climate - Climate Risk Management
    b) Frontiers in Microbiology - Microorganisms in Vertebrate Digestive Systems

Peer review contributions

1. Poultry Science, Elsevier Publishers 2023-Present
2. Journal of Functional Foods, Elsevier Publishers 2023-Present
3. Frontiers in Veterinary Science, Frontiers Publishers 2023-Present
4. Frontiers in Immunology, Frontiers Publishers 2023-Present
5. Frontiers in Microbiology, Frontiers Publishers 2023-Present
6. Journal of Thermal Biology, Elsevier Publishers 2023-Present
7. Journal of Agriculture and Food Research, Elsevier Publishers 2023-Present
8. Cogent Food and Agriculture, Taylor and Francis Publishers 2023-Present
9. Animals- MDPI Publishers 2023-Present
10. Agriculture - MDPI Publishers 2023-Present

11. Genes - MDPI Publishers	2024-Present
12. Microbiology- MDPI Publishers	2024-Present
13. Veterinary and Animal Science, Elsevier Publishers	2023-Present
14. Acta Tropica Journal, Elsevier Publishers	2022-Present
15. Oxidative Medicine and Cellular Longevity, Hindawi Publishers	2022-Present
16. Journal of Applied Animal Research, Taylor & Francis Publishers	2022-Present
17. Journal of Agricultural Extension and Rural Development, Spring Publishers	2022-Present
18. Journal of Animal Physiology and Animal Nutrition; Wiley Publishers	2021-Present

Volunteer services

1. ***Co-Adviser, Agricultural club*** Department of Agriculture and Environmental Sciences, Lincoln University, Missouri	January 15, 2025
2. ***Staff Adviser, Missouri FFA Judging – Poultry Section*** Department of Agriculture and Environmental Sciences, Lincoln University, Missouri	January to March, 2025
3. ***Invited Peer Reviewer*** 2024 Poultry Science Association Annual Meeting- Immunology Section	April 8, 2024
4. ***Academic Judge*** State Science & Technology Fair of Iowa – Larry Schwinger Seminar competition.	April 5, 2024
5. ***Academic Judge*** 8th Annual Three Minute Thesis (3MT) preliminary competition, Iowa State University	October 25, 2023
6. ***Poultry Section Leader*** Academic Quadrathlon, Department of Animal Science, Iowa State University	October 3, 2023
7. ***English Instructor*** The ENGIn Program: Help Ukrainians Learn English	2023 -2024
8. ***Financial Secretary*** Organization of African Academic Doctors (OAAD)	2021 -2023

9. ***General Secretary*** Agriculture Subgroup-Organization of African Academic Doctors (OAAD)	2020 -Present
10. ***Team Leader*** E-Library Cataloguing Committee, Nigerians in Diaspora (NIDO) Education	2021
11. ***Head-of-Class*** Department of Animal Physiology, Federal University of Agriculture, Abeokuta	2016 - 2018
12. ***Vice President*** NYSC CDS Group- National Agency for Food Drugs Administration and Control (NAFDAC)	2014
13. ***General Secretary*** NYSC CDS Group- National Agency for Food Drugs Administration and Control (NAFDAC)	2014
14. ***General Secretary*** National Association of Agricultural Students (NAAS), University of Uyo	2013

Conferences Attended

1. 2024 Poultry Science Association (PSA) Annual Meeting. Held at The Galt House Hotel, Louisville, Kentucky, USA from July 15-18, 2024.
2. 2024 Profitability, Experience, Advancement and Knowledge (PEAK) Convention organized by the Midwest Poultry Federation (MPF) at Minneapolis Convention Center from April 17 to19
3. 2023 Iowa Egg Industry Symposium organized by the Iowa State University Extension and Outreach, November 9, 2023.
4. Poultry Leaders of Tomorrow Workshop, organized by Adisseo Feed Solutions, USA from October 11-13, 2023
5. 2023 Iowa Swine Day organized by the Iowa State University Extension and Outreach, Iowa Pork Industry Center, June 29, 2023.
6. 2023 Georgia Precision Poultry Farming Conference –Virtual, organized by Department of Poultry Science, University of Georgia; May 2, 2023
7. Advancing Climate Smart Agriculture: FAO E-Learning Academy, November 8, 2022
8. Symposium on Biotechnology and Modern Agriculture, Shandong Agricultural University. November 27, 2022

