IBUKUN M. OGUNADE Ph.D.

CURRENT POSITION

Assistant Research Professor of Livestock Production (September 2020 - present)
Division of Animal and Nutritional Science
West Virginia University, Morgantown, WV

EDUCATION

Doctor of Philosophy, **Animal Sciences** (May 2017)
University of Florida, Gainesville, USA
Dissertation: Effects of mycotoxin adsorbents on aflatoxins and of microbial additives on *Escherichia coli* in feeds for dairy cows

Master of Science, Animal Nutrition (August 2011)
Distinction
University of Agriculture, Abeokuta, Nigeria
Thesis: Reducing shedding of *Salmonella* organisms in food animals with the use of probiotics and prebiotics

Bachelor of Science (Hons), **Animal Nutrition** (December 2008)
Summa Cum Laude
University of Agriculture, Abeokuta, Nigeria

GRANTS, AWARDS, AND HONORS

Funded Research Grants

1. **Land O' Lakes Inc.**: Using metatranscriptomics, metagenomics, and metabolomics to decipher the effects of a blend of direct-fed microbial and fermentation products on performance, nutrient utilization, and health of receiving beef cattle-**$146,660.00** (2019). **Role: PI**. **Completed**.

2. **Land O' Lakes Inc.**: Effects of live yeast supplementation on genetic and functional analysis of the rumen microbiota in beef cattle- **$8,800.00** (2018 – 2019). **Role: PI**. **Completed.**

3. **Alltech Inc.**: Metatranscriptomics of sub-acute ruminal acidosis in beef cattle- **$14,500.00** (2018 – 2019). **Role: PI**. **Completed**

4. **USDA/NIFA grant (1890 land-grant institutions)**: Using metatranscriptomics and metabolomics to decipher the mode of action of feed additives for ruminants - **$320,000.00** (2017 – 2020). **Role: PI**.

Non-funded Grants

1. **USDA Capacity Building Grant**: Occurrence of antimicrobial resistance and evaluation of mitigation strategies in dairy and beef cattle – $390,000.00 (2017). Role: PI.

2. **USDA Capacity Building Grant**: Towards sustainable aquaculture: systematic optimization of plant-based diets for pacific white shrimp, *Litopenaeus vannamei* B.– $500,000.00 (2018). Role: Co-PI. (Intended Task: Digestive tract microbiota and data analyses).

PROFESSIONAL RESEARCH EXPERIENCE

Assistant Research Professor of Livestock Nutrition (May 2017 - present)
Research emphasis
My research is focused on understanding how nutritional interventions, including the use of feed additives, impact the gastrointestinal microbiome and metabolome of ruminant to improve efficiency of ruminant production systems. Additionally, my research program applies metabolomics and metagenomics to determine the biological mechanisms explaining differences in growth and feed efficiency of beef cattle.
Extension emphasis
Expanding education experiences in ruminant nutrition for limited resource and minority farmers.

Graduate Research Assistant (July 2013 – May 2017)
Ruminant Nutrition Research Laboratory
Department of Animal Sciences, University of Florida
Designed and conducted applied dairy nutrition research studies related to mycotoxin mitigation strategies, feed and gastrointestinal microbiology, and evaluation of feed additives.

Junior Research Fellow (May 2010 – June 2013)
Department of Animal Nutrition
University of Agriculture, Abeokuta, Nigeria
Designed and conducted animal nutrition research studies related to mitigation strategies for pathogen shedding in food animals.

PROFESSIONAL TEACHING EXPERIENCE

Instructor (Fall 2017 - present)
Principle of Animal Nutrition
Kentucky State University
Students learn about nutrients required by livestock, their functions, interrelationships and the processes of their utilization; feedstuff composition and their use in diet and ration formulation.

Instructor (Fall 2019 - present)
Advanced Techniques in Ruminant Nutrition
Kentucky State University
A graduate class on various advanced nutritional techniques used in ruminant nutrition research studies

Teaching Assistant (Fall 2016)
Principle of Animal Nutrition
Recommended, pre-professional course for Veterinary School

University of Florida
Assisted in teaching feedstuff and diet formulation laboratory section of this class.

Teaching Assistant (Spring 2016)
Food Animal Nutrition and Feeding
University of Florida
Taught feeds and feeding lab course in which students learned the following;

- Basic characteristics of forages and feeds
- Various methods used for analyzing nutrient contents of feeds
- Nutrition of dairy and beef cattle at different physiological stages
- Methods for formulating feed rations manually as well as utilizing current NRC feed evaluating software for formulating ration for baby calf, replacement heifers, transition and lactating cows.

Content Tutor (Spring 2016)
University of Florida Athletic Association

- Assisted University of Florida student athletes in understanding food animal nutrition course contents.
- Motivated and provided strategy skills for studying.
- Created study guides and timelines to ensure student athletes' success.