9. The African Biogenome Project. Organization of African Academic Doctors (OAAD), Paper to Product Initiative, December 8, 2021

10. Poultry Science Association Annual Meeting-Virtual, July 19-22, 2021

11. Exploring One Health Learning Series, One Health Student Committee, University of Guelph, May 17th - 30th, 2021

12. The 9th National Member Congress and 2021 academic seminar of livestock environmental hygiene branch of China Animal Husbandry and Veterinary Society, Shandong, China. April, 16th 2021

13. The Third Annual Conference of Belt and Road/South-South Cooperation Agricultural Education, Science and Technology Innovation League (BRSSCAL) November 25th-28th, 2020, Hainan China

14. One Health for Food Systems Online Conference: Integrating Veterinary, Food, Animal, Agriculture, and Engineering Sciences," July 20 - 31, 2020. University of California, Davis, Western Institute for Food Safety and Security

15. 2019 Wuhan Forum of World Renowned Scientist Lecturing in Hubei. International Conference on Green Feeds and Animal Products Safety, Wuhan, China

16. 43rd Annual Conference of the Nigerian Society for Animal Production (NSAP), Owerri, Nigeria. 2018

17. The Maiden Capacity Workshop by the Nigerian Society for Environmental Conservation (NSEC), 2018

18. 5th Nigerian Women in Agricultural Research and Development (NiWARD) Conference, 2018.

19. 41st Annual Conference of the Nigerian Society for Animal Production (NSAP), Ibadan, Nigeria, 2016.

20. The 4th and 5th ASAN-NIAS Joint Annual Conferences, 2014; 2015.

21. The Nigerian Society for Animal Production (NSAP) Conference, 2014.

Involvement with Relevant Scientific Communities

1.	Visit to Iowa Turkey Federation, Iowa	November 28, 2023
2.	Visit to Qingdao Runbot Biotechnology Co., Ltd, Shandong, China	April 6, 2023
3.	Visit to Tianrui Agro-Manufacturing Group, Qingdao-Jimo district, Shandong, China	April 7, 2023
4.	Visit to Jinglan Farms in Manzhuang town, Daiyue district, Tai'an City, Shandong, China.	March 25, 2023
5.	Facilitator, Study at SDAU: 2nd edition of Global Universities Programs and Scholarship Series (GUPASS) involving the Organization of African Academic Doctors (OAAD) and Shandong Agricultural University (SDAU). https://africanacademicdoctors.org/sdau-china-at-oaad-gupass/	March 24, 2023
6.	Visit to Huayu Agricultural Technology Co., Ltd, Hebei, China	March 8, 2022
7.	Facilitator, Africa Biogenome Project: Paper To Product Initiative Series of the Agricultural Group, Organization of African Academic Doctors (OAAD)	December 8, 2021

Professional Membership

1. American Society of Animal Science (ASAS)
2. Poultry Science Association (PSA)
3. World Poultry Science Association - Canada (WPSA)
4. The Global Academy- Working on Global Goals
5. National Postdoctoral Association (NPA)
6. National Center for Faculty Development & Diversity (NCFDD)
7. Organization of African Academic Doctors (OAAD)
8. Nigerian Institute of Animal Science (GAS-NIAS)

Interest/ Hobbies

1. Tutoring
2. Reading
3. Surfing the internet
4. Traveling
5. Singing and listening to music

Core competencies

1. Proficient in livestock and poultry related task
2. Hardworking and detail-oriented personality
3. Effective communication skills
4. Excellent leadership and management skills
5. Responsible conduct of research
6. Easily adaptable and willing to learn