Assistant Lecturer (July 2010 – June 2013)
Department of Animal Nutrition
University of Agriculture, Abeokuta, Nigeria

- Taught undergraduate animal nutrition and feeding courses.
- Prepared class assignments and examinations to enhance students' understanding of feed and feeding of different livestock.

STUDENTS ADVISING AND RESEARCH TRAINING

Undergraduate students

1. Morgan Atkins, undergraduate research scholar. January 2020 – Present. "Response of receiving beef cattle to dietary supplementation of a blend of mannan and glucan"

2. Kyle Cannon, undergraduate research scholar. **May 2018 – Present**. "Rumen fluid metagenomics and metabolomic profile of beef cattle fed live yeast product"

3. Megan McCoun, undergraduate research scholar. **May 2018 – Present**. " Effects of supplemental yeast culture on plasma metabolomic profile of beef cattle"

4. Esther Olasoji, undergraduate McNair scholar. **January – December 2016**. "Antimicrobial activity of tropical spice extracts against *Escherichia coli* O157:H7 and spoilage yeast"

5. Shavone Taylor**,** undergraduate Honors student. **January – December 2016**. "Anti-methanogenic effects of tropical plant extracts"

Graduate students

1. James Adeyemi (M. Sc.), **Fall 2018 – Summer 2020**. "Using an integrated multi-omics approach to evaluate the effects of a blend of direct fed microbial and fermentation products on the performance and health of beef cattle"

2. Modoluwamu Idowu (M. Sc.), **Fall 2019 – Summer 2021**. "Improving utilization of forage-based diet using a combination of *S. cerevisiae*-based additive and *Aspergillus*-based enzyme preparations"

AWARDS MY ADVISEES RECEIVED

1. Second place in undergraduate poster research presentation, Kentucky Academy of Science (2018). Received by **Megan McCoun**.

2. Third place in undergraduate oral research presentation, MANRRS national career fair and training conference (2016). Received by **Shavone Taylor**.

3. First place in undergraduate oral presentation, Life Science category, Annual South-eastern Association of Educational Opportunity Program Personnel (SAEOPP) conference (2016). Received by **Esther Olasoji**.

PUBLICATION

Book chapter

1. **I. M. Ogunade**, O. C. M. Queiroz, and K. G. Arriola. Lactic acid bacteria and silage fermentation: Lactic Acid Bacteria: Microbiological and Functional Aspects. CRC Press, 2019. https://doi.org/10.1201/9780429057465.

Manuscript(s) under review

1. Megan McCoun and **I. M. Ogunade**. 2020. Divergence in average daily gain in beef steers is associated with altered plasma carboxyl- and hydroxyl-metabolome (**Metabolomics**).

2. **I. M. Ogunade**, A. P Cervantes, S. O. Peters, Megan McCoun. 2020. Effects of *Saccharomyces cerevisiae*-based direct fed microbial blend on ruminal metatranscriptome and carboxyl-metabolome in beef steers (**Translational Animal Science**).

3. Megan McCoun and **I. M. Ogunade**. 2020. Effect of adding live *Saccharomyces cerevisiae* with or without *Aspergillus*-based enzyme extracts on rumen fermentation, plasma metabolome, and *in vitro* fiber digestibility in beef steers fed high forage diet (**Applied Animal Science**).

Refereed Journal Articles (*indicates as a corresponding author)

1. **I. M. Ogunade***, Megan McCoun, Modoluwamu Idowu, and S. O. Peters (2020). Comparative effects of two multi-species direct-fed microbial products on energy status, nutrient digestibility, and ruminal fermentation, bacterial community and metabolome of beef steers. Journal of Animal Science (**Accepted: June 15, 2020**).

2. **I. M. Ogunade***, Megan McCoun (2020). Average daily gain divergence in beef steers is associated with unique plasma amine/phenol-metabolome and whole blood immune-related gene expression. Transl. Anim. Sci. 2020.4:1-12 doi: 10.1093/tas/txaa074.

3. J. A. Adeyemi, S. O. Peters, D. Marcos, Andres P. Cervantes, and **I. M. Ogunade* (**2020). Effects of a blend of *Saccharomyces cerevisiae*-based direct-fed microbial and fermentation products on plasma carbonyl-metabolome and fecal bacterial community of beef steers. J. Anim. Sci. and Biotech. 11:14. https://doi.org/10.1186/s40104-019-0419-5.

4. J. A. Adeyemi, David L. Harmon, D. M. Paulus Compart, **I. M. Ogunade*** (2019). Effects of a blend of *Saccharomyces cerevisiae*-based direct-fed microbial and fermentation products in the diet of newly weaned beef steers: Growth performance, whole-blood immune gene expression, serum biochemistry and plasma metabolome. J. Anim. Sci. 97:4657–4667. https://doi.org/10.1093/jas/skz308.