Computer skills (hardware and software)

1. Office suites - Microsoft Office, WPS office
2. Presentation and designing software - PowerPoint, Canvas, Adobe Premier, Biorender, Adobe Photoshop
3. Word processing software - Microsoft Word, Outlook, Grammarly, Endnote
4. Data management, Analytics, and Visualization - SAS, GraphPad Prism, FlowJo, R software, Excel
5. Communication and collaboration tools - Zoom, MS Teams, Skype
6. Email management -Outlook, Gmail, Yahoo
7. Social media management- LinkedIn, Research Gate

Skills

1. Livestock and poultry management
2. RNA extraction and RT-qPCR techniques
3. Enzyme-linked immunosorbent assay
4. Western blotting technique
5. Flow cytometry
6. Immunohistochemistry and Histology
7. SeaHorse Metabolic Assay
8. Light and fluorescent microscopy
9. Biotelemetry and thermal Imaging
10. Academic writing and Research communication

Vision for developing an internationally recognized and externally funded research program focused on non-ruminant nutrition and/or nutrient management

During my graduate program and professional career, I have developed and executed research programs that addressed key issues in animal nutrition and production. I attribute the success of my research projects to key pillars including the scientific approach adopted from research conceptualization to execution, engagement in active collaboration with relevant stakeholders, and time-sensitive research decisions to meet scientific relevance. My research projects have addressed:

(1) Optimizing amino acid nutrition in broiler and laying hens during environmental stress

High temperature is an important environmental stressor affecting poultry production. In this research project, chickens were exposed to high ambient temperatures during conventional summer heat or housing in environmentally controlled chambers to induce heat stress conditions. The non-essential amino acid, L-citrulline (found naturally in watermelon rinds) was provided to laying hens and broiler chickens to regulate appetite and alleviate the negative effects of heat stress. We expanded on these observations to develop a strategic nutrition program for laying hens and broiler chickens that influenced growth performance, antioxidant status, amino acid metabolism, thermal homeostasis, and nutrient absorption. The novelty of this research was the discovery that L-citrulline can augment endogenous arginine supply and nitric oxide production in both broilers and laying hens. I intend to expand on this project with the use of biotelemetry, digestibility trials, precision nutrition, and molecular biology tools to demonstrate the potentials of amino acids such as arginine and citrulline in animal nutrition. Additional investigations using dietary formulation of low-crude protein diets, low-cost crystalline amino acids, encapsulated amino acids, and alternative protein feedstuffs will be explored to foster an understanding of amino acid metabolism and its impact on environmental sustainability.

(2) Functional additives to support poultry metabolism, productivity and immunocompetence

To support the breeding strategy of developing "long-life" layer strains with increased laying persistency and sustained egg quality, this research was sponsored by Kent Nutrition Group to examine feed additives that would improve the productivity of aged hens. Through this work, we successfully established nutritional regimens that would support calcium metabolism, bone mineralization, and eggshell quality in late-laying hens. Understanding that dietary calcium supply is essential for bone development and egg production in aged laying hens, we recently demonstrated how low dietary calcium and endotoxin challenge would dysregulated bone homeostasis and metabolism, with detrimental effects on the performance and eggshell quality of aged laying hens. Moreso, given the understanding that the genetics and immune status of chickens are interconnected, the cellular metabolism of distinct poultry genetic lines were

investigated, to determine the variations in their metabolic profiles and immune responses using the Seahorse metabolic assay.

In another industry-sponsored project from Phibro Animal Health Corporation, we examined the mechanism of action of probiotics during salmonella colonization in chickens using broiler experiments, gene and protein expression analysis, microbiota sequencing, and immunophenotyping of leukocyte markers. Alongside this, we developed studies to demonstrate that dietary supplementation with fulvic acid (a humic substance found in organic waste), could improve nitrogen and riboflavin metabolism while minimizing ammonia production in broiler chickens. This was ultimately effective in maintaining intestinal health and modulating the intestinal microflora of broilers. I intend to continue building this research by examining nutritionally nonessential amino acids, functional feed ingredients, and nutraceuticals that possess physiological and regulatory roles to improve the productivity, health, and welfare outcomes of farm animals, especially in this antibiotic-free era of animal production.