5. **I. M. Ogunade***, Y. Jiang, A. A. P. Cervantes (2019). LC-MS/MS-based plasma metabolomics reveals the effects of sequestering agents on the metabolic status of dairy cows challenged with aflatoxin B_1. Toxins 11:693; https://doi.org/10.3390/toxins11120693.

6. **I. M. Ogunade*,** Jerusha Lay, Kenneth Andries, Christine McManus, Frederick Bebe (2019). Effects of live yeast on differential genetic and functional attributes of rumen microbiota in beef cattle. J. Animal Sci. and Biotech. 10:68. https://doi.org/10.1186/s40104-019-0378-x.

7. **I. M. Ogunade*,** Y. Jiang, J. A. Adeyemi, D. Vyas, A. T. Adesogan (2019). Biomarker of aflatoxin Ingestion: 1H NMR-based plasma metabolomics of dairy cows fed aflatoxin B_1 with or without sequestering agents. Toxins 10:545. doi:10.3390/toxins10120545.

8. **I. M. Ogunade***, H. Schweickart, M. McCoun, K. Cannon, and C. McManus (2019). Integrating 16S rRNA sequencing and LC-MS-based metabolomics to evaluate the effects of live yeast on rumen function in beef cattle. Animals 9, 28. doi:10.3390/ani9010028.

9. **I. M. Ogunade***, Andres Pech-Cervantes, H. Schweickart (2019). Metatranscriptomics of sub-acute ruminal acidosis in beef cattle. Animals 12:9. doi: 10.3390/ani9050232.

10. Andre Oliveira, J. Campos, **I. M. Ogunade**, D. S. Caixeta, E. P. Viana, and K. C. Alessi (2019). Performance and utilization of nutrients in dairy cows fed with sunflower meal. The Journal of Agricultural Science. https://doi.org/10.1017/S0021859619000091.

11. Yun Jiang, **I. M. Ogunade**, K. G. Arriola, A. A. Pech Cervantes, D. H. Kim, X. Li, D. Vyas, A. T. Adesogan (2019). Short Communication: Effects of a physiologically relevant concentration of aflatoxin B1 with or without sequestering agents on *in vitro* rumen fermentation of a dairy cow diet. J. Dairy Sci. https://doi.org/10.3168/jds.2019-17318.

12. Andres Pech-Cervantes, **I. M. Ogunade**, C.F. Gonzalez, D. H. Kim, Y.Jiang, D. Vyas, and A. T. Adesogan (2019). An expansin-like protein expands forage cell walls and synergistically increases hydrolysis, digestibility and fermentation of livestock feeds by fibrolytic enzymes. Plos One 14:e0224381.doi.org/10.1371/journal.pone.0224381.

13. Y. Jiang, **I. M. Ogunade,** D. H. Kim, Pech-Cervantes A. A, K.G. Arriola, L.F. Ferraretto, D.W Vyas and A.T. Adesogan (2019). Effect of sequestering agents based on a *Saccharomyces cerevisiae* fermentation product and clay on the ruminal bacterial community of lactating dairy

cows challenged with dietary aflatoxin B_1. J. Dairy Sci. https://doi.org/10.3168/jds.2019-16851.

14. Pech-Cervantes A.A., C. F. Gonzalez, **I. M. Ogunade**,,Y. Jiang, D.H. Kim, Oliveira A., , D. Vyas, and A.T. Adesogan (2019). Exogenous fibrolytic enzymes and recombinant bacterial expansins synergistically improve hydrolysis and *in vitro* digestibility of bermudagrass haylage. J. Dairy Sci. 102:8059-8073.

15. R. N. S. Torres, H.M.Silva, A. B. Donadia, L. Menegazzo, M. L. M. Xavier, D. C. Moura, K. C. Alessi, S. R. Soares, **I. M. Ogunade** (2019). Factors affecting drinking water intake and predictive models for lactating dairy cows. Animal Feed Sci. Tech. https://doi.org/10.1016/j.anifeedsci.2019.05.017

16. **I. M. Ogunade*,** Hank Schweickart, K. A. Andries, J. Lay and J. A. Adeyemi (2018). Monensin alters the functional and metabolomic profile of rumen microbiota in beef cattle. Animals 8:11. doi: 10.3390/ani8110211.

17. Y. Jiang, **I. M. Ogunade**, D. H. Kim, D. Vyas, and A. T. Adesogan (2018). Effects of sequestering agent based on *Saccharomyces cerevisiae* product and clay on the health and performance of dairy cows challenged with dietary aflatoxin B_1. J. Dairy Sci. 101:3008-3020.

18. **I. M. Ogunade,** C. Martinez-Tuppia, O. C. M. Queiroz, P. Drouin, and A. T. Adesogan (2018). Mycotoxins in silage: Occurrence, prevention and mitigation. Silage Review. J. Dairy Sci. 101: 4034-4059.

19. F. Driehuis, J. M. Wilkinson, Y. Jiang, **I. M. Ogunade** and A. T. Adesogan (2018). Animal and human health risks from silage. Silage Review. J. Dairy Sci. 101: 4093-4110.