(3) Evaluation of farming practices to support free-range poultry.

As part of the Organic Agriculture Research and Extension Initiative (OREI) research project to solve critical organic agriculture issues, we integrated poultry production with vegetables, and cover cropping practices using pasture-raised poultry systems. The objective was to compare the performance, physiological, and economic outcomes of broiler chickens raised in outdoor pastures versus conventional indoor settings. This project revealed that the plant-animal integrated system is a good alternative to the traditional confinement production system, enhancing poultry productivity, welfare and behavior, land use efficiency, and sustainability of farm agriculture. In this OREI project, we implemented a One Health approach which integrated professionals from diverse fields including Animal Science, Agronomy, Horticulture, Soil Science, and Meat Science to gain comprehensive insight into the interconnectedness of the animal, human, and environmental interface and provide practical recommendations to farmers that would improve their welfare and productivity in alternative farming systems. I envision collaborating with researchers from diverse disciplines to develop integrated solutions to animal nutrition and production challenges. Additionally, some of my research on probiotics and nutraceuticals aimed at enhancing animal health and food security involves collaboration with international partners. Together, we address global challenges such as climate change, one health concepts, sustainable agricultural practices, and production issues. I plan to leverage these interdisciplinary platforms to driving transformative researches in non-ruminant nutrition and nutrient management.

My goal is to develop an advanced nutrition research program focused on consolidating animal research, molecular biology, and functional genomics tools. To progress this endeavor, I will utilize my extensive experience in animal nutrition, stress physiology, and immunology. I plan to grow my research efforts by developing and testing comprehensive nutritional programs

incorporating nutritionally nonessential amino acids, functional feed ingredients, and immunomodulatory agents that would support animal productivity, under health and challenge conditions. I intend to utilize my skills and knowledge of biotelemetry, feed digestibility, nutrient metabolism, and molecular biology techniques to uncover the mechanisms through which dietary additives influence production outcomes in animals, and further explore how nutrients interact with the genetic makeup to affect traits like growth, digestibility, and metabolism. This area holds potential for precision nutrition approaches and improvements to maximize performance based on analyzing dietary intake and nutrient composition. The successes and scientific achievements from my research program are demonstrated by my publications in established peer-reviewed journals, a strong record of scientific relevance evidenced by an increasing number of citations, and a growing record in attracting extramural funding (kindly refer to the curriculum vitae for details).

I intend to employ my expertise in animal nutrition and physiology to develop and execute a functional research program that addresses industry and scientific concerns in non-ruminant nutrition and nutrient management. The findings from these investigations will be disseminated through presentations at relevant conferences such as the American Society of Animal Science (ASAS) Meetings; and publications in peer-reviewed journals. Overall, I aim to establish a research lab that serves as a training ground for students and collaborates closely with industry partners to test innovative nutritional solutions in real-world settings. I plan to actively pursue research funding from governmental agencies (including USDA, NSF, NRC-SARE, and NIH), organizations, industry sponsors, and collaborative partnerships with other researchers. I also intend to develop a strong collaboration with industry partners in Indiana State such as Elanco, Corteva Agriscience, AgriNovus Indiana, and Primient, among others, creating room for industry-sponsored research that will address the emerging challenges of the animal nutrition industry.

I envision a non-ruminant nutrition and/or nutrient management research program guided by three principles: (1) developing research that is based on sound scientific rigor and complies with relevant regulations and ethical standards, (2) studies that are relevant and applicable to the animal industry and would benefit the state of Indiana, the United States, and the global food system, and (3) fostering collaborations and sharing findings with other researchers, industry partners, and academic institutions. I intend to utilize a multidisciplinary approach in my research to provide a more comprehensive understanding of animal nutrition and nutrient management, as well as, incorporate new technologies and approaches to my studies such as the advances in nutritional analysis, feed composition databases, genomic tools, study models, and precision feeding technologies. With these, I will effectively establish an internationally recognized research program focused on non-ruminant nutrition and/or nutrient management that contributes to the advancement of sound scientific knowledge and the improvement of global food systems.

Teaching Philosophy

Over the years, I have had several teaching experiences with various age groups that have helped me appreciate and develop my skills as an instructor. As the first child with three younger siblings, my passion for teaching began with me training my younger siblings on their house chores and assisting with their homework. I have been able to groom and grow this passion over the years, throughout my graduate education and professional career. As an educator, my desire to teach surpasses merely passing on information, rather, it entails a transformative process where I get to share ideas, concepts and interact with other people in a wholesome manner in order to shape their thinking, philosophy, and outlook of life.

After my bachelor's graduation, I served as an Animal Husbandry Instructor to High school (9 and 12 grade) students as a part of the 1-year mandatory national service to my home country (Nigeria). I prepared the lesson notes, reviewed the course materials, prepared their examinations and quizzes, and graded them accordingly. I also worked as an Assistant Examiner with the West African Examination Council (WAEC-the governing examination board overseeing education in West African Countries) to examine, score, and grade high school candidates in 2017 and 2018. During my Master's program at the Federal University of Education, Abeokuta, I enrolled for a professional diploma in education which involved a 3-month teaching internship. During this period, I taught agriculture to 9th-grade students and was responsible for their course content, evaluation, assessment, and grading. I also got to delve deeper into understanding the teaching-learning process and the basis of pedagogy for being an effective teacher. I further honed my teaching skills while working as an Associate Professor of Animal Science at Shandong Agricultural University (SDAU), China, where I got to teach graduate students (offered in-person and distance learning). I taught Academic writing in English for 3.5 hours twice weekly to graduate students. This presented me with the opportunity to teach students in person and via virtual platforms (especially during the COVID-19 outbreak). I participated in undergraduate and graduate mentoring, and initiated research activities to foster the internationalization program of the institution. My teaching experience at SDAU prepared and equipped me with the intercultural mindset, experience and leadership required for teaching diverse students.

In my role as a Postdoctoral Research Associate at Iowa State University, I worked as a teaching assistant for the course, ANS 2230: Poultry Science, where I interacted with the students for 2.5 hours weekly to introduce them to core concepts in poultry sciences and conducted laboratory practical on poultry-based topics. This course provided an introduction to modern production trends with a focus on broiler, layer, and turkey industries. Aside from the classroom lectures, we employed a variety of teaching approaches for the active engagement of the students including project-based learning where students were allowed to participate in broiler rearing, feed

formulation, meat quality assessment, egg quality test, and egg dye test during the classes. This allowed the students to interact directly with the animals, both individually and in small groups creating a dynamic learning environment. Following a pre-training period, the students were responsible for their feeding trials, and weekly body weight and feed intake data collection. Small group discussions and peer-to-peer teaching activities were actively encouraged as the students often came together to discuss their projects, examine their research data, and put together the presentations for their work. We also organized field trips to the Iowa Turkey Federation and the Robert T. Hamilton Poultry Teaching and Research Farm for students to gain experiential learning through direct interaction with industry professionals.

In my current role as a teaching faculty at the Department of Agricultural and Environmental Sciences, Lincoln University of Missouri, I develop and deliver undergraduate and graduate training in animal sciences courses including AGR-101: Introduction to Animal Science; AGR-300: Meat Science; AGR-308: Beef Cattle Production; AGR 339: Poultry Production; AGR 320A: Animal Breeding and Genetics; AGR 331: Animal Feeds & Nutrition, and AGR 421: Ethics and Welfare in Animal Agriculture. For the animal production courses (Beef and Poultry Production), I have updated the curricula to incorporate laboratory practices and small-group research projects to create undergraduate research experiences. In addition to this, we are working towards acquiring laboratory instruments and instructional materials necessary to create course-based research experiences for undergraduate education. This initiative creates an experiential learning environment that emphasizes the relevance of research in addressing animal industry needs, as students will gain practical experience that prepares them for careers in the agricultural sector.