20. O. C. G. Queiroz, **I. M. Ogunade**, Z. G. Weinberg and A. T. Adesogan (2018). Foodborne pathogens in silage and their control with silage additives. Silage Review. J. Dairy Sci. 101: 4132-4142.

21. **I. M. Ogunade**, D. H. Kim, Y. Jiang, Z. G. Weinberg, K. C. Jeong, A. T. Adesogan (2018). Bacterial diversity and composition of alfalfa silage as analyzed by Illumina MiSeq sequencing: Effects of *Escherichia coli* O157:H7 and silage additives. J. Dairy Sci. 101: 2048-2059.

22. Y. Ben-Meir, E. Jami, Y. Portnik, S. Yaacoby, Y. Chen, **I. M. Ogunade**, A. T. Adesogan, Z. Weinberg (2018). Effect of silage inoculants on the quality of baled wholecrop wheat silages and milking cow performance. Grassland Science. doi: 10.1111/grs.12196.

23. J. J. Romero, M. A. Zarate, **I. M. Ogunade**, K. G. Arriola, A. T Adesogan (2018). Tropical plant supplementation effects on the performance and parasite burden of goats. Australasian J. of Animal Sci. 31: 208-217.

24. J. G. Souza, L. M. Olini, C. V. Araujo, S. Mendonca, L. S. Cabral, **I. M. Ogunade,** Andre Oliveira (2017). Performance, hepatic function and efficiency of nutrient utilization of grazing

dairy cows fed concentrates supplemented with alkaline-treated Jatropha Curcas L. meal. Animal Production Science 58:2280-2287.

25. Y. Jiang, **I. M Ogunade**, K. G. Arriola, C. R. Staples, D. Vyas, A. T Adesogan (2017). Effects of the dose and viability of *Saccharomyces cerevisiae*. II Ruminal fermentation, performance of lactating dairy cows and correlations between ruminal bacteria and performance measures. J. Dairy Sci. 100: 8102-8118.

26. D. C. Moura, T. S. Fonseca, S. R. Soares, H. M. Silva, F.J.G. Vieira, L. A. Botini, A. P. Sinhorin, **I. M. Ogunade**, and A. S. Oliveira (2017). Crambe meal subjected to chemical and physical treatments in sheep feeding. Livestock Science 203: 136-140.

27. A. S. Oliveira, Z. G. Weinberg**, I. M. Ogunade**, A. A. P. Cervantes, K. G. Arriola, Y. Jiang, D. H. Kim, M. C. M. Gonçalves, D. Vyas, and A. T. Adesogan (2017). Meta-analysis of the effect of homolactic and facultative heterofermentative lactic acid bacteria inoculation on silage quality and dairy cow performance. J. Dairy Sci. 100: 4587–4603.

28. **I. M. Ogunade**, D. H. Kim, Y. Jiang, Z. G. Weinberg, K. C. Jeong, A. T. Adesogan (2016). Fate of *E. coli* O157:H7 and bacterial diversity in contaminated corn silage treated with microbial and chemical additives. J. Dairy Sci. 100:1780-1794.

29. Y. Jiang, **I. M Ogunade**, S. Qi, T. Hackmann, C. R. Staples, and A. T Adesogan. (2016). Effects of the dose and viability of *Saccharomyces cerevisiae*. I Diversity of ruminal microbes as analyzed by Illumina MiSeq sequencing and qPCR. J. Dairy Sci. 100: 325-342.

30. **I. M. Ogunade**, K. G Arriola, Y. Jiang, C. R. Staples, A. T. Adesogan. (2016). Effects of three sequestering agents on milk aflatoxin M_1 concentration, performance and immunological response of cows challenged with dietary aflatoxin B_1. J. Dairy Sci. 99: 6263-6273.

31. **I. M. Ogunade**, D. H. Kim, Y. Jiang, Z. G. Weinberg, K. C. Jeong, A. T. Adesogan. (2016). Control of *Escherichia coli* O157:H7 in alfalfa silage contaminated with the pathogen: Effects of silage additives. J. Dairy Sci. 99: 4427-4436.

32. Z. G. Weinberg, Y. Chen, V. Volchinski, S. Sela, **I. M. Ogunade**, and A. T. Adesogan. (2016). An *in vitro* model to study interactions between *Escherichia coli* and lactic acid bacterial inoculants for silage in rumen fluid. Letters in Applied Microbiology 63: 60-65.

33. C. M. Huisden, N. J. Szabo, **I. M. Ogunade,** and A. T. Adesogan (2014). *Mucuna pruriens* detoxification: 1. Effects of ensiling duration and particle size. Animal Feed Science and Technology 198: 20-27.

34. A. O. Oso, O. M. O. Idowu, A. S. Haastrup, A. J. Ajibade, K. O. Olowonefa, A. O. Aluko, **I. M. Ogunade**, S. O. Osho, and A. M. Bamgbose (2013). Growth performance, apparent nutrient digestibility, caecal fermentation, ileal morphology, and caecal microflora of growing rabbits fed diets containing probiotics and prebiotics. Livest. Science 157: 184-190.

35. A. O. Oso, G. A. Williams, A. V. Jegede, R. A. Sobayo, O. M. O. Idowu, A. O. Fafiolu, O. M. Sogunle, O. S. Akinola, O. O. Adeleye, I. A. R. Olorunsola, **I. M. Ogunade**, S. O. Osho, F. O. Obadire, A. M. Bamgbose (2013). Effect of combination of whole millet feeding and mannan

oligossaccharides supplementation on growth performance, serum biochemistry and relative organ weights of growing guinea fowl (*Numidia meleagris*). Livest. Sci. 159:46–52.

36. **I. M. Ogunade**, D. Eruvbetine, A. O. Oyekunle, R. A. Olorunisola, A. C. Falola, A. O. Oso. (2012). Control of *Salmonella* organisms in laying hens with the use of feed additives. Nigeria Poultry Science Journal. 54: 125-129.

37. R. A. Olorunsola, Eruvbetine D, Oyekunle A. M., A. V. Jegede, and **I. M. Ogunade**. (2012). *Salmonella* organism transmission in hatching broiler eggs. Journal of Biology, Agriculture and Healthcare. 2: 13–16.

38. D. A. Ekunseitan, O. O. Balogun, D. Eruvbetine, S. S. Abiola, O. M. Sogunle, **I. M. Ogunade**, L. T. Egbeyale, A. A. Ayoola, O. F. Akinola, I. B. Allison, and S.O. Osho. 2012. Visual assessment, proximate composition and cost analysis of three differently processed discarded vegetable-bovine blood-rumen content mixtures. Nigerian Journal of Animal Production 39: 211-217.

Peer-reviewed Research Abstracts and Presentations

1. **Ogunade I. M.** et al. (2020). Performance, whole-blood immune gene expression, and plasma metabolome of beef steers fed diet supplemented with a *Saccharomyces cerevisiae*-based direct-fed microbial. ASAS/CSAS (**Accepted**).

2. **Ogunade I. M.** et al. (2020). Comparative effects of two multi-species direct-fed microbial products on rumen fermentation, bacterial community and metabolome of beef steers. ASAS/CSAS. (**Accepted**).

3. **Ogunade I. M.** et al. (2020). Effects of dietary supplementation of multi-species direct-fed microbial products on energy status, apparent nutrient digestibility, and rumen metatranscriptome of beef steers. ASAS/CSAS. (**Accepted**).

4. **Ogunade I. M.** et al. (2020). Effects of *Saccharomyces cerevisiae* and *Aspergillus*-based enzyme extracts on rumen fermentation, fiber digestibility, and plasma metabolome of beef steers fed red clover/orchard hay. ASAS/CSAS. (**Accepted**).

5. **Ogunade I. M.** et al. (2020). Beef steers with divergent average daily gain have altered plasma amine/phenol-metabolome. ASAS/CSAS. (**Accepted**).

6. **Ogunade I. M.** et al. (2020). Beef steers divergent in average daily gain have differential expressions of immunity-related genes in whole blood. ASAS/CSAS. (**Accepted**).

7. A. P. Cervantes, **Ogunade I. M**. et al. (2020). Inclusion of dried distillers' grains with solubles in *Lespedeza* or alfalfa-based diets for meat goats is associated with a unique ruminal microbiome. ASAS/CSAS. (**Accepted**).

8. **Ogunade, I. M** et al. (2019). DI/LC-MS/MS-based metabolomics of plasma reveals the effects of sequestering agents in dairy cows challenged with aflatoxin B_1. J. Anim. Sci. 97 (Supplement_3):414-415.

9. **Ogunade, I. M**., and Schweickart, H. (2019). Effects of a live yeast product on ruminal bacterial diversity and the ruminal metabolome of beef cattle. J. Anim. Sci. 97 (Supplement_3):395-395.

10. **Ogunade, I. M**. (2019). 1H NMR-based plasma metabolomics reveals biomarker of aflatoxin ingestion in dairy cows. J. Anim. Sci. 97 (Supplement_3):395-396.

11. **Ogunade, I. M**., and Adeyemi, J. (2019). Metatranscriptomic analysis of sub-acute ruminal acidosis in beef cattle. J. Anim. Sci. 97 (Supplement_3):394-394.

12. **Ogunade, I. M**., and Adeyemi, J. (2019). Effects of live yeast on functional attributes of rumen microbiota in beef cattle. J. Anim. Sci. 97 (Supplement_3):394-395.

13. **Ogunade, I. M.** (2019). Using NMR-based metabolomics to evaluate the effects of sequestering agents in dairy cows challenged with aflatoxin. Association of Research Director's Conference. Jacksonville, FL.