To evaluate students' success and academic progress, I assess the student's ability to master foundational knowledge, apply critical thinking skills, and engage in hands-on learning experiences at the undergraduate level. For graduate students, I examine the student’s efforts in advancing scientific inquiry, developing independent research capabilities, and contributing to scholarly discourse through publications and presentations. To accomplish this, I integrate active learning strategies such as case scenarios, hands-on laboratory exercises, and collaborative research projects. As an instructor and mentor, I facilitate student success by establishing and communicating clear learning objectives and student expectations at the beginning of each course or research project. In addition, I provide constructive feedback and establish opportunities for students to gain experiential learning. I employ educational tools including regular assessments, interactive discussions (such as during research team and journal club meetings), and one-on-one mentoring sessions that allow me to identify student strengths and attend to areas needing improvement. I conduct formative evaluation using tests, quizzes, and lab practical scores to monitor student’s engagement, learning outcomes, and academic performance. Summative evaluations using laboratory practicum, examinations, research presentations, and research reports are completed at the end of each semester to evaluate students’ knowledge, skill

acquisition, and technical competencies. In addition, an anonymous, self-assessment survey is completed by the student's pre/post-course initiation to gather qualitative feedback on the effectiveness of the teaching-learning process for each course. Consequently, students' assessments and examinations are structured to evaluate students' ability to apply what they have learned rather than simply demonstrating their ability to recall lessons.

In addition to my teaching roles, I have had the privilege of serving as an academic judge for several competitions, further underscoring my commitment to academic excellence, mentorship, and student development. At Iowa State University, I served as an academic judge for student competitions such as the State Science & Technology Fair of Iowa – Larry Schwinger Seminar competition; the 8th Annual Three Minute Thesis (3MT) preliminary competition, and the Poultry Academic Quadrathlon. At Lincoln University, I serve as the co-advisor to the Tri-Agriculture Students Club, the Poultry Section Advisor for Missouri FFA Judging, and the Staff Advisor for Undergraduate Animal Science majors. In these roles, I evaluated student projects, provided constructive feedback, and recognized outstanding achievements. I provide feedback on student's presentation skills and research clarity, helping them refine their communication abilities. These roles have allowed me to mentor young scientists and encourage their passion for science and technology. I actively participate in outreach initiatives targeting high school students, community colleges, and underrepresented groups as a key to student recruitment and fostering engagement. Additionally, I integrate interdisciplinary learning by collaborating with other faculties for co-teaching initiatives, and industry partners (such as the Missouri Beef Industry Council (MBIC) and Missouri Forage and Grassland Council (MFGC)) to expose students to trending industry issues, interdisciplinary projects, and research methodologies.

I am committed to continuous growth and self-development as such my recent trainings with the Center for the Integration of Research, Teaching, and Learning (CIRTL) Network for programs such as "The College Classroom (a 12-week course)", "Beyond Participation: Inclusive Perspectives on Student Engagement and Feedback", "Teaching with Transparency: Evidence-Based Approaches to Foster Student Motivation and Engagement", and "Fostering Student Belonging through Inclusive Language". My active engagement in these pedagogical teachings has further honed my teaching skills and knowledge of educational approaches for graduate and undergraduate education. In my teaching and research practice, I aim to employ a variety of pedagogical approaches to promote diverse learning styles and allow the students to contribute to the educational experience. My goal as a teacher is to inspire my students to self-study and critical thinking. Students should be exposed to real-life scenarios and practical conditions to integrate the poultry science lectures and their practice, further reinforcing their learnings and scientific understanding. I aim to inspire a love for learning, critical thinking, and ethical responsibility in my students, equipping them with the knowledge and skills necessary to excel in the field of poultry science and make a positive impact on society.