14. Jiang, Y., and **Ogunade, I. M** (2019). Effects of aflatoxin with or without binders on *in vitro* rumen fermentation dynamics. American Dairy Science Association Meeting. Cincinnati, Ohio.

15. K. G. Arriola, A. S. Oliveira, Y. Jiang, **I. M. Ogunade**, D. Kim, H. M. Silva, F. X. Amaro, A. A. Pech-Cervantes, S. C. Kim, H. Sultana, D. Vyas, L. F. Ferraretto, and A. T. Adesogan. 2019. Meta-analysis of the effect of *Lactobacillus buchneri* inoculation on dry matter recovery and aerobic stability of silages. J. Dairy Sci. (101) Supplement 2:254.

16. D. H. Ki*, F. X. Amaro, M. C. N. Agarussi, V. P. Silva, T. Fernandes, A. A. Pech Cervantes, Y. Jiang, **I. M. Ogunade**, D. Vyas, and A. T. Adesogan. 2018. Evaluation of the effects of silage inoculants on shedding of *Escherichia coli* O157:H7 in dairy cows.

17. Jiang, Y., Hansen, P., and **Ogunade, I. M**. (2019). Aflatoxin compromises development of the preimplantation bovine embryo through mechanisms independent of reactive oxygen production. American Dairy Science Association Meeting. Cincinnati, Ohio.

18. J. A. Adeyemi* and **Ogunade, I. M.** (2018). Monensin alters the functional and metabolomic profile of rumen microbiota in beef cattle. Kentucky Academy of Science Meeting. Bowling Green.

19. D. H. Kim, **I. M. Ogunade**, K. G. Arriola, D. Vyas, and A. T. Adesogan. 2018. Effect of essential oil extracted from tropical and/or sub-tropical plants on in vitro dry matter digestibility, ruminal fermentation, and methane production. J. Dairy Sci. (101) Supplement 2: 199.

20. Mccoun, M., Cannon, K., Schweickart, H., and **Ogunade, I. M.** (2018). Effects of live yeast supplementation on rumen fluid metabolome of beef cattle. Kentucky Academy of Science. Bowling Green, KY.

21. Cannon, K., Mccoun, M., Schweickart, H., and **Ogunade, I. M.** (2018). Effects of live yeast supplementation on rumen bacterial diversity of beef cattle. Kentucky Academy of Science. Bowling Green, KY.

22. **I. M. Ogunade**, H. Schweickart. (2018). Effects of monensin on rumen fluid metabolomics profile of beef cattle. ASAS/CSAS meeting.

23. D. H. Kim and **I. M. Ogunade** et al. Effect of essential oil extracted from tropical and/or sub-tropical plants on in vitro dry matter digestibility, ruminal fermentation, and methane production. J. Dairy Sci. 101 (E. Suppl. 2).

24. Y. Jiang, **I. M. Ogunade** et al. 2018. Effect of *Saccharomyces cerevisiae* fermentation product and clay sequestering agents on rumen fermentation and bacterial community of lactating dairy cows challenged with dietary aflatoxin B_1. J. Dairy Sci. 101 (E. Suppl. 2).

25. **I. M. Ogunade** et al. 2017. Effects of *E. coli* O157:H7 and silage additives on bacterial diversity and composition of alfalfa silage. J. Dairy Sci. 100 (E. suppl. 2).

26. Y. Jiang, D. H. Kim, **I. M. Ogunade** et al. 2017. Effect of sequestering agents based on a *Saccharomyces cerevisiae* fermentation product and clay on the performance of lactating dairy cows challenged with dietary aflatoxin B_1. J. Dairy Sci. 100 (E. suppl. 2).

27. A. A. Pech-Cervantes, C. F. Gonzalez, **I. M. Ogunade** et al. 2017. Bacterial expansins: A novel approach to improve efficacy of exogenous fibrolytic enzymes. J. Dairy Sci. 100 (E. suppl. 2).

28. A. A. Pech-Cervantes, **I. M. Ogunade** et al. 2017. Effect of a recombinant bacterial expansin (BsEXLX1) and fibrolytic enzymes on in vitro digestibility and preingestive hydrolysis of bermudagrass silage. J. Dairy Sci. 100 (E. suppl. 2).

29. **I. M. Ogunade** et al. 2016. Inhibiting the growth of *Escherichia coli* O157:H7 in alfalfa silage with silage additives. ADSA/ASAS Joint Annual Meeting. J. Dairy Sci. 99 (E. suppl. 2).

30. Jiang, Y., R. M. Martins, **I. M. Ogunade**, M. A. Bamikole, F. Amaro, W. Rutherford, S. Qi, F. Owens, B. Smiley, and K. G. Arriola. 2016. Correlations between the abundance of specific ruminal bacteria with milk production and total tract digestibility of dairy cows fed live or killed yeast. Abstract 1524. J. Anim. Sci. 94 (Supplement 5):740- 740.

31. **I. M. Ogunade** et al. 2016. Microbial and chemical additives inhibit the growth of *Escherichia coli* O157:H7 in corn silage. ADSA/ASAS Joint Annual Meeting. J. Dairy Sci. 99 (E. suppl. 2).

32. Olasoji, E., **I. M. Ogunade**, D. Kim, and A. T. Adesogan. 2016. Antimicrobial activity of tropical spice extracts against O157: H7. Abstract 0198. J. Anim. Sci. 94 (Supplement 5):94-94.

33. Oliveira, A. S., Z. G. Weinberg, A. A. P. Cervantes, K. G. Arriola, **I. M. Ogunade**, Y. Jiang, D. Kim, M. C. M. Gonçalves, D. Vyas, and A. T. Adesogan. 2016a. Meta-analysis of the

effect silage inoculation with homolactic or facultative heterolactic bacteria on the performance of dairy cows. Abstract 0636. J. Anim. Sci. 94 (Supplement 5):303-304.

34. Oliveira, A. S., Z. G. Weinberg, A. A. P. Cervantes, K. G. Arriola, **I. M. Ogunade**, Y. Jiang, D. Kim, M. C. M. Gonçalves, D. Vyas, and A. T. Adesogan. 2016b. Meta-analysis of the effect of homolactic and facultative heterolactic bacteria inoculation on silage quality: III Dry matter recovery, chemical composition and in vitro digestibility. Abstract 0650. J. Anim. Sci. 94 (Supplement 5):310-311.

35. Oliveira, A. S., Z. G. Weinberg, A. A. P. Cervantes, K. G. Arriola, **I. M. Ogunade**, Y. Jiang, D. Kim, M. C. M. Gonçalves, D. Vyas, and A. T. Adesogan. 2016c. Meta-analysis of the effect of homolactic and facultative heterolactic bacteria inoculation on silage quality: I– Fermentation profile. Abstract 0683. J. Anim. Sci. 94 (Supplement 5):326-326.

36. Shavone Taylor, **I. M. Ogunade** et al. 2016. Screening the activity of spices for decreasing *in vitro* enteric methane production. ADSA/ASAS Joint Annual Meeting. ADSA/ASAS Joint Annual Meeting. J. Dairy Sci. 99 (E. suppl. 2).

37. Kim, D., **I. M. Ogunade**, K. G. Arriola, D. Vyas, and A. T. Adesogan. 2016. Essential oils from three tropical species can reduce in vitro enteric methane production. Abstract 1456. J. Anim. Sci. 94 (Supplement 5):707- 707.

38. Pech Cervantes, A. A., K. G. Arriola, J. E. Zuniga, **I. M. Ogunade**. 2015. Effect of an exogenous fibrolytic enzyme on the performance of dairy cows consuming a diet with a high proportion of bermudagrass silage. Proc. Joint Ann. Mtg. ASAS and ADSA. J. Dairy Sci. 98 (E. suppl. 2).

39. Bamikole, M. A., **I. M. Ogunade** et al. 2015. Methanogenesis reduction ability of monensin and essential oils from two Nigerian citrus species. J. Dairy Sci. 98 (E. suppl. 2).

40. Bamikole, M. A., **I. M. Ogunade** et al. 2015. Effects of monensin and essential oils from some Nigerian spices on methane production and ruminal fermentation *in vitro.* J. Dairy Sci. 98 (E. suppl. 2).

41. Bamikole, M. A., **I. M. Ogunade** et al. 2015. Essential oils from goat weed (*Ageratum conyzoides*) and African basil (*Ocimum gratissimum*) can reduce *in vitro* enteric methane production. J. Dairy Sci. 98 (E. suppl. 2).

42. Y. Jiang, R. M. Martins, **I. M. Ogunade** et al. 2015. Do the viability and dose of *Saccharomyces cerevisiae* affect the digestibility, ruminal fermentation and performance of lactating dairy cattle? J. Dairy Sci. 98 (E. suppl. 2).

43. Y. Jiang, **I. M. Ogunade** et al. 2015. Effects of the dose and viability of *Saccharomyces cerevisiae* yeast on the diversity of ruminal microbes as analyzed by Illumina MiSeq sequecing and qPCR. 2015. J. Dairy Sci. 98 (E. suppl. 2).

44. **I. M. Ogunade** et al. 2014. Effect of prototype sequestering agents on performance and milk aflatoxin M1 concentrations of dairy cows fed aflatoxin B1-contaminated diets. J. Dairy Sci. 97 (E-Suppl. 2).

45. **I. M. Ogunade** et al. 2012. Effect of dietary mannan oligosaccharides on the prevalence of Salmonella organisms in the droppings of sampled laying hens within South-Western Nigeria. British Poultry Abstracts 8:44-45.

NON-REFEREED EXTENSION FACT SHEETS AND INVITED PRESENTATIONS

1. **Ogunade I. M.** Improving the performance of receiving beef cattle with a microbial additive (February 2020). Kentucky State University Extension Publication.

2. **Ogunade I. M**. Weaning management of beef calves (September 2019): Bluegrass stockyard beef cattle meeting for minority and limited resource farmers.

3. **Ogunade I. M**. Winter feed supplementation for beef cattle (October 2018): Bluegrass stockyard beef cattle meeting for minority and limited resource farmers.

4. **Ogunade I. M**. Beef cattle mineral supplementation (July 2018): Bluegrass stockyard beef cattle meeting for minority and limited resource farmers.

REPORTS SUBMITTED TO RESEARCH SPONSORS

1. **Ibukun Ogunade**. 2019. Metatranscriptomic analysis of sub-acute ruminal acidosis in beef cattle. Final report submitted to Alltech Inc.

2. **Ibukun Ogunade**. 2019. Effects of live yeast on genetic and functional attributes of rumen microbiota in beef cattle. Final report submitted to Land O' Lakes.

3. **Ibukun Ogunade**. 2019. Response of newly weaned beef steers to dietary supplementation of a blend of *Saccharomyces cerevisiae*-based direct-fed microbial and fermentation products. Final report submitted to Land O' Lakes.

4. Adesogan, A. T., K.C. Jeong, **I. M. Ogunade** and Z. G. Weinberg. 2016. The interactions between enterobacteria and lactic acid bacterial inoculants in silage. Final report submitted to BARD Project # IS-4704-15.

5. Jiang, Y., Arriola, A. T., **Ogunade, I. M**., Vyas, D., and Adesogan. A. T. 2016. Effect of sequestering agents based on a *Saccharomyces cerevisiae* fermentation product and clay on the health and performance of lactating dairy cows challenged with dietary aflatoxin B1. Report submitted to Diamond V., Cedar Rapids, IA.

6. Adesogan, A. T., **I. M. Ogunade,** and K. C. Jeong. 2015. Control of Escherichia coli O157:H7 in alfalfa silage contaminated with the pathogen: Effects of silage additives. Annual report submitted to BARD (Project # IS4704-14). November 6 2015.

7. **Ogunade, I. M**, C. R. Staples, and A. T. Adesogan. 2014. Reducing transmission of dietary mycotoxins into milk with sequestering agents. Report on a project funded by Diamond V, Cedar Rapids, IA.

AWARDS AND SCHOLARSHIPS

1. William C. and Bertha M. Cornett Fellowship Fund, University of Florida (2014/2015; 2015/2016; 2016/2017).
2. Certificate of outstanding academic achievement, University of Florida International Center (2014).
3. Grinter Fellowship for outstanding new PhD student, University of Florida, USA (2013).
4. University of Agriculture Graduate Fellowship, University of Agriculture, Abeokuta (2010).

PROFESSIONAL AFFILIATIONS

1. Member, American Society of Animal Science (2013 – Present).
2. Member, American Dairy Science Association (2013 – Present).
3. Member, Sigma Xi (2015 – Present).
4. Member, International Association for Food Protection (2016 – 2017).

PROFESSIONAL MEETINGS ATTENDED

1. ASAS/CSAS. Location: Austin, TX, Dates: July 8 – 11, 2019.
2. ADSA. Location: Cincinnati, Ohio, Dates: June 23 – 26, 2019.
3. ASAS/CSAS. Location: Vancouver, Canada, Dates: July 8 – 12, 2018.
4. ADSA Meeting. Location: Knoxville, TN, Dates: June 27 – 28, 2018.
5. ASAS-ADSA Joint Annual Meeting. Location: Salt Lake City, Utah Dates: July 19-23, 2016.
6. ASAS-ADSA Joint Annual Meeting. Location: Orlando, FL Dates: July 12-16, 2015.
7. ASAS-ADSA-CSAS Joint Annual Meeting. Location: Kansas City, MO Dates: July 20-24, 2014.
8. ASAS-ADSA Joint Annual Meeting. Location: Indianapolis, IN Dates: July 8-12, 2013.

UNIVERSITY AND PROFESSIONAL SERVICES

1. Member, Farm and Land Use Committee (April 2018 – present)
2. Member, Faculty Senate at Kentucky State University (Academic year 2020/2021)
3. Member, Faculty Search Committee for two faculty positions (Spring, 2018)
4. Member, College of Agriculture Seminar Committee (Fall, 2019)
5. Ad hoc reviewer for the following journals
    - Frontiers in Microbiology
    - Journal of Dairy Science
    - Animals
    - Agriculture
    - Brazilian Journal of Animal Science
    - Scientific Report
    - Fermentation
    - Microorganisms
    - Journal of Science of Food and Agriculture
    - Animal Feed Science and Technology
    - Grass and Forage Science
    - Journal of Stored Product Research
    - Agriculture and Natural Resources
    - Journal of Animal Nutrition